



Te Ara Tupua Alliance
Shifting gear to connect past, present and future

Construction Environmental Management Plan: Ngā Ūranga ki Pito-One

NKP-TAT-000-MPN-GV-NS-000004



Quality Assurance Statement			
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Revision Schedule		
Rev. Number	Date	Description
<i>Internal reviews</i>		
A	20/02/2023	Draft document for information & internal reviews
<i>Submission for certification</i>		
1	21/03/2023	Ngā Ūranga ki Pito-One - CEMP – for certification
2	20/04/2023	Ngā Ūranga ki Pito-One – CEMP V2

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Glossary

Acronym/Term	Description
AEE	Assessment of Environmental Effects
Alliance	Te Ara Tupua Alliance
AMT	Alliance Management Team
BNMP	Beach Nourishment Management Plan
CAQMP	Construction Air Quality Management Plan
CEMP	Construction Environmental Management Plan
CESMP	Construction Environmental and Social Management Plan
CLMP	Contaminated Land Management Plan
CMA	Coastal Marine Area
CNVMP	Construction Noise and Vibration Management Plan
CSMP	Communication and Stakeholder Management Plan
CTMP	Construction Traffic Management Plan
EMP	Ecology Management Plan
ESC	Erosion and sediment controls
ESCP	Erosion and Sediment Control Plan
Consent Holder	Waka Kotahi NZ Transport Agency
GWRC	Greater Wellington Regional Council
HCC	Hutt City Council
HNZPT	Heritage New Zealand Pouhere Taonga
HSNO	Hazardous Substances and New Organisms Act
JSEA	Job Safety and Environmental Analysis
Manager	Manager, Environmental Regulation, Greater Wellington Regional Council Manager, Compliance Monitoring, Hutt City Council Manager, Compliance Monitoring, Wellington City Council
MHWS	Mean high water springs
MSE	Mechanically Stabilised Earth
MWSG	Mana Whenua Steering Group
NZS	New Zealand Standard
PEP-C	Partnership, Environment, Planning and Communications
Project	Ngā Ūranga ki Pito-One
Railway corridor	Hutt Valley Line
RMA	Resource Management Act 1991
SH2	State Highway 2
SME	Subject Matter Expert
SSESCP	Site Specific Erosion and Sediment Control Plans
Urgent action	Any action needed to avoid, mitigate or minimise a significant adverse effect
Waka Kotahi	Waka Kotahi NZ Transport Agency
WCC	Wellington City Council
Work Packs	For the purpose of this document a Work Pack refers to the summary and integration of all key information required to deliver the construction activity and includes but is not limited to environmental considerations, cultural considerations, design and health and safety.

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1 Introduction

1.1 Background – the Project

This Construction Environmental Management Plan (CEMP) has been prepared for the Ngā Ūranga ki Pito-One Project (the Project) by the Te Ara Tupua Alliance (the Alliance). The Alliance is comprised of Waka Kotahi NZ Transport Agency (Waka Kotahi), HEB Construction, Downer NZ and Tonkin + Taylor. The Alliance is supported by Boffa Miskell, Isthmus and Holmes Consulting.

The Ngā Ūranga ki Pito-One Project comprises a 4.5 km shared (pedestrian/cycling) pathway between Ngā Ūranga and Pito-One. The Project area is shown on Figure 1.1. The Project will be located on the seaward side of State Highway 2 (SH2) and the Hutt Valley Line (railway corridor). The Project objectives are to:

- Provide safe walking and cycling infrastructure connecting Ngā Ūranga and Pito-One, that is a catalyst for increased walking and cycling between Te Whanganui-a-Tara and the Hutt Valley; and
- Enhance the resilience of the transport corridor between Ngā Ūranga and Pito-One.



Figure 1.1. Location of Ngā Ūranga ki Pito-One

The Project involves temporary and permanent works in and adjacent to the coastal marine area (CMA) including reclamation, revetments, ūranga, seawalls, offshore habitats, groynes and culvert extensions. Numerous ancillary and supporting activities are also authorised, including temporary construction yards, barge landings, upgrades to Honiana Te Puni Reserve and upgrade works within the highway and rail corridor.

1.2 Purpose and Objectives of the CEMP

This CEMP will cover all construction works (excluding enabling works) for the Project and it consolidates the:

- CEMP required by resource consent conditions CC.1 to CC.6;
- Coastal Works CEMP required by resource consent conditions CA.7 to CA.12; and
- Construction Erosion and Sediment Control Plan (ESCP) required by EW.3 to EW.10.

These plans have been consolidated as the construction activities span over both land and sea with no demarcation. To reflect this, the CEMP gathers all relevant conditions pertaining to the CEMP, Coastal Works CEMP and ESCP and addresses these requirements within this one overarching management plan.

The purpose of the CEMP is to confirm the management procedures and construction methods to be used, in order to avoid, remedy or mitigate potential adverse effects arising from all construction activities and works in the CMA associated with the Project¹. This includes setting out the measures that should be implemented during construction to reduce erosion to avoid, minimise or treat sediment discharges.

The objectives of the CEMP are to ensure the construction works:

- Comply with the resource consent conditions, other permits and relevant legislation;
- Adhere to the environmental obligations of Waka Kotahi and the Alliance; and
- Remain within the limits and standards approved under the resource consents.

To ensure that the purpose and objectives of the CEMP are achieved, the activities associated with the CEMP are considered in the Job Safety and Environmental Analysis (JSEA) process and the preparation of work packs. This process is described in Section 2.4 of this CEMP. Relevant information from the CEMP will be incorporated into the development of Site Specific ESCPs (SSESCPs) and the work packs.

The CEMP will be reviewed at least once every six months. Changes may also be required during the construction period to address changes to the construction methodology or unforeseen adverse effects arising from incidents. The review process is outlined in Section 2.1.2 and 2.1.3 of this CEMP.

1.3 Mana Whenua Values

A Mana Whenua Steering Group (MWSG) has been established for this project to:

- Facilitate ongoing engagement with mana whenua in respect of the activities authorised by the resource consents.
- Provide an opportunity for mana whenua to provide kaitiaki inputs into the Project.
- Ensure appropriate tikanga and kawa (customary practices and protocols) are being applied throughout the development and implementation of the Project.
- Acknowledging the history of the area, and therefore ensuring prominence, primacy and permanency throughout the project.

The Te Ara Tupua Kaitiaki Principles were developed for the project by Taranaki Whānui advisors and the MWSG. Table 1.1 lists the kaitiaki principles and demonstrates how the principles have been taken into account when preparing this plan. The Kai Ruruku has been involved in the preparation of the CEMP and the ongoing preparation and review of relevant Work Packs.

¹ In accordance with resource consent condition CC.1(b) and CA.7(b)



Table 1.1. Kaitiaki Principles

Kaitiaki Principle	How the Kaitiaki Principles have been met
Ranginui - the connection to the various spiritual realms of the great and vast heavens, the source of light and understanding, growth and ultimate link to the celestial family.	The name Te Ara Tupua gifted to the project recognises a relationship to Ranginui and acknowledges the traditional narrative of the tupua who created Te Whanganui-a-Tara. In addition, the development and use of iwi mana whenua cultural protocols / tikanga of the project will allow the connection to the various spiritual realms to be realised.
Mouri - The mouri of Te Ara Tupua – the living relationship between the ngahere, the cliffs, the water ways, hinemoana and everything that lives within that environment have their own individual and interdependent vitality.	Iwi mana whenua have a holistic and deep relationship to all of the environment; the water, the land, the air, and the people in particular Te Whanganui-a-Tara. In appreciating this, all the environmental effects of the Project are, in essence, an impact on values that are important to mana whenua. This management plan seeks to avoid, mitigate and minimise potential adverse effects to ensure that the mouri of natural resources and their associated ecosystems are sustained.
Wai Tai, Wai Māori - Nga wai tuku kiri tai noa atu ki hinemoana – the connection between the springs, streams, aquifers, rivers and all waterways that bring with them their life, mouri and mana which eventually mingles together with Hinemoana.	This management plan identifies the interfaces between different ecosystems such as streams and the CMA, and seeks to ensure the resources are managed as a integrated and holistic way. In addition, this management plan seeks to ensure that sediment in the CMA is managed to a level that will not negatively impact the CMA and associated ecosystems.
Ahua - The character of Te Ara Tupua is seen, the beauty, the mystique, the wonder, the wild and rawness – the identity of Te Ara Tupua endures beyond the present through capturing and captivating the hearts and minds of the few and the many.	The Project is designed to fit with the natural landforms and seafloor while avoiding sensitive ecology and will allow a reconnection with the many moods of Te Whanganui-a-Tara.
Tātai Whakapapa - The history, the connections, the relationships and friendships – they shape the land and the people.	The CEMP seeks to acknowledge the narrative of Te Ara Tupua as the holistic connection for iwi mana whenua to Te Whanganui-a-Tara. In addition, through adherence to the accidental discovery protocol and the Archaeology Management Plan there can be the protection and celebration of culturally significant sites along the Project footprint.
Whānau - The care of manuhiri and people is embedded in the identity of Te Ara Tupua seeking to ensure a strong sense of connection imbuing a strong sense of responsibility towards Te Ara Tupua	The purpose of the Project is to provide safe connection for cyclists, walkers and others between Wellington and Hutt Valley. In addition, iwi mana whenua are being invited to be involved in the development and implementation of tikanga and cultural indicators. These will be utilised throughout the Project to ensure that the construction of the Project is undertaken in a caring and responsible manner.
Mana Whenua -Te Ara Tupua is seen as a living piece of the identity of Mana Whenua who take pride in this space, taking on the obligation of care, responsibility and giving life to its history and story.	The operation of the MWSG seeks to ensure that Mana Whenua interests and aspirations are voiced and thus, appropriately integrated throughout the Project.
Papatūānuku - The mountains, the cliffs, the landforms, the geology, ngahere, trees, birds – they all need each other to exist.	The CEMP enables the construction of the Project in an environmentally responsible manner; recognising the interconnectedness of the natural environment. Ultimately, the Project (once constructed) is designed to sit seamlessly with the natural landforms of Te Whanganui-a-Tara and to in part re-mediate (to a degree) the high infrastructural load through the corridor in a way that works with rather than against Papatūānuku.

1.4 Statutory and Other Requirements

1.4.1 Resource Consents

1.4.1.1 Overview

Resource consents² for the Project have been obtained as recorded in the decision of the Expert Consenting Panel under clauses 37 and 40 of the Covid-19 Recovery (Fast-Track Consenting) Act 2020. The full record of consents granted is attached in Appendix A: Resource consent record of this plan. On 4 April 2022, a variation to the existing resource consents was granted by Greater Wellington Regional Council (GWRC) in accordance with section 127 of the Resource Management Act (RMA) 1991.

Under the resource consent conditions, the consent holder (Waka Kotahi) is required to prepare and submit a:

- CEMP for information to the Manager, GWRC, Hutt City Council (HCC) and Wellington City Council (WCC) at least 20 working days prior to the Start of Construction³ in accordance with condition CC.1(c) for information;
- Coastal Works CEMP for certification to the Manager, GWRC at least 20 working days prior to the anticipated Start of Construction in the CEMP in accordance with condition CA.7(c) for certification; and
- ESCP for certification to the Manager, GWRC at least twenty working days prior to the anticipated Start of Construction in accordance with condition EW.3(c) for certification.

On this basis, this CEMP is only certified by GWRC and is provided to WCC and HCC for information only.

All resource consent conditions relevant to this CEMP are attached in Appendix B: Resource consent conditions with a reference to where they are addressed in the CEMP. A copy of the full resource consent will be stored on the Project shared drives and provided to all contractors undertaking on-site works.

1.4.1.2 Integration with Other Management Plans

There are various other management plans required for the Project which cover specific aspects and the management of effects. The CEMP generally does not repeat the protocols or procedures that are addressed in other management plans, including relevant incident responses. These management plans are summarised in Table 1.2. All management plans will be stored in the Project offices and on the shared drives for the duration of the Project.

Table 1.2. Other management plans required for the Project

Topic	Management Plan
Traffic	Construction Traffic Management Plan (CTMP)
Noise and Vibration	Construction Noise and Vibration Management Plan (CNVMP)
Ecology	Ecology Management Plan (EMP)
Contaminated Land	Contaminated Land Management Plan (CLMP)
Archaeology and Cultural Artefacts	Archaeological Management Plan
Beach Nourishment	Beach Nourishment Management Plan (BNMP)
Communications and Complaints	Communication and Stakeholder Management Plan (CSMP)

² Consent reference EPA210001

³ Start of Construction is defined as 'the time when Construction Works (excluding Enabling Works), or works referred to in a specific condition, start.



1.4.2 Wildlife Permit

A Wildlife Permit, authorisation number 91847-FAU, was issued to Waka Kotahi on 15 April 2021. The Wildlife Permit authorises Waka Kotahi under Section 53 (taking or killing of wildlife for certain purposes) of the Wildlife Act 1953 subject to the terms and conditions contained in the authority. A copy of the Wildlife Permit will be stored on the Project drives and provided to the contractors undertaking the on-site works.

The authority authorises the catch, release and handling of kororā within the Project footprint. Any capture, handling and relocation of kororā is required to occur in accordance with the 'Penguin Management Plan', dated 4 February 2021 and the Wildlife Permit.

The authority also authorises the capture, handling and relocation of the following reptiles:

- Northern Grass Skink;
- Copper Skink;
- Glossy Brown Skink;
- Ornate Skink;
- Raukawa Gecko;
- Ngahere Gecko; and
- Barking Gecko

Any capture, handling and relocation of lizards is required to be undertaken in accordance with the 'Lizard Management Plan', dated 30 March 2021 and the Wildlife Permit.

1.4.3 Archaeological Authority

Waka Kotahi holds an archaeological authority (reference: 2022/078) granted under the Heritage New Zealand Pouhere Taonga Act 2014. The archaeological authority requires:

- Contractors on site to be briefed by a s45 approved person or their delegate.
- Notification to Heritage New Zealand Pouhere Taonga (HNZPT) at least two working days prior to the commencement of works and within five days of completion of works.
- The authority must be exercised in accordance with the Archaeological Management Plan.
- All earthworks that may affect an archaeological site must be monitored by a s45 approved person.
- Provide a report outlining the archaeological work undertaken to the Heritage New Zealand Pouhere Taonga Senior Archaeologist.

The Archaeological Management Plan requires:

- An archaeologist and Mana Whenua Cultural Advisor to be on site for works within Section 3, as shown on Figure 1.2, unless advised otherwise; and
- For works within Sectors 1 and 2 as shown on Figure 1.2, the archaeologist and Mana Whenua Cultural Advisor will be on call.



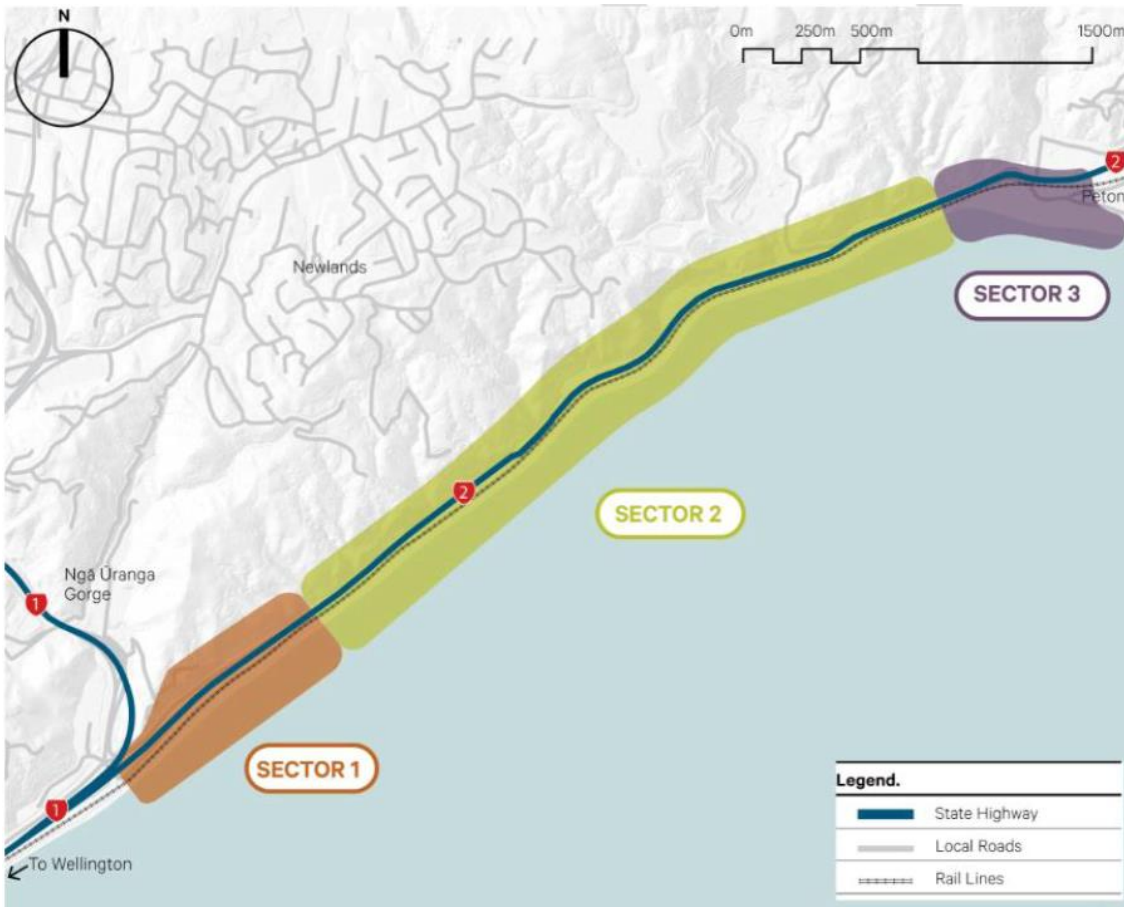


Figure 1.2. Project sectors as shown in the Archaeological Management Plan

1.4.4 Reserves Act Approval

Waka Kotahi has obtained approval from HCC under the Reserves Act 1977 for the temporary use (approximately three years) of Honiana Te Puni Reserve during construction. This approval also excludes the public from the work area for a period of three years.

The proposed use of Honiana Te Puni Reserve is detailed in the report 'Honiana Te Puni Reserve: Application to Hutt City Council under the Reserves Act 1977' prepared by Beca on behalf of Waka Kotahi, dated 2 November 2020.

1.4.5 Minimum Requirements

The Minimum Requirements for the project as set by Waka Kotahi include a number of environmental management requirements. The project has an overarching Construction Environmental and Social Management Plan (CESMP) and this document identifies all of the Projects environmental obligations including how these addressed, monitored and reported. Several of the requirements are addressed in this document including:

- A Construction Air Quality Management Plan (CAQMP) (refer to Appendix C: Construction Air Quality Management Plan); and
- Maintenance of an environmental effects register (refer to Section 4).

1.5 Report Structure

This CEMP has been structured around the requirements outlined in the consent conditions. The CEMP is structured as follows:





- Section 1 – Introduction
- Section 2 – Construction Environmental Management Plan
- Section 3 – Construction Methodology
- Section 4 – Environmental Considerations
- Section 5 – Implementation and Operation
- Section 6 – Erosion and Sediment Controls
- Section 7 – Monitoring and Reporting
- Section 8 – Contingencies and Incident Procedures
- Section 9 – Health and Safety Requirements



2 Construction Environmental Management Plan

This section of the CEMP describes the review and update process, roles and responsibilities, training and the JSEA development process including the production of work packs.

2.1 Reviews and amendments to the CEMP

2.1.1 Certification

The CEMP will be submitted to GWRC for certification in accordance with PC.5 and HCC and WCC for information at least 20 working days prior to the anticipated start of construction.

If twenty working days have passed since the management plan has been submitted for certification, and no response has been received, the CEMP shall be deemed to be certified.

If the Manager, GWRC is unable to certify the Management Plan, the Manager shall provide reasons and recommendations for changes to the management plan. The Consent Holder shall resubmit an amended CEMP to be certified. If the Consent Holder has not received a response from the Manager, GWRC, within five working days of the date of resubmission, the CEMP will be deemed to be certified.

2.1.2 Review of CEMP

The CEMP will be reviewed every six months to see if it needs to be updated. The review will be organised by the Partnerships, Environment, Planning and Communications (PEP-C) Manager. The CEMP may also be updated at any time in response to incidents, complaints, changes to the construction methodology, the identification of new methods and knowledge obtained from JSEA reviews, site inspections / audits and the monitoring regime.

2.1.3 Amendments to the CEMP

If the CEMP is required to be amended, and relative to the nature of the amendments, the Alliance will discuss and submit the amendments to:

- The Manager, Environmental Regulation, GWRC (the Manager);
- The Manager, Compliance Monitoring, HCC; and
- The Manager, Compliance Monitoring, WCC.

There is no need for the plan to be re-certified (in accordance with condition PC.5(f)) where:

- The amendment(s) will have no, or a de minimis adverse effect on the environment, or is a change that results in an improved environmental outcome; or
- The amendment is an administrative change, including nominating personnel; or
- The revised CEMP is provided to the Manager, and the Manager has not advised within 10 working days that the amendment shall not be certified; or
- In accordance with Section 6.7 of this management plan.

If the changes to the plan do not meet the above, amendments to the CEMP must be certified prior to any changes being implemented. Any amendments made to the CEMP will be in accordance with the purpose and objectives of the CEMP as outlined in Section 1.2.

The Project team will be informed of any changes to the CEMP through regular Project communication processes and the on-site version of the management plan will be updated promptly and prior to any works associated with the amendments being implemented.



A schedule of updates to the CEMP will be maintained in Appendix D: Schedule of updates, as required. Updated versions (once certified) will be maintained in InEight (document control system) and re-issued to the relevant parties.

2.1.4 Site Specific Erosion and Sediment Control Plans

The requirements relating to ESCPs are contained within Section 6 of this plan.

Site Specific Erosion and Sediment Control Plans (SSESCPS) will be prepared for all construction areas or activities covered by a work pack. This will include all works along the path, the shared path bridge and the operation of the construction yards at Pito-One and Ngā Ūranga. SSESCPs will provide information on:

- Potential sediment sources.
- Detailed method statements for the construction activities with emphasis on erosion and sediment control measures.
- Programme for the works.
- Details on specific fill materials to be used.
- Any special measures for encountering contaminated materials.
- For works in the CMA south of Karanga Point, measures to minimise the resuspension of potentially contaminated sediments (this will involve referencing the CLMP and discussions with the Contaminated Land expert).
- Any specific noise and/or vibration controls required for a piece of works in accordance with schedules created for the CNVMP.
- Methods to address the safety, integrity and protection of network utilities will be covered under the relevant SSESCPs.
- Key contacts.
- Specific requirements for refuelling.

The preparation of the SSESCPs will generally rely on the procedures and methods outlined in this CEMP and will also utilise practical experience gained from inspections and audits.

The Alliance intend to use SSESCPs as a key construction management tool to provide concise information on the environmental management requirements focused to particular locations or activities. This is to ensure that the information is readily available to those undertaking the construction activities.

SSESCPs will be submitted to the Manager, GWRC for certification at least five working days prior to works associated with the specific area or activity from occurring. No earthworks activity shall commence until the ESCP or relevant SSESCP is certified.

2.2 Roles and Responsibilities

Table 2.1 summarises the main roles and responsibilities in relation to the CEMP. A key contact list for the Project will be maintained for the duration of the Project and provided to the Councils. Any updates to the key contacts list will be sent to the Councils and other key stakeholders as required.



Table 2.1. Roles and responsibilities

Organisation	Role	Responsibilities
The Alliance	Alliance Manager	<ul style="list-style-type: none"> Overall responsibility for the Project Ensuring all processes are followed Audits
	Area Manager	<ul style="list-style-type: none"> Review JSEA and work packs Programme management Performance monitoring
	Project Ecologist	<ul style="list-style-type: none"> JSEA input and work pack approval Training (covering ecological matters) Inspections and monitoring* Construction planning in conjunction with Area Manager
	PEP-C Manager	<ul style="list-style-type: none"> Preparation and review of CEMP and updating Review of JSEA's and Work Pack approval including SSESCPs Training (covering environmental matters) Inspections and audits* Receiving feedback Incident and complaint management Record keeping Reporting Preparation of SSESCP Contact for regulatory authorities Oversees installation and maintenance of ESCs
	Environmental Advisor	<ul style="list-style-type: none"> Preparation of CEMP Review of work packs including SSESCPs Inspections, audits and monitoring including of SSESCPs and erosion and sediment controls Managing compliance with resource consents and associated permits Record keeping Reporting Preparation of SSESCP Contact for regulatory authorities. Oversees installation and maintenance of ESCs On site responsibility to ensure erosion and sediment controls (ESCs) management is undertaken in an effective manner on site
	Construction Manager	<ul style="list-style-type: none"> Review and Approval of JSEA and Work Pack approval Overall Project planning
	Construction Supervisor	<ul style="list-style-type: none"> Involvement in the preparation and review of JSEAs On site responsibility to ensure ESC management is undertaken in an effective manner on site. Job start briefings Organise equipment, materials and crew
	Health and Safety Lead	<ul style="list-style-type: none"> Assist in the development of Safety aspect of JSEA and Works Methodologies Review JSEA and Work Pack approval Inductions
	Project Liaison Person	<ul style="list-style-type: none"> Main point of contact for the public engagement
	Kai Ruruku	<ul style="list-style-type: none"> Interface with Mana Whenua

Organisation	Role	Responsibilities
		<ul style="list-style-type: none"> ▪ Cultural protocols ▪ Kaitiaki monitoring* ▪ Work pack approval process
	Project Surveyor	<ul style="list-style-type: none"> ▪ Setting out the delineation of the works area.
	Project / Site Engineers	<ul style="list-style-type: none"> ▪ Involvement in the preparation, co-ordination and review of work packs / JSEAs which includes SSES CPs ▪ Daily on-site checks of ESCs and SSES CPs ▪ Responsible for ensuring ESCs are implemented ▪ Record keeping ▪ Job start briefings
	Archaeologist	<ul style="list-style-type: none"> ▪ Supervising earthworks as required ▪ On call for the accidental discovery of artefacts
<i>Regulatory Authorities</i>		
WCC	Manager, Compliance Monitoring	<ul style="list-style-type: none"> ▪ Receipt of CEMP for information ▪ Auditing to ensure consent conditions are being met
HCC	Manger, Compliance Monitoring	<ul style="list-style-type: none"> ▪ Receipt of CEMP for information ▪ Auditing to ensure consent conditions are being met
GWRC	Manager, Environmental Regulation	<ul style="list-style-type: none"> ▪ Certification of CEMP ▪ Auditing to ensure consent conditions are being met ▪ ESC inspection

*Inspections and audits maybe delegated to suitably qualified staff members

2.3 Induction and Training

2.3.1 Project Induction

All staff working on the Project will be required to undertake a formal induction training process. The induction training will be tailored to focus on the relevant considerations for the activities covered by the CEMP and will include:

- Requirements of the resource consents, permits and management plans (including the CEMP).
- Environmental responsibilities of Project staff.
- Matters of cultural significance.
- Procedures relating to archaeology.
- Actual and potential environmental effects associated with the Project construction works.
- Areas of high environmental, cultural or landscape value.
- Details on the ecology of the area and an overview of sensitive areas.
- Construction traffic management.
- Location of sensitive receptors.
- Methods for providing for the health and safety of the general public.
- Hazard and risk management.
- Project communications and complaint management procedures.
- Environmental monitoring.

A record of staff who have completed the induction training will be maintained by the Alliance.



2.3.2 Job-start Briefing

Prior to the start of each shift, the crew will be given a job-start briefing that will cover all relevant construction packages. The approved JSEA will be used as the reference information for the briefing as follows:

- The briefing will include discussion of safety, quality, environmental protection and sustainability aspects relevant to the construction activities.
- Team members will have the opportunity to improve the hazard control elements of the plan.
- The work will then be performed in accordance with the Job Start Briefing, and the approved JSEA.

An environmental management representative will attend when required to explain new environmental controls or reiterate existing controls as required.

2.3.3 Specific Training

In addition to the Project induction and job start briefings site personnel will undergo specific training. Table 2.2 identifies specific training that will be provided.

Table 2.2. Specific training

Environmental topic	Target audience	Summary
Environmental process and procedures	Construction engineers and supervisors	Identification of high-level environmental risks and the procedures to avoid, mitigate or remedy these.
Contaminated land	Construction team	Identification of high-risk areas and accidental discovery protocols
Refuelling	Site personnel involved in refuelling	Good practice refuelling procedures and emergency response
Spills	All site personnel	Spill response procedures
Hazardous substances	Site personnel involved in storage and use of hazardous substances	Correct storage and handling procedures and emergency response.
Ecological	All site personnel	Identification of species within works footprint and known areas of habitat. Procedures for working in and around these areas
Erosion and sediment control	All site personnel	Basic purpose and importance of controls, processes to be followed around monitoring, maintenance and decommissioning of controls. Specialised training will be given to Project engineers and supervisors.

The training will be undertaken utilising specialist members of the PEP-C team, Health and Safety Team and Construction Engineers and Supervisors. The training will be structured to identify the potential environmental risks and opportunities to avoid these risks as primary focus, and a secondary focus of remedying or mitigating the effects. Methods of training will include specific training sessions, toolbox meetings and practical drills / exercises.

2.3.4 Site / Hazard Board

The site / hazard board will be displayed in an area where it is visible to all staff to view upon entering the site. It will list the relevant environmental hazards and controls that have been identified and assessed in relation to the works being undertaken. The site / hazard board will be reviewed and updated to take account of new hazards and environmental risk, or changes in the degree of risk or hazards.



New hazards or changes in risk will be identified in the work method statements or in the job briefing. In addition, hazards and risks will be reported during toolbox meetings.

2.3.5 Toolbox Meetings

In addition to the specific training identified in Section 2.3.3, environmental and cultural considerations will be an agenda item for the weekly toolbox meeting when required. Toolbox meetings will be used to emphasise and discuss the importance of effective and efficient environmental management practices. One of the purposes of these meetings is to ensure that an awareness for adverse environmental effects and processes for avoidance is part of the daily considerations of the construction team. The meetings also provide an opportunity for those undertaking the construction activities to provide feedback on how to avoid, better mitigation or remedy environmental effects.

2.3.6 Record Keeping

Environmental induction and training records will be maintained on the Project drives by the Alliance. The record will include:

- Who was trained.
- When the person was trained.
- The name of the trainer.
- General description of training content.
- Level of competence achieved by the trainee.
- Expiry dates of training courses/certifications as appropriate.

The PEP-C Manager will be responsible for ensuring Project staff receive an appropriate level of environmental training in relation to their position and that appropriately trained personnel are undertaking site activities. The PEP-C Manager will be responsible for ensuring the training records are properly maintained.

2.3.7 Relevant Documentation

All staff and contractors will be provided with a copy of the resource consent, work packs and certified management plans prior to the commencement of construction works.

Copies of these documents will be kept at the Project site yard and on Project drives. The Project Engineer will be responsible for ensuring this requirement is met and that all Project staff are aware of where they can access these documents.

2.4 Work Packs and JSEAs

All activities will be subject to a JSEA process and the creation of work packs to ensure that an appropriate level of environmental management is always applied and adhered to. The work pack approach is used as it integrates environmental management and health and safety into the construction process as opposed to it being an add on activity. The process for creating a work pack is shown in Figure 2.1. Work packs are live documents and will be regularly updated.



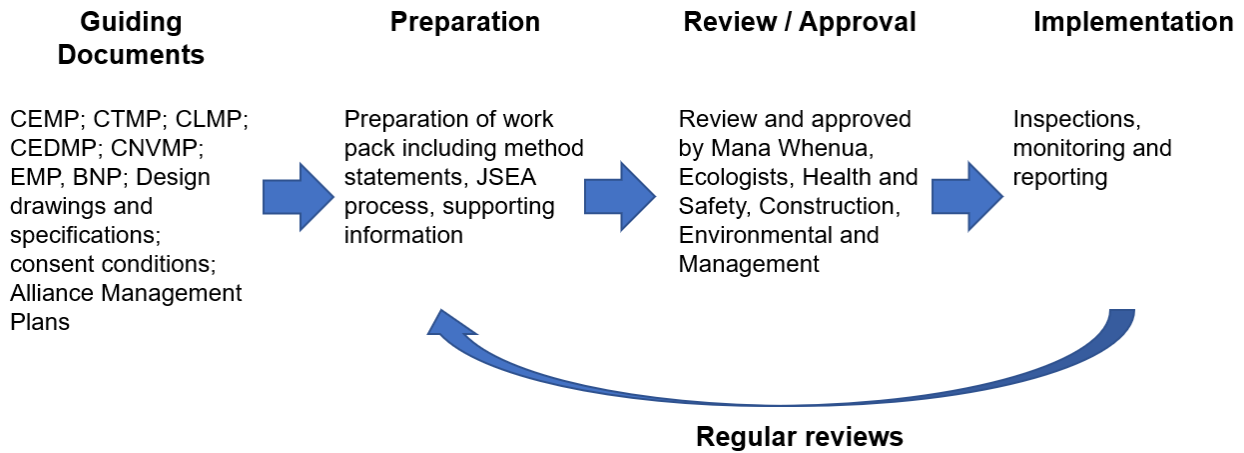


Figure 2.1. Work pack preparation flow diagram

The JSEA process is a key part in the development of work packs. All construction activities will be categorised on the basis of location and activity type. A JSEA will be undertaken for each activity at each location and a JSEA will only be operative for a maximum of four weeks. Following this, the JSEA will be reviewed.

The JSEA process is co-ordinated by the person responsible for the delivery of an activity. In most instances, the JSEA process will be led by the Area Manager or Project Engineer and supported by the relevant subject matter experts (SME). The JSEA process will also involve other relevant members of the construction team. The specialists from within the Project may include the Project Ecologist, PEP-C Manager, Environmental Advisor and Kai Ruruku. As part of the JSEA process, there is consideration of the potential adverse effects that may arise from the construction activities and the most appropriate methods for avoiding, minimising and mitigating these effects are identified.



3 Construction Methodology

General arrangement plans have been attached in Appendix E: General arrangement plans⁴ and the key construction elements include:

- Seawalls and revetments - these elements are repeated along the length of the shared path.
- Shared path bridge at Ngā Ūranga.
- Finishing elements such as planting, lighting, fencing and signage.

This section provides an overview of the different construction activities that will occur as part of the works. More detailed construction methodology information will be contained in the work method statements and SSESCPs. There are also temporary structures relating to the Project including Barge Landings, site offices and level crossings; details regarding the construction of these elements have been provided to Council in 'Enabling Work CEMPs'. This section does not repeat information already provided to the Council; except where specifically required by the resource consent conditions.

3.1 Construction Programme

A time and location drawing showing the construction programme is shown on Figure 3.1. This shows the general timing of different activities and the duration over which they will occur. This is updated by the Alliance each month. The Alliance will provide the Councils with an updated time location drawing on an as required basis as a minor amendment to the CEMP (not requiring re-certification). The programme shows construction will occur at several locations at the same time.

⁴ Detailed design drawings for coastal structures will be provided to the Council for certification in accordance with CA.3.



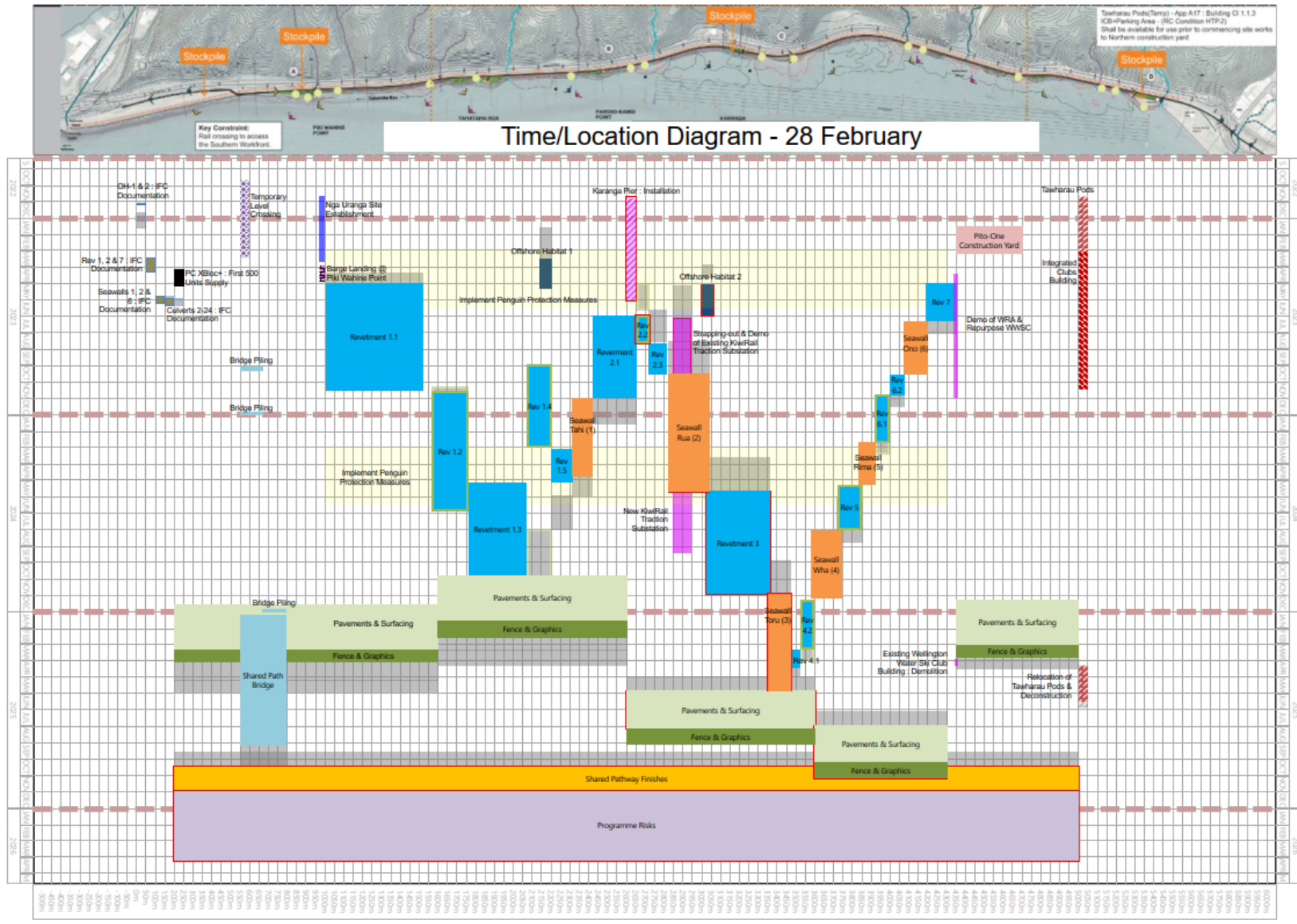


Figure 3.1. Time-location diagram (February 2023)



3.2 General Construction Methodology

Access to the construction site will be via:

- Ngā Ūranga yard and moving northwards;
- Pito-One yard and moving southwards;
- Karanga Barge Landing Area and working to the south and north; and
- Access gained by barge from the construction of revetments (once a structure has been completed). Spuds on the barge will be used to moor the barge at a location.

For the works commencing at the Pito-One Construction Yard it is proposed to create a haul path from which the revetments can be created.

The construction process includes:

- Preparation – planning, site set up, set out for works, ecology checks and installation of environmental management measures.
- Building foundations – excavations for the foundations, placement of concrete or the placement of fill upon which the secondary and primary armour are placed.
- Seawall and revetment construction – this may include the placement and keying in of concrete blocks to form the seawall or the placement of rock or concrete Xblocs to create the revetment.
- Backfilling – placement of fill material to create the surface for the shared path.
- Finishing – building the path, installation of lighting and other surfaces, bridge construction and demobilisation.

Construction activities will be occurring within the construction zone at several locations simultaneously (generally up to seven work sites). The construction zone is defined as the area of disturbance beyond the footprint of the permanent works (i.e. the seawalls and revetments to be constructed); in general this may be up to 10 m from the permanent works.

The amount of space available for the storage of material within the works area is limited, and therefore, materials will be bought to the site from the construction yards on a 'just in time' basis. Similarly, the material excavated to form the foundations will be removed as soon as practical if it is not to be re-used or easily stored within the works area. Some materials may get stored in wind-rows in front of the works areas; behind foundations; or put into a pile to be removed at the end of the day. This construction philosophy is to minimise the potential for adverse effects and allow the site to be prepared rapidly for adverse climatic or marine conditions.

3.3 Enabling Works and Temporary Structures

The temporary structures that will be utilised during construction include the Karanga Barge Landing and Piki Wahine Barge Landing; the location of these structures is visible on Figure 5.4 and Figure 5.5. Detailed information relating to the construction of these structures was provided to GWRC in the Enabling Works CEMP (V3) and the design detail has previously been provided to GWRC.

In summary, both landings involve hammering and vibroing piles to sufficient depth to ensure stability of the structure. Landing staging is installed following this. The general process is repeated until the landing is constructed in its entirety and ready for use. These structures will remain in place for the duration of construction.

3.4 Existing Structures

The existing seawalls and revetments will be removed progressively during construction. In general, the construction methodology for both seawalls and revetments will include digging into the existing structures. Where possible, the existing structure will be retained.

The Project requires the removal of the existing KiwiRail traction station and the Wellington Rowing Association Building and Wellington Water Ski Club Building. Prior to the demolition of these buildings, the



buildings will be assessed for asbestos and other contaminants. If required, appropriately qualified contractors will remove them.

3.5 Seawall Construction

Six seawalls will be constructed as part of the Project and the seawalls cover a length of approximately 800 m. The seawalls to be constructed are a Mechanically Stabilised Earth (MSE) seawall structure and the structural facing units at a CIRTEX MagnumStone™ precast block or similar units with Geogrid Positive Connections. This construction system provides with a greater safety factor than a conventional wall.

The construction of the seawalls will generally include:

- Undertaking pre-start procedures. This will include working with the Project Ecologist to determine if any special requirements are needed such as a kororā sweep; engaging with stakeholders; and an assessment of the noise of the plant and equipment.
- Implement all appropriate controls including erosion and sediment controls (ESCs).
- A work level platform will be established.
- A digger will be used to excavate to shingle material and rock (excavation is generally to be to 1 to 2 m below seabed) and then a concrete foundation will be poured.
- Precast blocks will be placed on this foundation.
- Backfill will be used to fill the void between the existing KiwiRail revetment and the pre-cast blocks. This material will be compacted. Geogrid is to be placed and tied to be blocks as part of the retention of the fill.
- Beach nourishment will occur at sections of the seawall during construction of the Project. This will be undertaken using salvaged shingle beach material from within the Project footprint and in accordance with the BNMP.

3.5.1 Options for Seawall construction

The above covers the general methodology that will be followed for seawall construction, exact methods may change depending on the actual site conditions and other construction related constraints. Therefore multiple options are being included to offer the ability to adapt the exact methods when the works are undertaken and to minimise environmental effects. Note that exact methodologies and a higher level of detail will be included in the relevant SSES/CP/s.

The options may include:

1. Option 1 (preferred methodology).
 - To isolate the work site from the wider marine environment a silt curtain will be installed to surround the general works area.
 - Site will be accessed along existing ground between the rail and ocean.
 - Within this area isolated by appropriate controls this may include a bund will be formed out of bulk bags on the outer face of the work site to offer further protection / isolation. Some work may be required to create a suitable platform for the bags to sit on such as flattening beach deposits and removing large rocks.
 - Trenching for the mass concrete footing.
 - Secondary bulk bag bund formed on inside edge of trench, essentially forming the second trench 'wall'.
 - Pumps will be set up to remove accumulated water from within the trench (between the two bulk bag bunds) to create a dry working area.
 - Water will be either discharged to receiving environment (if water quality parameters are met) or pumped to a treatment device prior to discharge.
 - Mass pour concrete footings.
 - Place precast blocks, infilling with concrete.
 - Undertake backfill behind blocks.
 - Install ecological barrier on top of the seawall, concreting this into place.
 - Placement of rock / blocks.



2. Option 2

- This option generally follows the same methodology as Option 1, however this allows for the pouring of concrete without the inner bulk bag bund installation or pump operation. Instead concrete will be poured in the wet with the water contained within the outer bulk bag bund. This water will not be discharged until water quality parameters are met, including pH.

3. Option 3

- This option will be utilised in the event that limitations such as space restrictions becomes unrealistic. In this case a haul road / causeway may be required to be constructed to allow access for seawall construction. This will include:
 - o Installation of silt curtain.
 - o Placement of bulk bag bund at outer face of works site.
 - o Placement of riprap (clean) to form haul road.
 - o Operate off constructed haul road as per Option 1 / 2.

4. Option 4

- While it is not planned to use a barge for seawall construction this option is being provided as contingency. Seawall construction methodology will remain the same bar the works will be undertaken from a barge rather than from land.

5. Option 5

- In problematic areas an option to undertake works using amphibious excavators may be utilised. Actual seawall construction will follow the methodologies identified in Options 1 / 2.

3.5.2 Beach Nourishment

The consent conditions require the preparation of a BNMP. The details of beach nourishment will be set out in BNMP. The construction method will entail 3 steps including removal, storage and placement. The BNMP will also specify which materials are suitable for the purpose of beach nourishment.

The BNMP will specify which materials will be suitable for beach renourishment. The potential source of material ranges from sand through to rock. However, the majority of material will be cobbles and gravel. The nourishment materials will be recovered using an excavator. This material will either be stockpiled in the dry or directly placed into its final position. The dry storage will either be in one of the construction yards or above MHWS along the construction corridor. The direct placement will be from the location of a seawall under construction to the beach adjacent to a completed seawall. The material used for nourishment will be placed in front of a section of seawall or adjacent to the revetment transition, as per the beach nourishment design. The material will be left in a pile and naturally distributed along the beach over time as results of tidal and wave action, spread out manually with an excavator (to a maximum depth informed by the project ecologist), or a combination of both. The BRMP will specify what method will be used.

3.6 Revetment Construction

The construction of the revetment will either occur from land or from a barge. The following section provides an overview of both options. In general, for the construction of revetments excavations will typically be to 1 m below the seabed. The base of the revetment will always be below low tide.

3.6.1 Revetment construction from barge

The construction methodology will generally include:

- Undertaking pre-start procedures. This will include working with the Project Ecologist to ensure the barging mooring will not have adverse effect and a kororā sweep where required; engaging with stakeholders; and an assessment of the noise of the plant and equipment.
- Mobilisation of plant and equipment and ensuring that all appropriate controls have been implemented.
- An excavator will be used from the barge to excavate the revetment foundation. The depth of excavation will generally be 1m to 2m deep and 2m wide. The excavated material will placed on the barge.



- Geofabric will be placed over the excavated foundation section (as both an erosion and sediment control and in accordance with the design) and the secondary rock armour will be placed in the excavated foundation area.
- Following this, the primary rock armour will be placed from the barge.
- Rock pools will subsequently be placed in a suitable location amongst surrounding rock and primary rock armour.
- At the completion of placement of the primary armour general fill material will be used to backfill behind the rock revetment.
- Once a section of new revetment has been constructed, this will be used as a landing point during construction to construct surrounding revetments and seawalls from land.

During the construction of the revetment from the barge, there will be continual involvement of the surveyors to ensure that the activity meets the specifications of the design.

3.6.2 Revetment construction from land

The construction methodology will include:

- Undertaking pre-start checks. This include working with the Project ecologist to determine if special measures are required such as a kororā sweep; engaging with stakeholders; and an assessment of the noise of the plant and equipment.
- Mobilisation of plant and equipment and ensuring that all appropriate controls have been implemented.
- The existing revetment will be removed and excavated. Large rocks and other material that can be re-used will be stockpiled on site. This rock may be placed temporarily in the construction zone which will provide some protection for construction activities, prior to reuse.
- Import general fill material to site and spread using appropriately sized plant.
- Geofabric material will be placed over the fill, followed by the secondary rock armour.
- The remaining general fill will be placed atop this fill.
- Following the establishment of the fill, geofabric and underlayer, the Xbloc units or larger rock will be put into place using a long-reach excavator.
- Rock pools will subsequently be placed in a suitable location amongst surrounding rock and primary rock armour.

During the construction of the revetment from land there will be continual involvement of the surveyors to ensure that the activity meets the specifications of the design.

3.7 Culverts

23 culverts will be extended during construction. This includes both stormwater culverts and intermittent and perennial stream culvert extensions.

For stormwater culverts, the following construction methodology is anticipated:

- Work will be planned for periods of fine weather when there are no / low flows in the existing culverts, if pumping of water is required then the Project Ecologist will be engaged to ensure that appropriate fish passage controls are available.
- Construction of a compacted pipe bed for the extended culvert may be required depending on geotechnical conditions. Where this is required, an excavator will be used to undercut the seabed and then place clean gravel.
- Place the prefabricated culvert section with a crane or excavator in the compacted pipe bed; and
- Secure the culvert in place with rapid hardening cement at low tide.

For the intermittent and perennial stream culvert extensions, the following methodology is likely:



- If stream flow persists, a dam and divert methodology will be utilised for the period of construction. This may involve a temporary dam at the headwall of the culvert and a pump to convey water. The Project Ecologist will be engaged to ensure appropriate fish passage control measures are utilised.
- Construction of a compacted pipe bed for the extended culvert may be required depending on ground conditions. If required, an excavator will be used to undercut the seabed and place clean gravel.
- The prefabricated culvert will be placed with a crane or excavator.
- The culvert will be secured in place.

3.8 Shared pathway bridge

The construction of the shared path bridge will generally comprise of:

- Construction of a temporary access bridge across the railway line for access purposes and the mobilising of plant and equipment.
- Concrete piles will be installed via a boring or piling methodology. Groundwater displaced from pile construction will be captured.
- The temporary casings used to help install the concrete piles will then be removed by crane or vibro-hammer.
- Bridge piers will have formwork and reinforcing steel placed with a crane and then cast in-situ.
- The bridge deck will be reinforced and concreted in place, utilising standard construction techniques.

3.9 Finishing workings

The entire length of the shared path will be a finished surface laid on a standard metal basecourse. Where the shared path is located on existing land, preparatory works such as scraping topsoil and removing other existing material will be required. Where the shared path is to be located on new land supported by seawall, rock revetment and other coastal structures, a temporary surface will be laid to provide a path surface whilst settlement occurs. After that period, the final surfacing layer will be laid on these sections of the shared path.

Finishing works will include fencing, top soiling and landscape planting, furniture installation, lighting and signage as per permanent design. These works will be undertaken using conventional construction techniques. Finishing works will form the final construction element for most structures described below prior to disestablishment of the Pito-One and Ngā Ūranga Construction Yards.

The Northern / Pito-One Construction Yard Reinstatement Plan will outline the details of the finishing works in Honiana Te Puni Reserve including the relocation of the Tāwharau Pods.



4 Environmental Considerations

The Assessment of Environmental Effects (AEE)⁵, and the subsequent work completed by the Alliance (including the s127 consent application⁶), has provided information pertaining to the environmental and cultural values of the area; the values associated with the Project are summarised in Table 4.1. The Project is situated adjacent to the existing Hutt Valley Railway Line between Ngā Ūranga and Pito-One and includes works within Honiana Te Puni Reserve (at the northern) and the Ngā Ūranga Construction Yard (at the southern extent of the Project).

Table 4.1. Environmental values within the Project footprint


Value	Information
Kororā and oyster catchers	Avifauna habitat and species are present within the Project footprint including kororā (at-risk species) and variable oyster catchers. Procedures relating to the management of kororā and oyster catchers are contained within the EMP.
Terrestrial ecology	Within the Project, a total of 56 plant species have been identified comprising 35 exotic species and 21 native species. Procedures relating to terrestrial ecology are included in Section 5.3.9.2.
Lizards	The Project area provides potential habitat for northern grass skink and Raukawa gecko. Locations of potential lizard habitat as well as management procedures are described in the EMP.
High-value marine habitat	The marine habitat is dominated by rocky outcrops and large boulders. Macrofauna is abundant within the habitat and includes snails, urchins, pāua, cushion stars and seven-armed starfish. Habitat forming macroalgae forms a forest-like canopy in some areas, consisting of mostly <i>Carpophyllum spp.</i> , as well as pinnatifida, foliose red algae, <i>Ulva spp.</i> and coralline algae. At risk declining giant kelp is abundant within a narrow band close to the shore at the southern extent of the Project.
Streams and freshwater ecology	<p>A number of streams are located within the vicinity of the Project including the Gilbert Bush Stream, Waihinahina Stream, Korokoro Stream and three unnamed streams (Figure 4.1). The steep nature of the coastal escarpment and small catchment means that these stream systems do not have permanent flow and limited potential fish habitat.</p> 

Figure 4.1. Streams intersecting the Project area

⁵ Te Ara Tupua – Ngā Ūranga ki Pito-One Shared Path. Assessment of effects on the environment and accompanying technical reports and assessments. Prepared by Beca Limited. September 2020.

⁶ Te Ara Tupua – Ngā Ūranga ki Pito-One shared path: Applications to change consent conditions under Section 127 of the Resource Management Act. December 2021.

Value	Information
Culverts	There are 25 culverts that pass under SH2 between Ngā Ūranga and Pito-One. Of these, 21 provide stormwater conveyance, two are perennial streams and two are intermittent streams ⁷ .
Contaminated land	The following sites within the Project footprint have been identified as contaminated: <ul style="list-style-type: none"> ▪ Ngā Ūranga Construction Yard and surrounding area; and ▪ Honiana Te Puni Reserve More information regarding the contaminants of concern and management procedures are contained within the CLMP.
Sensitive receptors	Sensitive receptors are generally located more than 150 m from the Project footprint.
Aquifer	The Project is located within the Hutt Valley aquifer protection zone, as mapped in the Proposed Natural Resources Plan (PNRP).
Archaeology	There are no recorded archaeological or built heritage sites within the Project footprint. There are numerous archaeological sites within the wider Project area. For procedures relating to archaeology please refer to the Archaeological Management Plan and associated authority from Heritage New Zealand.
Cultural significance	<p>Te Whanganui-a-Tara has great cultural significance for iwi mana whenua. There are multiple sites of cultural significance within the Project area. The Project traverses an area which has strong associations with the Te Āti Awa people, particularly those who lived at Pito-One Pā and Te Tatau o te Pō Pā near the beach at Pito-One along with their kin at Ngā Ūranga Pā. Taranaki Whānui established kāinga and papakāinga around Te Whanganui-a-Tara (and other areas) which helped sustain the life of those residing in the area. The traditional kāinga, papakāinga, māra kai (gardens) mahinga kai (food gathering areas) and other sites of cultural significance have now been largely subsumed by urban development.</p> <p>Honiana Te Puni Reserve was vested in the Trustees of the PNBST by section 60 of the Port Nicholson Block (Taranaki Whānui ki te Upoko o te Ika) Claims Settlement Act 2009. The Reserve is designated as a Local Purpose Reserve under the Reserves Act 1977 and it is managed by HCC as the administering body. The significance of Honiana Te Puni Reserve for Te Āti Awa-Taranaki Whānui and the hapū of Ngāti Te Whiti and Ngāti Tawhirikura (associated with Pito-One Pā and Te Tatau o Te Pō Pā) is that the area was part of the whole environs of Pito-One Pā, with gardens and burial grounds in the locality. This area was likely significant as a local fishery for the Pā and Kāinga but deteriorated with the arrival of industries at Korokoro, which included the Pito-One Woollen Mills, the Pito-One Railway workshop and the Gear Meat Company.</p>

An environmental effects register is shown in Table 4.2. This includes potential adverse effects of the proposal on the values shown in Table 4.1 and methods to avoid, minimise and mitigate where appropriate.

⁷ Condition EM.4 identifies that the extension of the Gilbert Bush culvert, Waihinahina culvert and the streams at chainage 1790 and 2339 shall be designed and installed in accordance with the Fish Passage Guidelines (April 2018).





Table 4.2. Environmental effects register

Adverse Effect	Cause	Avoidance and/or minimisation	Potential mitigation	Proposed inspections, monitoring and reporting	Contingency
Disturbance of kororā	<ul style="list-style-type: none"> Construction activities 	<ul style="list-style-type: none"> Pre-construction survey to confirm location of kororā. Adhere to measures in the EMP. Establishment of exclusion zone. Using techniques and equipment that minimises noise and vibration. 	<ul style="list-style-type: none"> Relocation of penguins in accordance with any relevant permits, the EMP and monitoring their welfare. Predator control. 	<ul style="list-style-type: none"> Noise monitoring. Weekly inspections and reporting by Project Ecologists. Reporting any penguins encountered or re-located. 	<ul style="list-style-type: none"> Change construction method or mitigation.
Disturbance of shoreline foragers (including variable oyster catchers)	<ul style="list-style-type: none"> Construction activities 	<ul style="list-style-type: none"> Pre work inspections. Setback distance from breeding nests with either eggs or chicks. No works within 20 m of active nest. Using techniques that minimise noise and vibration. 	<ul style="list-style-type: none"> Predator control and dog control 	<ul style="list-style-type: none"> Weekly inspections and reporting by Project Ecologist 	<ul style="list-style-type: none"> Change construction method or mitigation
Disturbance of marine habitat or species	<ul style="list-style-type: none"> Construction activities beyond construction zone 	<ul style="list-style-type: none"> Delineation of construction prior to works commencing. Minimising the area required for construction. Undertaking ecological inspections prior to works 	<ul style="list-style-type: none"> Relocation of marine flora and fauna from areas of disturbance by a suitably qualified person. 	<ul style="list-style-type: none"> Relocation supervised by Project Ecologist. Reporting any damage. Weekly inspections and reporting by Project Ecologists 	
Disturbance of lizard habitat	<ul style="list-style-type: none"> Construction activities 	<ul style="list-style-type: none"> Pre-works survey to avoid lizard areas and undertake any relocations Adhere to EMP 	<ul style="list-style-type: none"> Adhere to measures in the EMP 	<ul style="list-style-type: none"> Relocations as required. Reporting in accordance with wildlife permit. Weekly inspections by Project Ecologists. 	
Noise impacts on wildlife and residents	<ul style="list-style-type: none"> Construction activities 	<ul style="list-style-type: none"> Ensuring equipment in good conditioning. Complying with noise standards. 	<ul style="list-style-type: none"> Noise suppression Noise barriers 	<ul style="list-style-type: none"> Baseline and regular noise monitoring. CNVMP requirements Daily inspection by Zone Manager and reporting. Weekly inspection by PEP-C Manager or Environmental Advisor 	<ul style="list-style-type: none"> Change construction method





Adverse Effect	Cause	Avoidance and/or minimisation	Potential mitigation	Proposed inspections, monitoring and reporting	Contingency
Vibration impacts on wildlife and residents	<ul style="list-style-type: none"> Construction activities 	<ul style="list-style-type: none"> Equipment selection. 		<ul style="list-style-type: none"> Baseline and regular noise monitoring. CNVMP requirements Daily inspection by Zone Manager and reporting. Weekly inspection by PEP Manager or Environmental Advisor 	<ul style="list-style-type: none"> Change construction method
Nuisance discharges to air impacting on residents and users	<ul style="list-style-type: none"> Dust or exhaust discharges 	<ul style="list-style-type: none"> Equipment maintained in good condition. 	<ul style="list-style-type: none"> Damping fill materials in extreme circumstances Adhering to the CAQMP 	<ul style="list-style-type: none"> Daily inspections by Zone Manager Weekly Inspection by PEP Manager or Environmental Advisor 	<ul style="list-style-type: none"> Delay placement of fill until climatic conditions suitable
Sediment discharge impacting on marine environment	<ul style="list-style-type: none"> Excavation of material for seawall footing. Placement of backfill. 	<ul style="list-style-type: none"> As far as practical undertaking excavation in the dry or contained areas. Prompt removal of excavated material. Prompt stabilisation of fill material. Install ESCs 	<ul style="list-style-type: none"> Treatment of water to remove sediment. Cut and cover Keep areas open to minimum 	<ul style="list-style-type: none"> Daily inspections by Zone Manager Weekly Inspection by PEP Manager or Environmental Advisor 	
Hazardous materials discharged to marine and beach environment	<ul style="list-style-type: none"> Spills Incorrect storage 	<ul style="list-style-type: none"> Correct storage of hazardous material including no storage below highwater. No refuelling below high water 	<ul style="list-style-type: none"> Correct storage and controls in place for hazardous substances 	<ul style="list-style-type: none"> Daily inspections by Zone Manager Weekly Inspection by PEP Manager or Environmental Advisor 	<ul style="list-style-type: none"> Clean up procedures.
Loss of native vegetation	<ul style="list-style-type: none"> Removal of vegetation and construction activities 	<ul style="list-style-type: none"> Protection of plants by creating exclusion area. 	<ul style="list-style-type: none"> Translocation of native vegetation to a suitable location by a suitably qualified expert 	<ul style="list-style-type: none"> Monitoring success of relocation Reporting of species re-located and new locations 	<ul style="list-style-type: none"> Planting new seedlings from acceptable genetic source.
Death of fish	<ul style="list-style-type: none"> Not providing fish passage 	<ul style="list-style-type: none"> Ensuring fish passage is provided during and following works 	<ul style="list-style-type: none"> Capture and release of fish with appropriate permits 	<ul style="list-style-type: none"> Reporting any fish captured and released Inspections by Project Ecologists 	
Damage or destroyed artefact	<ul style="list-style-type: none"> Not adhering to accidental discovery protocol 	<ul style="list-style-type: none"> Ensuring staff are aware of accidental discovery protocol and procedures to follow Consulting with an archaeologist. 	<ul style="list-style-type: none"> Notifying HNZPT and Mana Whenua if required. 	<ul style="list-style-type: none"> Reporting any archaeology discoveries to appropriate authorities 	





Adverse Effect	Cause	Avoidance and/or minimisation	Potential mitigation	Proposed inspections, monitoring and reporting	Contingency
Encountering contaminated land	<ul style="list-style-type: none"> Accidental discovery or encountered during works 	<ul style="list-style-type: none"> Adhere to the protocols in the CLMP 	<ul style="list-style-type: none"> Adhere to the CLMP 	<ul style="list-style-type: none"> Daily inspections by Zone Manager Weekly Inspection by PEP Manager or Environmental Advisor 	<ul style="list-style-type: none"> Site remediation
Penetration of the aquifer	<ul style="list-style-type: none"> Construction works at a depth affecting the aquifer 	<ul style="list-style-type: none"> Avoid works at a depth where aquifer could be encountered 			<ul style="list-style-type: none"> Adhere to contingency procedures in CEMP
Traffic	<ul style="list-style-type: none"> Construction works and increased traffic volumes 	<ul style="list-style-type: none"> Adhere to protocols in CTMP 	<ul style="list-style-type: none"> Adhere to protocols in CTMP 	<ul style="list-style-type: none"> Adhere to the CTMP 	
Impact on cultural values	<ul style="list-style-type: none"> Removal of vegetation Discharge of contaminants to the CMA Mishandling cultural artefact 	<ul style="list-style-type: none"> Adhere to the protocols in the CEMP and Archaeological Management Plan 	<ul style="list-style-type: none"> Adhere to the protocols in the CEMP and Archaeology Management Plan 	<ul style="list-style-type: none"> Daily inspections by Zone Manager Weekly Inspection by PEP Manager or Environmental Advisor 	



5 Implementation and Operation

This section identifies a series of procedures that may be used to assist in avoiding, minimising or mitigating adverse environmental effects during construction works of the Project. The procedures cover:

- Pre-start procedures.
- Site establishment.
- Construction works – general procedures.
- Completion works - site reinstatement and rehabilitation.

5.1 Pre-start procedures

5.1.1 Notifications

5.1.1.1 Councils

Notification of commencing works will be provided to the Manager, GWRC, WCC and HCC at least 20 working days prior to the start of construction. The Council Monitoring Officers will be contacted as well as the general Council email addresses:

- Notifications@gw.govt.nz;
- Resourceconsents@huttcity.govt.nz; and
- rcmonitoring@wcc.govt.nz.

5.1.1.2 Stakeholders

Businesses and residents will be informed prior to the commencement works in accordance with the CSMP prepared by the Alliance.

5.1.1.3 Network Utility Operators

Network Utility Operators will be informed of potentially disruptive works at least one week prior to the commencement of works depending on the level of impact. This will include discussion around ensuring access to assets can be provided for maintenance and operation purposes if required and the process for network utility operators to follow if they need access during works. This also includes ensuring the Alliance is aware of any specific procedures that need to be adhered to.

5.1.1.4 Mana Whenua

At least twenty working days prior to the commencement of construction, the MWSG will be informed of the intended start date of constructions and given an overview of the upcoming activities. To allow Mana Whenua to assume their kaitiaki responsibilities the MWSG and Kai Ruruku will be invited to:

- Participate in the pre-construction site meeting.
- Participate in the Project induction.
- Attend toolbox meetings.
- Participate in the relocation of rocks and plants outside of the construction work areas.
- Supervise vegetation removal and excavations.

5.1.1.5 Harbour Master

The Wellington Harbour Master will be notified in writing at least 20 working days prior to the commencement of works in the CMA shall be notified in writing of:

- Details of any construction activities expected to occur below Mean High Water Springs (MHWS) that do not involve construction from land;
- Details of any activities involving offshore construction and disturbance of harbour signs and structures; and



- The proposed date of start of construction in the CMA.

5.1.2 Pre-construction site meeting

A pre-construction site meeting shall be arranged with the following parties at least 20 working days prior to the start of the construction:

- Waka Kotahi;
- The Councils' monitoring teams;
- The Alliance;
- KiwiRail; and
- MWSG and the Kai Ruruku.

The purpose of the meeting is to share information in respect of the works, methods, erosion and sediment controls, management plan requirements and compliance with the conditions of the resource consent. The meeting will also discuss the construction methodology.

5.1.3 Services

During the detailed design of the Project, a detailed services assessment has been completed. The has included:

- Checking the public data bases of service providers.
- Undertaking a service assessment on site using non-invasive survey techniques such as GPR certification.
- Undertaking a service assessment on site using invasive survey techniques such as hydrovacuuming.

Servicing locating will also be undertaken prior to the commencement of Construction Works within proximity of an asset. Asset owners will be alerted prior to works commencing to ensure that the Alliance are aware of any specific procedures that must be adhered to (this may include vibration limits). All construction works will be undertaken in accordance with the Network Utility Management Plan prepared by the Alliance.

The Alliance's Health and Safety Procedures requires that the relevant permits are obtained before any construction works can commence. The permit application documents the assessment process.

If a conflict between the proposed works and a service is identified, then the service provider is contacted, and a plan will be agreed upon between the parties. All appropriate approvals will be sought from the service provider prior to any works within proximity to the services or works to relocate or alter any services.

5.1.4 Ecology and Environmental Management permissions

5.1.4.1 Pre-construction survey of rocky infauna

A pre-construction survey of rocky infauna⁸ was undertaken on 14 July 2021. The survey included a field survey / search of the six gravel beaches along the Project alignment for suitable *Smeagol* habitat. The search started at approximately 1 m below the MWHS line and continued up to the storm ridge. When potentially suitable habitat with clean gravel on the surface was identified, 0.5 m diameter holes were excavated to assess the habitat quality below the surface and search for *Smeagol climoi*. The search was also extended down to the low tide line, but no excavation was required at this point as clean gravel (suitable habitat) was not present below MHWS.

All beaches had areas of clean gravel in the high intertidal zone that were inspected by excavating replicate holes. A variable number of holes was excavated at each beach depending on the availability of potentially suitable habitat. Holes were evenly spread across the suitable gravel habitat at each beach. Excavations were carried out to the depth of 30 cm if clean gravel extended to that depth. If clean gravel was replaced by coarse

⁸ In accordance with Condition EM.23



sand before reaching the 30 cm depth, the excavation was interrupted. The excavated gravel was spread onto sorting trays and visually inspected to verify the presence of *Smeagol climoi*.

No *Smeagol climoi* were found during the pre-construction survey of rocky infauna.

5.1.5 Pre-works Permissions

Prior to works commencing, the Project Ecologist and Environmental Advisor will confirm all pre-construction requirements have been satisfied. As part of this process, an underwater camera and/or divers will be utilised to confirm the suitability of a location for locating spuds, placing material or other similar activities on the seabed or foreshore.

5.2 Site Establishment

5.2.1 Signage, Fencing and Public Access

Site establishment of the Ngā Ūranga and Pito-One Construction Yards has been undertaken in accordance with the Enabling Works CEMP (V3 and V4). This included earthworks, construction of fencing, erecting signs / Project boards and establishing storage / stockpile areas.

Traffic management controls and means to restrict public access will be erected prior to construction starting. There is no public access at the Ngā Ūranga Construction Yard. The public will be restricted from the Tāwharau Pod, Integrated Clubs Building and the Construction Yard areas within Honiana Te Puni Reserve as shown on Figure 5.1. Once the Tāwharau Pods and Integrated Clubs Building are completed, the public will be able to access these facilities Figure 5.1 shows the routes that will be provided to active users during works.



Figure 5.1. Areas of public access restrictions



5.2.2 Construction Yards

The Ngā Ūranga and Pito-One construction yards will provide bulk storage for construction materials and site office facilities. The general layout of the yards is shown on Figure 5.2 and Figure 5.3 respectively.



Figure 5.2. Site layout of the Ngā Ūranga Construction Yard



Figure 5.3. Site layout of the Pito-One Construction Yard (western side of Honiana Te Puni Reserve)



5.2.3 Site Access

Site access will be provided through the Ngā Ūranga and Pito-One Construction Yards. All access / haul roads will be maintained, as far as practical, as clean and suitable site access points will be constructed and maintained throughout the Project.

Access to the site will also be possible via the CMA and along the foreshore. This will generally be via:

- The two Barge Landings (Piki Wahine and Karanga) as shown on Figure 5.4 and Figure 5.5.
- An access point to the CMA will be through Honiana Te Puni Reserve.

Once new areas of revetment are constructed, they will also be used as landing areas during construction (access via barge).



Figure 5.4. Piki Wahine Barge Landing (chainage 975)

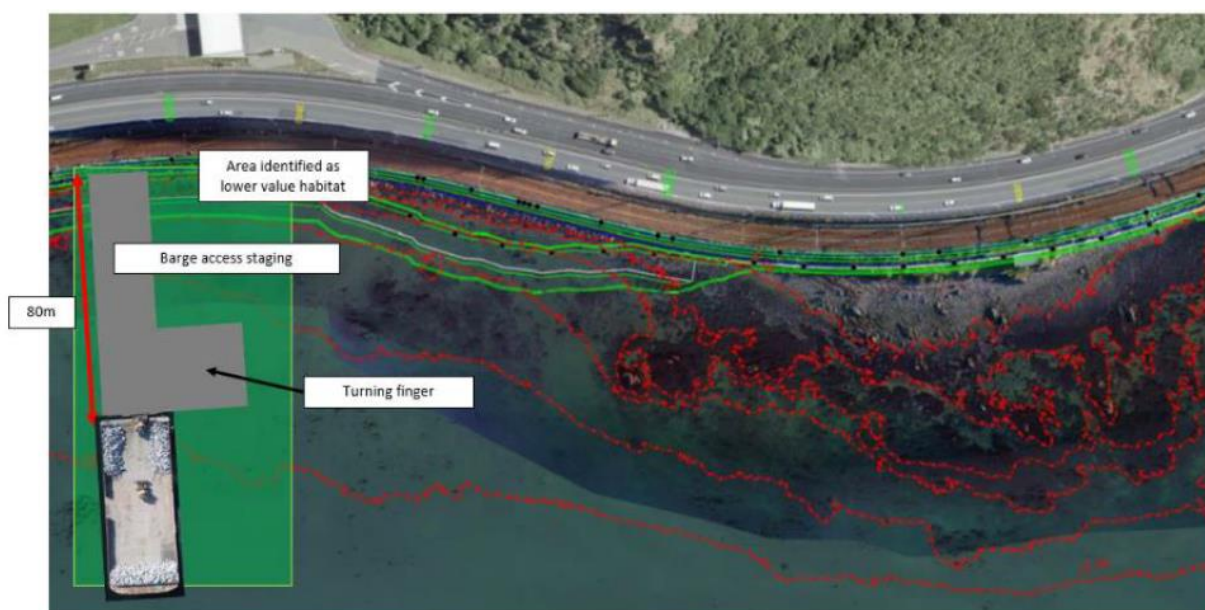


Figure 5.5. Karanga Barge Landing (chainage 2600)

5.2.4 Delineation of Works Areas

Prior to works commencing, the boundaries of the construction work area and different structures will be defined and set out by the Project Surveyor. This may include the establishment of survey points along the existing structures to act as a georeferencing tool. Site set out may also include painted lines or waratahs and string.

Construction works in a specific location will not commence until the Area Manager is satisfied that the edge of the construction works area is correctly delineated. This approval will be recorded in the daily site report.

5.3 Construction Works – General Procedures

5.3.1 Hours of Work

Normal hours of work during construction will generally be between 7:00am to 6:30pm during daylight savings and 7:00am to 5:30pm at all other times.

Construction works will also occur outside of the normal hours noted above due to the tidal cycles and KiwiRail's operational and safety requirements. Night works may be required or works over 24 hours per day. Works outside of the normal working hours may include:

- Construction of the Shared Path Bridge.
- Any construction works within the accepted safety setback of the Hutt Valley Railway Line that will require a Block of Line as agreed with KiwiRail.
- Delivery and placement of rock.
- Offloading and stockpiling of rock and general fill along the shared path.
- Construction of the seawalls using a crane where the toe of the seawall is at or below MHWS.

All works will be subject to compliance with the applicable noise and vibration limits and other applicable conditions.

5.3.2 Waste Management

Any temporary construction materials and debris will be removed from the CMA at the end of each day.

Prior to the commencement of works for the day and at the completion of works for the day, the site will be inspected to confirm there is no litter lying around the site. The dropping of litter on site or in the CMA will not be permitted.

Waste facilities will be available on site for the duration of construction to ensure that waste materials are stored and disposed of appropriately. Any rubbish and debris from the construction activities will be placed directly into containers on site, utes or trailers and any rubbish from the construction activities will be removed from site on a daily basis to the Project Yard.

5.3.3 Refuelling, maintenance of equipment and hazardous substance storage

The storage of hazardous substances including fuel and maintenance of machinery and equipment will generally be undertaken within the Ngā Ūranga and Pito-One Construction Yards.



5.3.3.1 Hazardous substance storage

The Project will involve the use of a variety of construction related plant and machinery with most of this requiring a regular supply of fuels and oils. Other materials that may be used throughout the project construction may include concrete, bonding agents, sealants, flocculants, degreasers and paints. These substances can result in environmental harm if they are not managed carefully.

Industry best practice will be used for the storage, handling, transport and disposal of hazardous substances during construction as required under the guidelines specified in the Hazardous Substances and New Organisms Act (HSNO) 1996.

Hazardous substances will be stored in hazardous goods storage containers, which ensure sufficient bunded capacity. No bulk storage of fuel will occur on site. Hydraulic oils, greases and other construction materials including small quantities of fuel required for hand tools and pumps may be stored in the construction yards in a secure, covered and bunded area, away from watercourses and the CMA.

A copy of all relevant Safety Data Sheets will be kept on site, including at specific storage locations.

5.3.3.2 Refuelling

When practicable, refuelling or maintenance of equipment will be undertaken at least 5 m:

- From the MHWS line; and
- An open watercourse.

All refuelling will occur within a contained area to ensure that if there is a spill, this can be contained. Where practicable, the use of biodegradable hydraulic fluids will be used in machinery working within the foreshore and CMA will be investigated

In all situations, an appropriate spill kit and boom will available should a spill occur. The procedure in Section 8.3 of this report will be followed in the event of any spill. All staff involved in refuelling will be appropriately trained in practices such as never leaving refuelling unattended. Specific requirements for refuelling will be identified in the relevant SSESCP.

5.3.4 Fill Material

A range of fill material and rock material will be used for the Project. Fill material used on site may include:

- Shingle material removed from the works area and re-used for the purpose of beach nourishment.
- Material excavated from the site footprint, provided it is suitable. If material is re-used from the site, it will comply with the requirements of the CLMP and the guidance set out in Section 2.2 of the Ministry for the Environment's guide 'A Guide to the Management of Cleanfills (2002)'.
- Clean aggregate and rocks from quarries.

The amount of fill required is approximately 100,000 tonnes. This will be a greywacke product sourced from local quarries. The types of fill required is set out in Table 5.1 The amount of rock required is approximately 150,000 tonnes. The type of rock to be used will be Dolomite from Golden Bay or Andesite from South Taranaki or the Central North Island. Primary and Secondary Rock – (Grades 1 to 4) shall be angular, quarried rock and shall conform to the requirements of this specification. Generally good quality dolomite, andesite or greywacke will be acceptable. Sedimentary rock such as shales, mudstones, claystone's, bedded sandstones or slates are not suitable. All material is required to comply with the applicable tests including relating to weathering, crushing strength, drop testing and sizing.

Table 5.1 Types of material.

Material	Spec*	Use	Comment
Type A fill	AP 65	Fill above base coarse	
Type B fill	AP 150	Base course fill above high water	



Type C fill	Bulk fill	For creation of Ūranga areas and other smaller areas outside of the zones supporting pavement surfaces and structures.	This may include material recovered from site.
Type D fill	AP 300	Below High Water	This fill has the fines removed to minimise potential for sediment discharge
Rock grade 1	1200 kg – 5500 kg	Primary armour	
Rock grade 2	700 kg – 3100 kg	Primary armour	
Rock grade 3	60 kg – 500 kg	Secondary armour	
Rock grade 4	30 kg – 300 kg	Secondary armour	

*AP refers to the maximum particle size of fill material.

The characteristics of different materials is shown in Table 5.2.

Table 5.2. Chemical characteristics of different materials

Material	Chemical Characteristics	Comment
Dolomite	<p>Primary grain components:</p> <ul style="list-style-type: none"> Calcium magnesium carbonate ($\text{CaMg}(\text{CO}_3)_2$) <p>Stability:</p> <ul style="list-style-type: none"> Passes project specification chemical weathering test criteria The clean quarried rock contains no grains that may undergo rapid chemical reactivity with seawater or local natural soils (silts, sands and gravel combinations), i.e. no rapid breakdown, dissolving, leaching or reaction. Will be subject to long term weathering changes typical of other materials commonly used as armouring and fills around the Wellington region. <p>Leachability:</p> <ul style="list-style-type: none"> This is a quarry sourced product with no potential for contaminants to be leached. 	<p>Use around Wellington Region</p> <p>Used on Transmission Gully and at Seaview Marina and Evans Bay breakwater.</p>
Andesite	<p>Primary crystal components:</p> <ul style="list-style-type: none"> Silica (SiO_2), pyroxene, and feldspar ($\text{NaAlSi}_3\text{O}_8$ or $\text{CaAl}_2\text{Si}_2\text{O}_8$) <p>Stability:</p> <ul style="list-style-type: none"> Passed project specification chemical weathering test criteria The clean quarried rock contains no crystals that may undergo rapid chemical reactivity with seawater or local natural soils (silts, sands and gravel combinations), i.e. no rapid breakdown, dissolving, leaching or reaction. Will be subject to long term weathering changes typical of other materials commonly 	<p>Use around Wellington Region</p> <p>Commonly used around Wellington region (Wellington, Lower Hutt and Kapiti) as a rock revetment / coastal armouring.</p>

	<p>used as armouring and fills around the Wellington region.</p> <p>Leachability:</p> <ul style="list-style-type: none"> This is a quarry sourced product with no potential for contaminants to be leached. 	
Greywacke	<p>Primary grain components:</p> <ul style="list-style-type: none"> Quartz (SiO₂), feldspar (NaAlSi₃O₈ or CaAl₂Si₂O₈), and calcite (CaCO₃). <p>Stability:</p> <ul style="list-style-type: none"> Passed project specification chemical weathering test criteria The clean quarried rock contains no grains that may undergo rapid chemical reactivity with seawater or local natural soils (silts, sands and gravel combinations), i.e. no rapid breakdown, dissolving, leaching or reaction. Will be subject to long term weathering changes typical of other materials commonly used as armouring and fills around the Wellington region. <p>Leachability:</p> <ul style="list-style-type: none"> Only quarried sourced fill is to be used. No potential for leachate of contaminants. 	<p>Used around Wellington Region</p> <p>Most commonly used material around the Wellington region as a rock fill, hardfill, rock revetment / coastal armouring.</p>

Details on specific fill materials for different areas, especially those used in the CMA and the methods in which the materials will be deposited will be included in the relevant SSESCP. All fill material re-used on site will meet the relevant criteria specified in the CLMP. This includes:

- Where no soil contamination or contamination risk has been identified in the preliminary site investigations or soil quality assessment, soil may be re-used onsite provided it is visually inspected by the suitably qualified and experienced practitioner.
- Any soil proposed to be re-used from the Ngā Ūranga Construction Yard or Honiana Te Puni reserve is required to comply with the criteria in Table 5.3.

Table 5.3. Soil Reuse Acceptance Criteria.

Contaminant of concern	Acceptance criteria for reuse onsite	
	Maximum soil concentration (mg/kg)	Maximum SPLP leachate concentration (mg/L)
Arsenic	70	0.26*
Cadmium	400	0.11
Chromium	2,700	0.088
Copper	NL	0.026
Lead	880	0.088
Nickel	NL	1.4
Zinc	NL	0.16

NL = No Limit, acceptance is based on leachability criteria only.
* Freshwater DGV adopted as no ANZG marine guideline exists.



A record of the fill material used on site will be maintained by the Alliance and available to the Manager on request.

5.3.5 Construction Lighting

During works, there will be lighting on the plant and equipment. Additional task lighting will be set up as required including for night works. The lighting will be placed to service the task and may be trailer mounted.

Efforts will be made to ensure lighting is directed downward and away from neighbouring properties, especially if this lighting is to be in place long term such as yard / security lighting.

5.3.6 Noise and Vibration

Noise and vibration generated during construction works can be disruptive to not only neighbouring residential, commercial / industrial properties and recreational users but also the terrestrial and marine ecology. Schedules will be developed for specific activities and/or locations of work. The information contained in the Schedules will be utilised in the SSESCP as required.

To minimise the potential noise and vibration impact caused by Project works the following general mitigation measures, in addition to measures identified in the CNVMP, will be implemented.

- Stakeholder consultation, especially when certain work activities are expected to generate high noise / vibration.
- Controlling timing of high noise / vibration level works to minimise disruption.
- Good practices when operating machinery to avoid unnecessary noise / vibration such as not slamming tail gates and lowering drop heights when loading and unloading materials.
- Good maintenance of plant and machinery- simple maintenance can reduce noise levels by as much as 50%.
- Following procedures identified in the Project EMP to ensure key habitats are avoided.
- Use of appropriate controls such as noise barriers.

5.3.7 Air Quality

The measures for management of air quality for the Project are set out in the CAQMP, attached in Appendix C: Construction Air Quality Management Plan

5.3.8 Consultation Requirements During Works

5.3.8.1 Network Utilities

The Alliance will obtain all necessary permits and meet the specific network utility operator requirements before any works are undertaken adjacent to or within proximity to a network utility.

During works, if a network utility operator needs to access an asset during construction of the Project, the network utility operator can contact the Alliance via the 0800 number or the Project Liaison Person. Following this, the enquiry will be passed on to the appropriate person so that the network utility operator can liaise with the Alliance to obtain access to the asset.

Any access to assets during construction will require the network utility operator to be accompanied by appropriate personnel as well as ensuring the operator is aware of all health and safety requirements of the Alliance.

If there is the accidental discovery of an asset during works, the Alliance will contact the network utility operator as soon as practicable around the discovery and an appropriate plan will be devised.

Further, site specific methods to address the safety, integrity and protection of network utilities will be covered under the relevant SSESCPs.

5.3.8.2 Harbour Master



During works, the Harbour Master will be consulted with in regard to any lighting, mile markers or navigational aids required for the temporary or permanent structures in the CMA or the removal of existing navigational infrastructure.

It is unlikely that the Project will result in or require the removal of any existing navigational structures.

5.3.8.3 Mana Whenua

During works, Mana Whenua will be notified of any incidents that may impact on the taiao and will be notified of any accidental discoveries.

5.3.9 Ecology Procedures

5.3.9.1 Fish Passage

The extension of four culverts (Gilberd Bush, Waihinahina, and Unnamed culverts 1 & 2) will be installed in accordance with the New Zealand Fish Passage Guidelines (April 2018) (Condition EM.4). Following Completion of Construction fish passage in the above four culvert extensions shall be provided for and maintained. Where possible construction of the above four culvert extensions will be undertaken in a way to ensure fish passage is not prohibited.

- If possible, the upstream and downstream fish migration timings will be avoided.
- If avoidance is not practicable, the length of time that the construction works encroach on the migration period will be minimised.

5.3.9.2 Vegetation Clearance

The Project Ecologist must be consulted prior to any planned vegetation clearance, pruning and trimming on site. No vegetation clearance, pruning and trimming can occur without approval from the Project Ecologist. In addition, the relevant procedures from the EMP will be adhered to (notably in the Lizard Management Plan).

5.4 Completion of Works

5.4.1 Seafloor and Seabed

Any material placed on or within the seabed or foreshore, such as the Barge Landings, or other items will be removed from the CMA. Where required, a diver or underwater camera will be utilised to ensure that the site has been adequately remediated. All material will be removed within 40 days following the Completion of Construction.

5.4.2 Site Reinstatement and Rehabilitation

The site will generally be reinstated and rehabilitated in accordance with the approved SSESCP as follows:

- Bare earth will be permanently stabilised against erosion in accordance with the information in Section 6 of this report.
- Within 40 working days any erosion and sediment controls will be appropriately decommissioned, disestablished, and removed as per the process identified in Section 6
- All plant, temporary facilities, debris, surplus and foreign materials will be removed from the site as practicable.
- Temporary stockpiles will be removed from site.
- Litter will be removed for the site and disposed of appropriately.
- Barriers and signage will be removed, and public access will be reinstated.

5.4.3 Pito-One Construction Yard

The rehabilitation and reinstatement of the Pito-One Construction Yard (within Honiana Te Puni Reserve) will occur in accordance with the Pito-One / Northern Construction Yard Reinstatement Plan. This will be provided



to HCC at least 20 working days prior to the start of rehabilitation works within this area and will include information on:

- Relocation of the Tāwharau Pods to the western side of the Reserve;
- Construction and/or relocation of the Sculptures (if constructed);
- Construction of the Whare (if constructed);
- Formation of the reinforced grass access to the waka landing;
- Decommissioning of the Project construction yard; and
- Development and upgrade of a number of paths within the Reserve.

5.4.4 Notification to Councils

GWRC, HCC and WCC will be notified within five working days that the works have been completed⁹.

5.4.5 Structures

Within three months following the Completion of Construction, a complete set of As-Builts will be provided to the Manager. The plans will include a location plan, a plan which shows the area of coastal occupation, structure dimensions and cross-sections including the replenished beaches.

A survey plan will also be prepared showing the areas of land that have been reclaimed, including the location and position of replenished beaches above MHWS and all boundaries in accordance with the requirements of section 245 of the RMA.

⁹ Completion of construction is defined as when construction of the Project is complete and it is available for use



6 Erosion and Sediment Controls

This section is intended to act as the overarching ESCP for the Project as required under consent condition EW.3. This section will inform the development of the SSESCPs that are created for the Project in accordance with conditions EW.1 to EW.6.

The requirements of ESCP are as follows:

- Details of erosion and sediment controls (this section).
- Measures to minimise the resuspension of potentially contaminated material.
- Links to contaminated land measures set out in CLMP.
- Roles and responsibilities (Section 2.2).
- Monitoring and maintenance see sections (Section 7.1 and 6.4 respectively).
- Identification of areas to be covered by SSESCPs (Section 2.1.4).
- Procedure for when it is not considered a SSESCP is not required (Section 6.7).

Section 2.1.4 outlines what will be included in SSESCPs created for different activities and locations during the construction of the Project.

6.1 Project Setting

The Project setting is not that of a typical earthworks project as the scale of 'earthworks' is minor. In general, the majority of the works will be occurring within a dynamic marine environment. Within this environment, there is regular re-mobilisation of sediment in response to climatic and marine conditions. The two main sources of potential sediment generation during works are:

- Disturbance of material in the marine environment; and
- Sediment from land-based activities.

The management of each source differs, in general:

- For activities in the marine environment, the objective is to minimise the generation of sediment by staging works and prompt completion of works;
- For activities above MHWS, the primary objective is to avoid sediment discharges, where there is not possible, all practicable steps will be taken by the Alliance during construction to reduce to the smallest amount practicable erosion and the discharge of sediment beyond the footprint of the Project.

The construction of the seawalls and revetments requires the removal of sediment to either build a foundation or allow for the embedment of the structure below the seafloor. The nature and thickness of sediment varies across the Project site. In general, the depth of sediment increases from the north to the south, whilst the particle sizes increase as you move north to south.

Erosion and sediment control measures will be implemented throughout Construction Works. They will be constructed and maintained to operate and perform in accordance with Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Wellington Region (2021) and any amendments to these guidelines, except where a higher standard is detailed in the conditions in which case the higher standard shall apply. In addition, the relevant controls in the CLMP will be adhered to at all times when dealing with contaminated or potentially contaminated material.

The construction site shall be maintained, as far as practical, as a clean site, with clean metals and rock used whenever possible to minimise the amount of ground exposed during works. Any unnecessary stockpiled materials and / or waste on site will be removed or relocated to one of the construction yards with appropriate ESCs as soon as practicable.



6.2 Erosion and Sediment Control Options

To assist in identifying appropriate erosion and sediment control options is useful to identify the potential sediment sources. **Error! Reference source not found.** also provides a high-level overview of potential erosion and sediment controls that are likely to be suitable based on the information in Section 6.3.3.

Table 6.1. Construction activities and potential erosion and sediment controls

Activity	Source	Treatment / Mitigation
<i>Marine activities (below MHWS)</i>		
Excavation of foundations for seawalls	Disturbance of sediment on the seabed floor. The total volume disturbed from this activity is approximately 3,200m ³ .	<ul style="list-style-type: none"> ▪ Minimise length of excavations ▪ Wave barrier where practical ▪ Silt curtain where practical
Wave action on disturbed areas awaiting placement of seawall foundation	Fine material that is easily re-mobilised	<ul style="list-style-type: none"> ▪ Temporary cover with coarse aggregate ▪ Prompt placement of seawall foundation.
Placement of concrete to form seawall foundation	Poorly placed concrete which results in disaggregation of concrete.	<ul style="list-style-type: none"> ▪ Strict adherence to best procedures for tremie placement of concrete ▪ Protection of concrete to reduce wash and wave effects
Excavation of revetment / embankment foundation for revetments	Disturbance of sediment on the seabed floor. The total volume disturbed from this activity is approximately 15,200m ³ .	<ul style="list-style-type: none"> ▪ Minimise length of excavations ▪ Wave barrier where practical ▪ Silt curtain where practical
Wave action on revetment / embankment foundation or fill placed as basis of structure prior to placement of primary armour material	Channel lengths for revetments and embankment foundations are between 30 and 50m in length.	<ul style="list-style-type: none"> ▪ Prompt placement of secondary and primary armour. ▪ Temporary cover of revetment embankment and fill
<i>Land based activities (above MHWS)</i>		
Placement of fill material for revetments below MHWS	Fill material placed so placement of secondary armour can take place	<ul style="list-style-type: none"> ▪ Use fill material that doesn't easily produce sediment. ▪ Prompt placement of secondary and geotextile, then ▪ Prompt construction of revetment ▪ Wave barrier where practical ▪ Silt curtain where practical
Wave action on fill material behind seawall	Waves overtopping partially constructed revetment	<ul style="list-style-type: none"> ▪ Temporary use cover material such coconut or coir matting.
Wave action on interface between completed areas and those under construction	Fill material behind completed sections	<ul style="list-style-type: none"> ▪ Use of rock socks to protect exposed surface or to weigh down cover sheets.
Run off from fill behind seawalls or revetments	The land formed behind the seawall and revetment is shaped so runoff is towards the sea.	<ul style="list-style-type: none"> ▪ Silt fences and socks,
Runoff from railway lines	Runoff from the seaward side of the rail corridor drains to the sea either directly or via drains.	<ul style="list-style-type: none"> ▪ Temporary diversion drains to direct water away from fill areas ▪ Prompt installation of Kiwi Rail drainage system on a progressive basis
Run-off from construction yards	Run-off from the storage of materials containing fines	<ul style="list-style-type: none"> ▪ Bunds around stockpiles with potential to discharge sediment ▪ Silt fences and filter sock ▪ Stabilised entrances



6.3 Design Philosophy

The following statements have been established to assist with understanding the philosophy that the Alliance have applied to the Project's ESCP:

- Erosion control will be considered as much as sediment control in the design of treatment options with an overall goal of high-quality discharges of treated water.
- A “treatment train” approach shall be adopted.
- As a priority clean water will be isolated from dirty water.
- Perimeter controls will be employed at a minimum height of 0.55m.
- Disturbance of material in or adjacent to the CMA will be staged and limited wherever possible to reduce the risk of sediment generation through erosion.
- Areas of disturbed material will be stabilised either temporarily or permanently as soon as practicable to limit sediment generation through erosion.
- Chemical treatment will be used if using sediment tanks/lamella clarifiers where required.
- 24 hour, 7 days a week, 365 days a year maintenance access to all devices will be a priority.

6.3.1 Treatment Train Approach

A “treatment train” comprises a series of best management practices and/or natural features, each planned to treat a different aspect of pollution prevention, or in this instance sediment prevention, that are implemented in a linear fashion to maximise the sediment removal. Erosion and sediment controls will be linked together each performing a specific role in terms of either surface water management, soil protection and stabilisation, and sediment capture. This approach will see a combination of structural and non-structural practices.

6.3.2 Management & Design Objectives

The management and design objectives of the ESCP are to:

- To operate in full compliance with the regulatory approval requirements and demonstrate this through reporting procedures and third-party compliance monitoring.
- To comply with the RMA and relevant approvals.
- To liaise closely with GWRC during construction over matters of erosion and sediment control.
- To provide the methods that will be employed to avoid, remedy, or mitigate adverse effects of sediment on the environment due to construction activities.
- To provide a safe and healthy working environment for all staff on or near the site.
- To facilitate the very best environmental outcome through innovative, practical, and pragmatic means.

6.3.3 Control Types

The GWRC Guidelines identify a large number of sediment treatment devices/techniques available to be used as part of erosion and sediment control. For the Project a reduced number of controls will be used. These may include:

- Silt and filter socks
- Perimeter bunding and clean water diversions
- Stabilised entranceways
- Silt fences and super silt fences.
- Cut and cover.
- Coconut / coir logs and matting.
- Silt curtains.
- Rock Socks
- Non-structural measures.
- Wave barriers.
- Dewatering tank



Dewatering bags The ability to utilise the above controls will differ relative to the specific activity or works area. At certain locations, the site will be extremely limited in terms of space (working directly adjacent to the railway line and from barges), therefore, there will be some limitations when installing ESCs. Details to this effect will be included in the SSESCPs.

6.3.3.1 Silt Socks

Silt socks will be used as a secondary control within larger treatment areas. They are useful for controlling the velocity of stormwater or sediment laden water on route to treatment devices such as sediment retention ponds. Silt and filter socks will be frequently positioned in roadside swales adjacent entranceways, around storm water inlets and cesspits, and along perimeters of flat or near flat sections of exposed material. Socks will frequently be used in series to provide a stronger accumulative treatment than when used in isolation. An example of a silt or filter sock is shown on Figure 6.1.



Figure 6.1. Silt or filter sock used as edge protection

6.3.3.2 Perimeter Bunding and Clean Water Diversions

A minimum of 0.55m high perimeter bunds will be installed in certain areas of the Project acting with a dual purpose:

- Firstly, as a physical barrier to sediment laden water trying to leave the construction area; and
- Secondly as a physical barrier for clean water attempting to enter the site.

Keeping these two types of water separate is a key component to this plan. The bunds will be compacted by an excavator using the bucket to shape and strengthen the bund. In some areas the bunds will also be track rounded to further enhance compaction. The outside face of the bund will be progressively stabilised using coconut matting or geotextile fabric or another suitable stabilisation method. Clean water diversion bunds may also have additional armouring such as geotextile fabric layers and/or check dams of aggregate or silt socks where there is a likelihood of scouring. Where scouring is identified in an area not originally thought to be at risk of scour then the additional armouring options will be retrospectively installed. The typical construction of the clean water diversion bunds is illustrated in Figure 6.2.

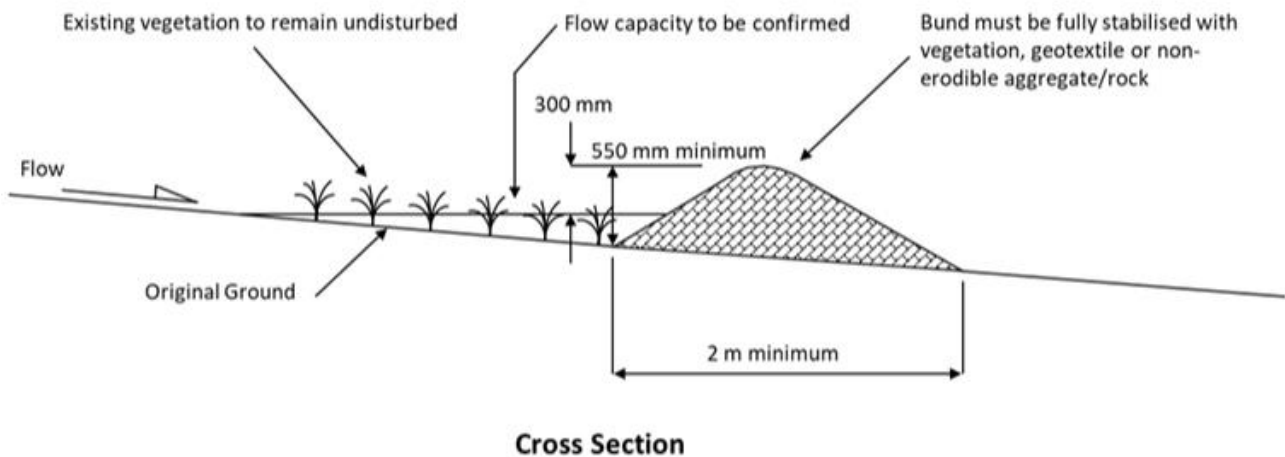


Figure 6.2. Minimum standard for the construction of perimeter and clean water diversion bunds

6.3.3.3 Stabilised Entraceways

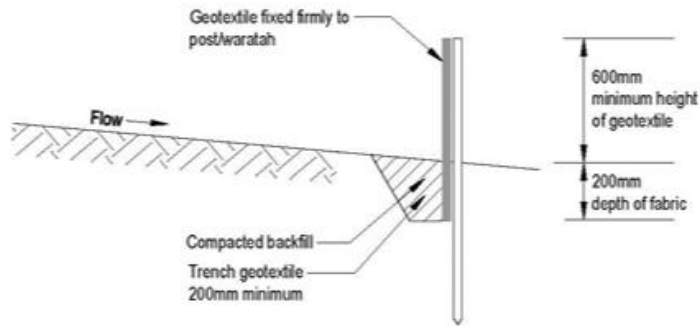
Stabilised entranceways will be utilised at access points throughout the construction site. These will be constructed out of suitable material to provide a strong surface for construction traffic to ensure any tracking of material beyond site controls is minimised.

As a secondary control to minimise tracking beyond the site, access roads will be swept with a combination of a tractor mounted road broom and sucker trucks, as required. This will mitigate any spilt material that may end up on the road as a consequence of material and debris being tracked out onto the road on the wheels and tracks of vehicles. Sweeping will be carried out in a manner that ensures that material being swept is directed into zones controlled by sediment controls, for example roadside swale protection in the form of silt socks or sediment pits

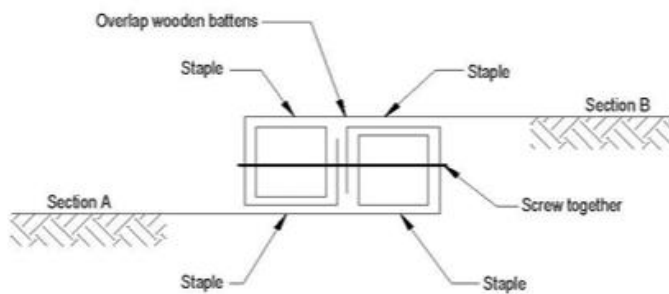


6.3.3.4 Silt Fences and Super Silt Fences

The Project's use of silt fences will be limited to smaller discrete areas where space is limited, stockpile management and for laydown areas. Figure 6.3 and Figure 6.4 illustrates the construction detail for a standard silt fence.



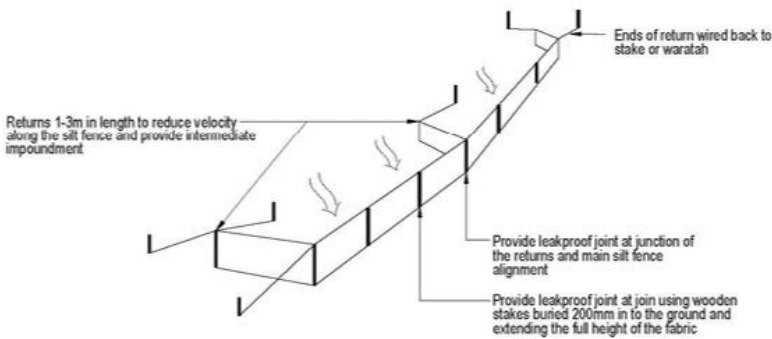
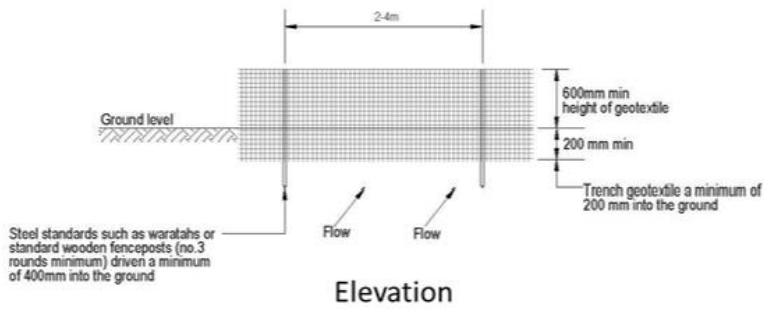
Cross-section



Standard fabric joint

Figure 6.3. Standard silt fence construction details



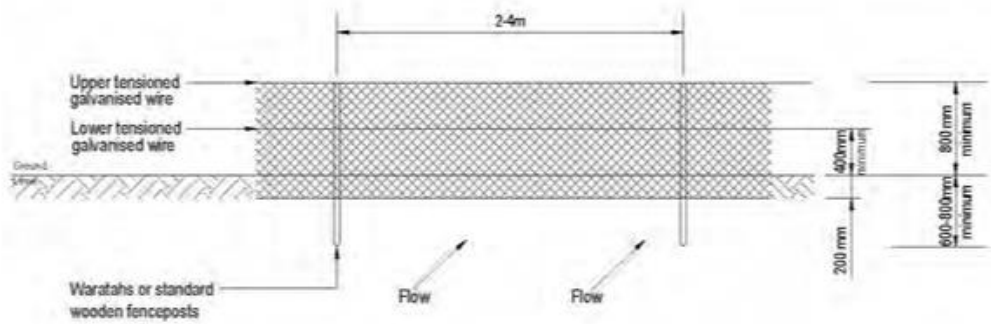


Silt fence with returns and support wire

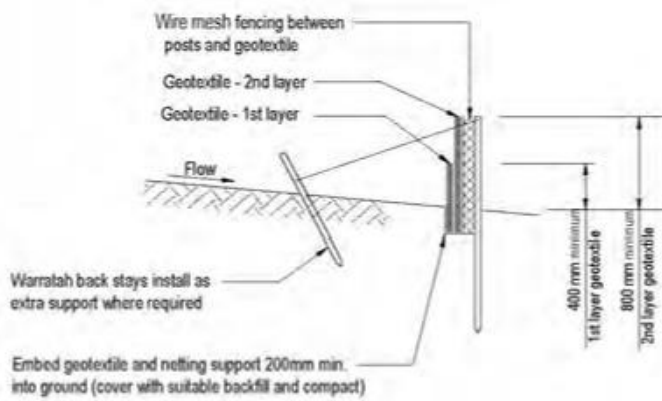
Figure 6.4. Standard silt fence construction details

Super silt fences will be used on the Project, particularly in areas with smaller treatment catchments that are unable to be directed to other controls and where a standard silt fence is not appropriate. Figure 6.5 below illustrates the typical super silt fence construction detail to be used.





Elevation



Cross-section

Figure 6.5. Super silt fence construction details



6.3.3.5 Cut and Cover

Rapid cut and cover is a process of rapid same day construction during fine weather. The concept in terms of sediment control is that exposed material is not left uncovered overnight or during rain events and involves small areas being worked on quickly and covered or stabilised either immediately or after several hours. The stabilisation of these surfaces will involve in appropriate areas aggregate, geotextile fabrics with the use of sandbags to hold the geotextile down particularly on the revetment works.

6.3.3.6 Coconut / Coir Logs and Matting

Coconut / coir products may be used as part of erosion control. Coconut matting is used for stabilisation of bare earth, swales and erosive surfaces which can also be combined with hydroseeded and planting. Surfaces such as swales and disturbed surfaces may also require coconut logs. These may be used in diversions, sediment control (in place of a silt sock) and can be planted. These are biodegradable products which can be left in-situ.

6.3.3.7 Silt Curtains

Silt curtains comprise a long sheet (or curtain) of geotextile that will trap silt particles while still allowing water through. These will generally have a float on the top edge and will be fixed at the bottom edge using weights or stakes. Silt curtains may be utilised to isolate works within the CMA.

6.3.3.8 Rock socks

Rock socks have the ability to weigh down geofabric or be placed directly on uncompleted works to minimise erosion or disturbance of construction areas. The rock socks can quickly be placed in advance of adverse conditions. They will most likely be used in the transition area between completed construction areas and those under construction.



Figure 6.6. Example of a rock sock

6.3.3.9 Wave Barrier

A wave barrier (acting as a form of coffer dam) may be utilised as a method to create a dry working zone during certain construction activities / areas. Figure 6.7 shows an example of the waver barrier structure.



Figure 6.7. Example of wave barrier structure

The utilisation of the wave barrier will be limited due to water depth, wave environment and ability to seal off at the landward margin. The most likely areas where it may be utilised is where a sewer currently exists. Pumping may be required from within the isolated area created by the wave barrier due to seepage under the barrier / tidal intrusion. Any pumped water will be discharged back to coastal waters, ensuring discharge quality parameters are met. Upon completion of the stage of work the wave barrier will be decommissioned and fully removed.

6.3.3.10 Dewatering Tank

A dewatering tank system may be utilised on site to treat any sediment laden water that requires dewatering. In general operations sediment laden water is pumped into the tank and will be allowed to settle with the suspended soils falling to the bottom of the tank, leaving clean water on top. This clean water can then be discharged as long as discharge quality parameters are met.

6.3.3.11 Dewatering bags / tubes

Sediment laden water may be pumped to dewatering bags which retain sediment particles within the woven geotextile while allowing clean water to filter through.

6.3.3.12 Non-Structural Controls

Non-structural controls involve managing the site methodology and program to limit the exposure to erosion. This will include:

- Minimising disturbance: Ensuring that only the area required for works is disturbed.
- Stage construction: Staging the disturbance so that only areas required by the program are open, and not the whole site, at any one time.
- Protect revetment/exposed CMA: Stabilisation, cut and cover will help to protect open and installing rock protection completed works. Limiting the velocity of water and protecting against erosion.
- Stabilisation: Both temporary and permanent works will be stabilised as soon as possible to reduce erosion. Weather events: Weather events or changes in conditions will be monitored.

6.3.3.13 Minimising Disturbance of the CMA

For all works within the CMA, to mitigate disturbance the following actions and controls will be utilised;

- Works will be planned as best as possible around favourable, low tide conditions.
- Weather events or changes to conditions will be monitored.
- Silt controls both land based and sea based will be used where possible and dependant on the nature of the works.
- The use of heavy machinery within the CMA will be limited as much as practically possible, ground conditions will be checked for machine weight bearing and a plan will be in place if retrieval is required.
- A spill kit will be available at all times in the event of a spill on site.
- As far as practicable, refuelling of any plant will take place on land only. Circumstances where this is not possible will be identified in the relevant SSES CPs with specific controls identified.
- Oil spill kits will be available for each set of works during the construction phase
- In the event of an incoming weather event cut and cover methods shall be used including geotextile cloth with rock cover to rapidly stabilise temporary works

6.4 Maintenance

All erosion and sediment controls will be inspected on a regular basis as set out in in Section 7.1. In results of these inspections maintenance instructions will be issued items requiring regular maintenance may include;

- Clips on sediment fences,
- Removal sediment from sediment fences
- Replacement of matting and logs

6.5 Flocculation

It is not currently envisaged that flocculation will be required. If flocculation is required, the relevant SSES CP will be amended prior to any flocculants being used. The amended SSES CP will be provided to GWRC prior to any amendment to the SSES CP being implemented on site.

6.6 ESC Decommissioning

All ESCs shall only be decommissioned and removed when the corresponding catchment has been suitably stabilised, or otherwise as in accordance with the relevant, certified SSES CP.

Upon the need to remove an ESC, a decommissioning form (Appendix F: Decommissioning Form) will be submitted to the Manager. The decommissioning form will include information around the stabilisation of the corresponding catchment, the expected quality of discharged water and the receiving environment.

The control will be removed once:

- Written advice has been provided by the Manager within ten working days; or
- If ten working days have passed since a written request was made and a response has not been received.

6.7 Amendments to ESCP

Any amendments to the overarching ESCP as provided within the CEMP will follow the processes identified under Section 2.1.3.

In certain circumstances minor changes to ESCPs may occur which do not require a SSES CP or further certification by the Manager prior to implementation. This includes the following:

- Temporary removal of ESC with reinstatement within the same working day.
- Change to ESC type as long as the same level of sediment treatment is being achieved by change in the ESC.
- Minor works on utilities and services outside of existing SSES CPs. This may include potholing for service locating.



- Emergency works such as repairs for the purpose of ensuring the integrity of KiwiRail assets or the failure of a structure requiring urgent repairs.



7 Monitoring and Reporting

The Alliance will undertake regular inspections and audits for the duration of construction works. A record of these inspections and audits will be maintained. In addition, records and responses to incidents and complaints will also be maintained.

7.1 Monitoring

The Alliance will undertake the following inspections to ensure compliance with the CEMP, the work method statement and the conditions of the resource consent and other permits:

- Pre-work inspections by the Project Ecologists and Environmental Advisor as required.
- Daily site walkovers by the Site Engineer / Supervisor or their delegate.
- Weekly inspections by the PEP-C Manager or Environmental Advisor or delegate.
- Site inspections by the Project Ecologists as required.
- Site inspections within 24 hours of a rainfall event where more than 6mm rain is measured in 1 hour or 20mm in 24 hours by the PEP-C Manager or Environmental Advisor.
- Site inspection within 24 hours of a coastal event that is likely to impair the function or performance of erosion and sediment controls by the PEP-C Manager or Environmental Advisor.

The inspections will include:

- Site, weather and tidal conditions.
- Confirmation that works are within the construction works area and that the area of disturbance is appropriate.
- Inspections of erosion, sediment and dust control measures including any maintenance.
- Inspections for obnoxious odours.
- Inspecting and reviewing other environmental controls.
- Inspecting machinery condition and that refuelling procedures are being adhered to.
- Monitoring as required.
- Inspection of waste and litter procedures on site.
- Inspecting the spill kit to ensure it contains all the required materials.
- An assessment of any potential and/or actual environmental effects.
- An assessment of whether any other mitigation is required.

A check sheet will be used to assist in the completion of the weekly inspections and audits by the Environmental Advisor and PEP-C Manager. A copy of the check sheet is attached in Appendix G: Site Inspection Report. The inspections will record any urgent or minor actions required. Any urgent actions will be provided to the relevant Manager immediately. For the purpose of this document, urgent actions are defined as any action needed to avoid, mitigate, or minimise a significant adverse effect. If minor actions are required, it will be raised as soon as practicable including at the next weekly toolbox meeting.

The completed check sheets will be maintained in the Project databases and will be made available to the Manager on request.



7.2 Complaints

The management of complaints will be in accordance with the CSMP.

Staff working on the Project will be instructed and trained as part of the induction process of the steps to follow if a complaint is received. Staff will also be instructed as part of this process to report any feedback (both complaints or compliments) from site visitors, neighbouring property owners or the surrounding community to the Stakeholder and Communications Advisor or Project Liaison Person.

Complaints and/or feedback can be provided through the specific 0800 number for the Project (0800 135 255), the Project specific email address (TeAraTupua@nzta.govt.nz) or to key personnel of the Project. The 0800 number and email address will be monitored by the Stakeholder and Communications Advisor or Project Liaison Person for the duration of the Project. All complaints and enquiries will be acknowledged within 48 hours of their receipt with a response will be provided to the complainant within five working days.

A complaints register will be maintained for the duration of works. This will include:

- The name, phone number and address (if known) of the complainant;
- Nature of the complaint;
- The date and time of the complaint and the location, date and time of the alleged event giving rise to the complaint;
- The weather conditions at the time of the complaint (as applicable to the complaint);
- Any other activities in the area unrelated to the Project that may have contributed to the complaint;
- Measures taken to respond to the complaint or confirmation of no action if deemed appropriate;
- The outcome of the investigation into the complaint; and
- A record of the response provided to the complainant.

The Alliance will notify the Manager (as relevant) of any complaint received that relates to the activities authorised by the resource consent and notices of requirement within two working days of receiving the complaint. The Alliance will advise the Manager of the outcome of the investigation into the complaint and measures taken or proposed to be taken to respond to the complaint within five working days.

The complaints register will be made available to the Manager and the Team Leader on request.

7.3 Reporting

A monthly report will be prepared detailing any inspections, audits, monitoring, incidents, or complaints that have occurred or been received. This will be provided to the Alliance Management Team (AMT).

7.4 Incidents

Procedures and record keeping relating to incidents are described in Section 8 of this plan.

7.5 Records

The following records will be maintained in the Project shared drives:

- Weekly inspections.
- Monthly reports.
- Ecological inspections.
- Incident records.
- Complaints register.
- Site induction and training register.
- Results of any monitoring undertaken.
- Fill material.

These will be available to the Manager on request.



8 Contingencies and Incident Procedures

There is the potential for unforeseen events or incidents to occur resulting in emergency actions being undertaken or requiring specific protocols to be adhered to. In the event of an incident occurring on site, the Alliance will notify the Manager as soon as practicable via phone or email.

The following section describes the actions and/or protocols for:

- Failure of erosion and sediment control.
- Adverse weather events.
- Spills and discharges of fuel, lubricants and hazardous materials.
- Encountering the aquifer.

Required actions and/or protocols for other incidents are described in other management plans as summarised in Table 8.1.

Table 8.1. Incident types and where the protocols are covered

Unforeseen Event / Incident	Management Plan
Injury and/or death of kororā	EMP
Injury and/or death of tōrea pango	EMP
Discovery of contaminated material	CLMP
Discovery of archaeological artifacts	Archaeological Management Plan
Traffic incidents	CTMP
Exceedance of noise / vibration criteria	CNVMP and associated Schedules

8.1 Failure of Erosion and Sediment Controls and Discharges

In the event of a:

- Discharge not authorised by the consent.
- Discharge from a non-stabilised area not treated by erosion and sediment controls;
- Failure of any erosion and sediment control measure including where a storm event exceeds the design volume of the device;
- Discharge of any hazardous substances, including cement; and
- Failure of any temporary stream diversion for the construction of culverts.
- Failure of structure during construction;
- Generation of a persistent sediment plume from sources of material not naturally existing in the Construction Works Area.

The Alliance will:

- Establish control measures, where these have failed or have not been implemented in accordance with the relevant management plan, as soon as practicable.
- Liaise with the Manager, GWRC to establish what remediation or rehabilitation works are required and whether it is practical to implement.
- Carry out any remedial or rehabilitation works as agreed and within 10 days upon receiving approval from the Manager, GWRC.
- Maintain a record of the incident.



If an erosion and sediment control measure has failed or if a storm event has exceeded the design capacity of a device and there is a discharge to the CMA:

- The Project Ecologist will be notified within 24 hours. The Project Ecologist will undertake an inspection of the relevant area to determine whether there has been a significant adverse effect on ecological values.
- The PEP-C Manager or Environmental Advisor will investigate the source of the sediment and discharge. This may include investigating whether it is from naturally existing materials (for example, sand and other fines) disturbed by construction activities or discharges from backfilling, or from culverts discharging, or may not be associated with the works site.
- The Alliance will prepare a report on the effects of the failure and any measures required to remedy the effects. This report will be provided to the Manager for approval within five working days of the event.
- The PEP-C Manager, Environmental Advisor or Project Ecologist (or their delegate) will undertake an inspection as soon as possible to ensure that after reasonable mixing there is no further serious impacts on the receiving environment.
- The activity will not recommence until the discharged can be prevented or the effect considered to minor.

The Alliance will prepare a report on the effects of the failure and any recommended measures that may be required to remedy the effects within five working days of the event.

8.2 Adverse Weather Events

A Trigger Action Response Plan (TARP) will be utilised to provide advice to the Project and Site Engineers of the likely impacts of adverse weather events based on likely wave height and weather conditions during an event.

Weather forecasts (including wind, tides, swells and rain) will be monitoring regularly throughout the day. If adverse weather conditions are forecast, the following steps will be undertaken:

- The potential impacts of the weather event will be assessed by a Site Engineer, Environmental Advisor or their delegate.
- Any equipment or materials within the CMA will be removed if practicable and will be battened down and removed to a safe location.
- Equipment in the site yards will be removed to safe location if required or battened down.

8.3 Discharges of fuel, lubricants and hazardous materials

In the event of a discharge of fuel, lubricant or hazardous materials to the marine environment, the spill / discharge will be managed in accordance with Table 8.2 to ensure that the spill is contained.

Spill kits and signage relating to spill response procedures will be maintained on site for the duration of the works. Staff will be trained in spill management and the Project spill response procedure as part of site inductions. All spill kits will be checked and re-stocked following an environmental incident.



Table 8.2. Spill response procedure

Step	Actions
1: Preparation	<ul style="list-style-type: none"> ▪ Ensure a person is identified as principal responder. ▪ Ensure people are trained to use spill kit. ▪ Ensure spills are discussed in the weekly toolbox meeting. ▪ Make sure you have all the necessary PPE, signage, equipment and chemical treatment. ▪ Check that the spill kit is complete.
2: Establishment on site	<ul style="list-style-type: none"> ▪ Check briefing notes. ▪ Find the incident controller and identify yourself and find out the type of spill material (Note: you may be the first responder and need to be the controller until assistance arrives). ▪ Note the areas that are safe and unsafe. ▪ Move to task area and receive briefing by existing personnel as required. ▪ Begin task.
3: Initial action	<ul style="list-style-type: none"> ▪ Walk over the site to check for hazards. ▪ Plan your response, consider: <ul style="list-style-type: none"> - Rate of spread; - Impact on sensitive environmental areas; - Are you trained to handle a chemical spill; - Try and work out what the spill is to determine the nature of risk and volume of material; - Do not touch the spill material; - Keep upwind of the spill; and - Notify the principal responder and PEP Manager of the details at once. The PEP Manager will notify GWRC via their pollution hot line (0800 496 734)
4: Treatment	<ul style="list-style-type: none"> ▪ Stop flow: <ul style="list-style-type: none"> - Turn off the flow of the spill if it is safe to do so - Do not enter into a hazardous situation ▪ Initial spill control and isolate the source of spillage: <ul style="list-style-type: none"> - Stop the spill spreading: <ol style="list-style-type: none"> 1. Use absorbent socks or other available materials (soil) to contain spill (absorbent socks will restrict flows on a chip seal but may allow a trickle of the spill to pass beneath the sock; or 2. Dig a hole to trap the flow ▪ Spill clean-up: <ul style="list-style-type: none"> - Start from the contained area and work back towards the spill point.
5: Disposal of uplifted material	<ul style="list-style-type: none"> ▪ When a suction sweeper is not used, uplift the material and place in a sealed container. ▪ Uplift sump covers and/or absorbent socks. ▪ Dispose of material at a suitably licensed facility.
6: Test and check	<ul style="list-style-type: none"> ▪ Check that the treatment has been successful. ▪ Check the location of the activity has been accurately recorded.

The fuel suppliers are responsible for the transport of fuel around the site and refuelling for construction vehicles. The suppliers will have their own emergency response documents that cover all aspects of their operation.



8.4 Encountering the aquifer

The construction of the bridge piles could encounter the aquifer. The SSESCP for the bridge and the work pack will detail how the piles are to be constructed and how the any impacts on the aquifer will be avoided.

8.5 Records

An incident register will be maintained on the Project databases to record any incidents on site. The register will include:

- The type and nature of the incident including the cause of the release of contaminants.
- Date and time of the incident.
- Weather conditions at the time of the incident.
- Assessment of the effects of the incident.
- Measures taken to contain any further release of contaminants or remedy the effects of the incident.
- Measures put in place to prevent the incident from reoccurring.

A copy of an incident report is attached Appendix H: Incident Report. The incident register will be made available to the Manager upon request.

8.6 Review

Immediately following an unforeseen event or incident, a review of the circumstance leading to the event will be examined, along with the response and its effectiveness. Based upon the outcome of the review, the CEMP may be updated.



9 Health and Safety Requirements

All construction activities will be undertaken in accordance with the health and safety requirements described in the:

- Health and Safety Management Plan.
- Emergency Management Plan (contained in the Health and Safety Management Plan).
- Work Packs and JSEAs.

All visitors to the site must undergo a visitors briefing so they are aware of the environmental, cultural and health and safety requirements while on site. Visitors must be closely escorted by inducted persons at all times while on site.



Appendix A: Resource consent record

Ref	Resource consents	Detail	Expiry Date	General conditions	Specific conditions
<i>Construction</i>					
RC.1	Land use (s9) – NESCS (WCC)	Disturbance of contaminated soils within Wellington City.	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.1, PC.5 - PC.14 CC.1, CC.2, CC.4- CC.5A MW.1 – MW.5A AH.1 - AH.2 CL.1 – CL.3
RC.2	Land use (s9) – NESCS – (HCC)	Disturbance of contaminated soils within the City of Lower Hutt.	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.1, PC.5 - PC.14 CC.1, CC.2, CC.4 - CC.5A MW.1 – MW.5A AH.1 - AH.2 CL.1 – CL.3
RC.3	Land use (s9(2)) – Land disturbance activities (GWRC)	The use of land, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks over 3,000m ² (Project-wide)	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.1 - PC.14 CC.1 – CC.6 MW.1 – MW.5A AH.1 – AH.2 EW.1 – EW.10
RC.4	Land use (s9) – Land use (HCC)	Construction works at Honiana Te Puni Reserve including: <ul style="list-style-type: none"> ▪ Earthworks within the Special Recreation Zone; ▪ Formation and use of the Northern Construction Yard; ▪ Repurposing of the Wellington Water Ski Clubhouse as a temporary site office for construction; and ▪ Demolition of the existing Wellington Rowing Association Shed and Wellington Water Ski Clubhouse. 	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.5 - PC.14 CC.1 - CC.5A MW.1 – MW.5A AH.1 –AH.2 HTP.1 – HTP.9 CNV.1 – CNV.5 CT.1 – CT.4
<i>Construction and operational</i>					
RC.5	Land use (s9) – Land use (HCC)	Permanent works at Honiana Te Puni Reserve including: <ul style="list-style-type: none"> ▪ Earthworks within the Special Recreation Zone. ▪ Integrated Clubs Building and associated parking area; ▪ Tāwharau Pods for various uses including small scale retail activities; ▪ Whare; and ▪ Sculptures. 	Unlimited	GC.1 - GC.2, GC.4, GC.6A	PC.5 – PC.14 CC.1 – CC.5A MW.1 – MW.5A AH.1 –AH.2 HTP.1 – HTP.9 CNV.1 – CNV.5 CT.1 – CT.4 LV.1 – LV.4
<i>Construction</i>					
RC.6	Coastal permit (s12, s14, s15) (GWRC) – Construction activities in the CMA and temporary occupation and associated discharge of contaminants.	Works associated with the Shared Path including: <ul style="list-style-type: none"> ▪ Modifications to the existing rock revetment including partial replacement and alteration; ▪ Placement and use of temporary structures; ▪ Destruction, damage, disturbance or deposition; ▪ Reclamation in the CMA; ▪ Placement of new seawalls, groynes and rock revetment; ▪ Discharges to land and water outside Areas of Significant Conservation Value during construction; ▪ Construction of offshore habitats; and 	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.1, PC.5 – PC.14 CC.1 - CC.6 MW.1 – MW.5A CA.1, CA.2, CA.4 – CA.16 EM.1 – EM.23 LV.1 – LV.4



		<ul style="list-style-type: none"> Addition to existing seawalls for living seawalls at Frank Kitts Park and Greta Point. 			
RC.7	Water permit (s14) (GWRC) – Dewatering And excavation affecting the Hutt Valley Aquifer System/Zone.	Geotechnical investigations within the Hutt Valley aquifer zone where the depth of the bore below ground level/seabed exceeds 5m. Construction and excavation activities deeper than 5m below ground level in the Hutt Valley aquifer system associated with the Shared Path Bridge and seawalls. Dewatering associated with construction of the Shared Path Bridge in the Hutt Valley aquifer system.	10 years (GC.5)	GC.1, GC.4	PC.1, PC.5 – PC.14 CC.1, CC.2, CC.4 - CC.6 MW.1 – MW.5A DG.1, DG.2
RC.8	Discharge permit (s15) (GWRC) – Discharge of contaminants.	Discharge of contaminants (including fill material) onto water or onto or into land where it may enter water land;	10 years (GC.5)	GC.1 - GC.2, GC.4	PC.1, PC.5 – PC.14 CC.1, CC.2, CC.4 - CC.5A MW.1 – MW.5A EW.1 – EW.10
Operational					
RC.9	Activities on new land (s89(2) of the RMA) (WCC)	Activities on new land area to be created between existing MHWS and future MHWS – Wellington City, including operation and maintenance of Shared Path.	Unlimited duration	GC.4, GC.6A	LV.1 – LV.4
RC.10	Activities on new land to be created (s89(2) of the RMA) (HCC)	Activities on new land area to be created between existing MHWS and future MHWS – Hutt City, including operation and maintenance of Shared Path.	Unlimited duration	GC.4, GC.6A	LV.1 – LV.4
RC.11	Coastal permit (s12) - Permanent occupation and associated use.	Occupation and use of space in the CMA for permanent structures associated with the Project; seawalls, rock revetment, groynes, culvert extensions, offshore habitats and living seawalls.	35 years (GC.6)	GC.1, GC.4, GC.6A	CA.2, CA.3, CA.17, EM.4A, EM.7 – EM.10, EM.16
RC.12	Discharge Permit (s15) (GWRC) - Discharge of contaminants into or onto land or water from the Shared Path.	Discharge of stormwater from the Shared Path, including stormwater that may be contaminated, into water or onto or into land where it may enter water.	35 years (GC.6)	GC.1 – GC.2, GC.4, GC.6A	
RC.13	Discharge Permit (s15) (GWRC) - Discharge of contaminants into or onto land or water from Honiana Te Puni Reserve.	Discharge of stormwater from parking areas, buildings and other impervious areas at Honiana Te Puni Reserve including stormwater that may be contaminated, into water or onto or into land where it may enter water.	35 years (GC.6)	GC.1 – GC.2, GC.4, GC.6A	SW.1 – SW.2



Appendix B: Resource consent conditions

Ref	Condition	Location in plan
<i>Standard conditions</i>		
GC.1A	<p>The Project shall be undertaken in accordance with the most recent version of the following plans:</p> <ol style="list-style-type: none"> a. Contaminated Land Management Plan prepared and certified in accordance with Condition CL.1; b. Ecology Management Plan prepared and certified in accordance with Condition EM.1, including the following: <ol style="list-style-type: none"> i. Predator Control Plan ii. Biodiversity Offset Management Plan iii. Mussel Bed Management Plan c. Construction Erosion and Sediment Control Plan prepared and certified in accordance with Condition EW.3; d. Site Specific Erosion and Sediment Control Plan prepared and certified in accordance with Condition EW.5; e. Coastal Works Construction and Environmental Management Plan prepared and certified in accordance with Condition CA.7; f. <i>Smeagol climoi</i> Translocation Plan prepared in accordance with Condition EM.23; g. Beach Nourishment Management Plan prepared and certified in accordance with Condition CA.6A; h. Mana Whenua Values Plan prepared in accordance with Condition MW.4; i. Construction Environmental Management Plan prepared in accordance with Condition CC.1; j. Northern Construction Yard Reinstatement Plan prepared in accordance with Condition HTP.4; k. Communications Plan prepared in accordance with Condition PC.7; and l. Construction Traffic Management Plan prepared in accordance with Condition CT.1. 	This plan consolidates the CEMP, ESCP and Coastal Works CEMP.
GC.1B	<ol style="list-style-type: none"> a. A copy of the plans and these designation and resource consent conditions shall be kept either electronically or in hard copy on-site at all times that Enabling Works and Construction Works are being undertaken. b. The consent holder shall make contractors aware of the requirement to comply with these conditions, including through the implementation of the plans. 	<ol style="list-style-type: none"> a. Noted in Section 2.3.7 b. Noted in Section 2.3.1
GC.1C	All earthmoving machinery, pumps, generators and ancillary equipment shall be operated so that spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery services and maintenance.	Section 5.3.3
GC.2	The preparation of all plans and all actions required by these conditions shall be undertaken by a Suitably Qualified Person.	Plan has been prepared by Sevi Hartley (Senior Environmental Advisor) and Rubie McLintock (Planner). We consider these people to be suitably qualified for this.
<i>Pre-construction site meeting</i>		
PC.1	<ol style="list-style-type: none"> a. No less than twenty (20) working days prior to the anticipated Start of Construction, a pre-construction site meeting shall be arranged with appropriate representation from Waka Kotahi, the Councils' monitoring teams and the primary contractor. Representatives of KiwiRail and the Mana Whenua Steering Group shall also be invited to attend. b. The purpose of the pre-construction site meeting is to share information in respect of the works methods, erosion and sediment controls, management plan requirements and compliance with the conditions of the resource consents. 	Section 5.1.2



Ref	Condition	Location in plan
	<p>c. The pre-construction meeting shall discuss the works methodology so that all relevant parties are aware of the relevant conditions of the resource consent.</p> <p><i>Advice note. Infrastructure owned by KiwiRail is located within and adjacent to the Project footprint. Approval from KiwiRail as landowner (e.g. Deed of Grant and access permits) and Requiring Authority approval for work in designated land is required prior to any works on rail land. These approvals will likely include appropriate notification timeframes and access protocols for work on KiwiRail land.</i></p>	
Management plans (resource consents)		
	<p>a. The management plans listed in (b) shall be submitted to the Manager at least twenty (20) working days prior to the anticipated Start of Construction (unless otherwise specified) for certification. The certification process shall be confined to confirming that the Management Plan adequately gives effect to the relevant condition(s).</p> <p>b. The following plans shall be submitted for certification:</p> <ol style="list-style-type: none"> i. Contaminated Land Management Plan; ii. Ecology Management Plan; iii. Construction Erosion and Sediment Control Plan; iv. Site Specific Erosion and Sediment Control Plan; v. Coastal Works Construction and Environmental Management Plan; and vi. Beach Nourishment Management Plan; <p>c. If twenty (20) working days have passed since the management plan has been provided to the Manager under clause (a) above, and the consent holder has not received a response from the Manager, the Management Plan shall be deemed to be certified.</p> <p>d. If the Manager(s) response is that they are not able to certify the Management Plan the consent holder shall request that the Manager(s) provide reasons and recommendations for changes to the management plan in writing. The consent holder shall consider any of the reasons and recommendation of the Manager(s) and resubmit an amended Management Plan to be certified.</p> <p>e. If the consent holder has not received a response from the Manager within five (5) working days of the date of resubmission under clause (d) above, the amended Management Plan will be deemed to be certified.</p> <p>f. Any certified management plan may be amended, if necessary, to reflect any changes in design, construction methods or management of effects without the need for certification, where;</p> <ol style="list-style-type: none"> i. the amendment/s have no, or a de minimis adverse effect on the environment, or is a change that results in an improved environmental outcome; or ii. the amendment is an administrative change, including nominating personnel; and iii. the revised Management Plan is provided to the Manager and, within ten (10) working days of receiving the revised Management Plan, the Manager has not advised in writing that the amendment shall be certified under clause (b) – (e) on the basis that the amendment/s do not meet the requirements of clauses (f)(i) or (f)(ii). <p>g. Except as provided for in clause (f), amendments to management plans shall be certified in writing by the Manager prior to the commencement of any works to which the amended management plan(s) relate.</p> <p>h. All management plans shall describe how they have taken into account the Te Ara Tupua Kaitiaki Principles set out in Attachment C of these conditions.</p>	<ol style="list-style-type: none"> a. Noted. b. This plan includes the ESCP and Coastal Works CEMP. c. Certification process outlined in Section 2.1.1. d. Certification process outlined in Section 2.1.1. e. Certification process outlined in Section 2.1.1. f. Amendment process outlined in Section 2.1.3. g. Amendment process outlined in Section 2.1.3. h. Refer to Section 1.3. i. Noted.





Ref	Condition	Location in plan
	<p>i. Notwithstanding the timeframes specified in (a) above and elsewhere in these conditions in respect of the provision of management plans and other materials for certification, the Start of Construction may occur as soon as the relevant management plans and / or other materials are certified or deemed to be certified.</p> <p><i>Advice notes: The Contaminated Land Management Plan will be submitted for certification to the Manager, HCC and the Manager, WCC. The other management plans listed in this condition will be submitted for certification to the Manager, GWRC.</i></p> <p><i>It is anticipated that the construction of the Integrated Clubs Building in Honiana Te Puni Reserve will commence in advance of other works. Activity specific management plans will be prepared for those works as provided by this condition.</i></p>	
Complaints Management		
PC.12	<p>A record of all complaints received in respect of the Project Construction Works shall be maintained during Construction Works.</p> <p>This record shall include:</p> <ol style="list-style-type: none"> The name, phone number and address (if known) of the complainant (unless the complainant wishes to remain anonymous); Nature of the complaint; The date and time of the complaint, and the location, date and time of the alleged event giving rise to the complaint; The weather conditions at the time of the complaint (as far as practicable) including wind direction and approximate wind speed if the complaint relates to air quality, odour or noise and where weather conditions are relevant to the nature of the complaint; Any other activities in the area, unrelated to the Project, that may have contributed to the complaint, such as construction undertaken by other parties, fires, traffic accidents or any unusual conditions; Measures taken to respond to the complaint or confirmation of no action if deemed appropriate. The outcome of the investigation into the complaint; and A record of the response provided to the complainant. 	Complaints procedure described in CSMP and Section 7.2 of the CEMP.
PC.13	<ol style="list-style-type: none"> The consent holder shall notify the Manager of any complaint received that related to the activities authorised by these resource consents and notices of requirement as soon as reasonably practicable and no longer than two (2) working days after receiving the complaint. The consent holder shall respond to any complainant as soon as reasonably practicable and within five (5) working days by advising the Manager and complainant of the outcome of the consent holder's investigation and all measures taken, to respond to the complaint. 	Complaints procedure described in CSMP and Section 7.2 of the CEMP.
PC.14	The record of complaints shall be made available to the Manager upon request.	Complaints procedure described in CSMP and Section 7.2 of the CEMP.
Construction Environmental Management Plan		
CC.1	<ol style="list-style-type: none"> A Construction Environmental Management Plan (CEMP) shall be prepared prior to the Start of Construction. The purpose of the CEMP is to confirm the management procedures and construction methods to be used, in order to avoid, remedy or mitigate potential adverse effects arising from construction activities. The CEMP shall be submitted to the Manager for information at least twenty (20) working days prior to the Start of Construction. 	<ol style="list-style-type: none"> This plan. Section 1.2. Section 1.4.1.
CC.2	<p>The CEMP shall be prepared having regard to the <i>NZ Transport Agency's Guideline for preparing Environmental and Social Management Plans (April 2014)</i>, and shall include the following:</p> <ol style="list-style-type: none"> The roles and responsibilities of staff and contractors; Details of the site or Project manager and the Project Liaison Person, including their contact details (phone and email address); The Construction Works programme and the staging approach; 	<ol style="list-style-type: none"> Section 2.2. Section 2.2. Section 3.1. Section 3. Appendix C. Appendix C. Section 5.3.8.1 and Section 5.1.3





Ref	Condition	Location in plan
	<ul style="list-style-type: none"> d. The Construction Works methodology including proposed hours of work, and site layouts (including construction yards), locations of refuelling activities, procedures for the refuelling and maintenance of plant and equipment and construction lighting; e. Methods for controlling dust and the removal of debris and demolition or construction materials from public roads, paths or places; f. Methods for routine dust and odour monitoring; g. Methods to address the safety, integrity, protection and (where necessary) the relocation of existing network utilities. This shall include any specific measures agreed with the asset owner including: <ul style="list-style-type: none"> i. Continued access to assets during construction for maintenance; ii. Identification of network utilities prior to and detailed design and construction works; iii. Agreement on any protection, diversion or replacement of assets affected by the permanent works; iv. Identification of assets on construction plans and appropriate physical indicators showing surveyed locations; v. Informing all persons working on the site of the presence and location of network utilities and the restrictions in place in relation to those network utilities; vi. Access to assets during construction for maintenance and operation; h. Methods to provide access to existing network utilities for owners and operators during construction; i. Methods of providing for the health and safety of the general public, including training for site personnel about risks posed to active users; j. Methods for inspections, incident management and reporting in accordance with Condition EW.7A and EW.7B; k. Methods to inform and train all persons working on the site of potential environmental issues and how to avoid remedy or mitigate any potential adverse effects; and l. Methods for amending and updating the CEMP as required. 	<ul style="list-style-type: none"> h. Section 5.3.8.1 and Section 5.1.3 i. Section 5.2.3. j. Section 7 and Section 8 k. Section 2.3 l. Section 2.3. m. Section 2.1.3.
CC.3	The CEMP shall include methods for management of air quality throughout the construction period, in accordance with the <i>Good Practice Guide for Assessing and Managing Dust</i> , Ministry for Environment, 2016 and the <i>Good Practice Guide for Assessing and Managing Odour</i> , Ministry for Environment, 2016, or any subsequent versions.	Appendix C
CC.4	The CEMP shall demonstrate how it links with other management plans prepared in accordance with these conditions to manage the effects of the Project.	Entire document and Section 1.3.1.2.
CC.4A	If the CEMP required by Condition CC.1 is amended or updated, the revised CEMP shall be submitted to the Manager for information within five (5) working days of the update being made.	Section 2.1.3
<i>Mana Whenua Steering Group</i>		
MW.3	<p>The MWSG shall be invited to participate in the following:</p> <ul style="list-style-type: none"> a. Development of the Project design to incorporate cultural values into elements such as: <ul style="list-style-type: none"> i. Cultural expression in artwork on the Shared Path features such as the Shared Path Bridge and in landscape works and plantings; ii. Implementation of biodiversity mitigation, offset, or compensation measures; and iii. Signage describing local features and the history of the area. b. Development of the Communications Plan with respect to the methods of engaging with iwi and hapū; c. Preparation of the Accidental Discovery Protocol (as required by Condition AH.1 and AH.2) and any updates to this Protocol; 	As relevant to the CEMP please refer to Section 1.3, 5.1.1.4 and 5.3.8.3.





Ref	Condition	Location in plan
	<ul style="list-style-type: none"> d. Development and implementation of agreed cultural protocols/ tikanga appropriate to stages of the works or activities (for example: blessings, accidental discoveries, vegetation clearance, relocation of native fauna); e. Development of cultural indicators covering matters such as (but not limited to) traditional association, mahinga kai and cultural stream health measures; and f. The development and implementation of a Mana Whenua Values Plan. 	
<i>Archaeology and heritage</i>		
AH.1	<ul style="list-style-type: none"> a. For activities and areas of the Project not covered by an Archaeological Authority granted under the Heritage New Zealand Pouhere Taonga Act 2014, an Accidental Discovery Protocol shall be prepared for any accidental archaeological discoveries which occurring during Construction Works. b. Where an Archaeological Authority has not been granted prior to the Start of Construction, an Accidental Discovery Protocol shall be submitted to the Manager and the Regional Archaeologist, Central Region, HNZPT for information twenty (20) working days prior to the Start of Construction. 	Accidental discovery protocol covered in Archaeological Management Plan.
AH.2	<p>The Accidental Discovery Protocol shall be consistent with the NZ Transport Agency Minimum Standard P45 Accidental Archaeological Discovery Specification, or any subsequent version.</p> <p>The Accidental Discovery Protocol shall be prepared in consultation with mana whenua and modified as necessary to reflect the site-specific Project detail.</p>	Accidental discovery protocol covered in Archaeological Management Plan.
<i>Pre-construction survey of rocky infauna</i>		
EM.23	<ul style="list-style-type: none"> a. Prior to any Enabling Works or Construction Works at shingle beaches, a pre-construction survey of rocky infauna at shingle beaches under the Project footprint shall be undertaken. The purpose of the survey is to identify if any Smeagol climoi are present so that these can be translocated to unaffected shingle habitat. b. The method for sampling of rocky infauna shall be set out in the EMP. c. The results of the survey required by clause (a) shall be provided to GWRC and DOC within 4 weeks of completion of the assessment. d. If any Smeagol climoi are identified by the survey, they shall be translocated by removing and redistributing the shingles, within which it is present, to an appropriate unaffected shingle habitat by hand, in accordance with the Smeagol climoi Translocation Plan detailed in clauses (e)-(f). e. The methods for the translocation will be set out in a Smeagol climoi Translocation Plan developed by a Suitably Qualified Person in consultation with DOC. A copy of the Smeagol climoi Translocation Plan will be provided to GWRC for information prior to any translocation occurring. f. The Smeagol climoi Translocation Plan shall detail the frequency and methods of monitoring of Smeagol climoi to occur six monthly for a period of 2 years post translocation event. Any translocation of Smeagol climoi shall be undertaken prior to works affecting the shingle beach habitat. 	Addressed in Section 5.1.4.1
<i>Erosion and sediment control measures</i>		
EW.1	All practicable measures shall be taken during construction to reduce to the smallest amount practicable erosion and the discharge of sediment beyond the footprint of the Project.	Section 5.3 and Section 6
EW.2	Erosion and sediment control measures shall be implemented throughout Construction Works. They shall be constructed and maintained to operate and perform in accordance with <i>Erosion and Sediment Control Guidelines for the Wellington Region</i> (2002) and any amendments to these guidelines, except where a higher standard is detailed in the conditions below in which case the higher standard shall apply.	Section 6.2





Ref	Condition	Location in plan
<i>Erosion and Sediment Control Plans</i>		
EW.3	<ul style="list-style-type: none"> a. A Construction Erosion and Sediment Control Plan (ESCP) shall be prepared prior to the Start of Construction. b. The purpose of the ESCP is to set out measures to be implemented during construction to meet the requirements of EW.1. c. The ESCP shall be submitted to the Manager for certification at least twenty (20) working days prior to the anticipated Start of Construction in accordance with the process set out in Condition PC.5. 	<ul style="list-style-type: none"> a. This plan (Section 6.0) is the ESCP. b. Section 6.0. c. Noted.
EW.4	<p>The ESCP shall be prepared in accordance with the Erosion and Sediment Control Guidelines for the Wellington Region Greater Wellington Regional Council (2002) and any amendments to these guidelines.</p> <p>The ESCP shall be appropriate to the scale, location and type of earthworks and include:</p> <ul style="list-style-type: none"> a. Details of erosion and sediment controls including supporting information (calculations and design drawings); b. For works in the CMA south of Karanga Point, measures to minimise the resuspension of potentially contaminated sediments; c. Links to contaminated land measures set out in the CLMP; d. Identification of the persons with defined roles and responsibilities to monitor compliance with the ESCP; e. Monitoring and maintenance requirements; f. Identification of when specific work areas / activities will require the preparation of a Site Specific ESCP (SSESCP) to a greater level of detail than outlined in the ESCP; and g. A procedure to establish and define minor changes to erosion and sediment control, which would not require either a SSESCP or further certification by the Manager prior to implementation. 	<ul style="list-style-type: none"> a. Section 6.1 and 6.3.3 b. Section 2.1.4 c. Section 2.1.4 and Section 6.1 d. Section 2.2 e. Section 7.1 and 6.4 f. Section 2.1.4 g. Section 6.7
EW.5	<ul style="list-style-type: none"> a. SSESCP(s) shall be prepared for the specific work areas / activities identified in the ESCP. b. The purpose of the SSESCPs is to provide details for erosion and sediment control measures to be implemented within a specific work area or for a particular activity. c. The SSESCPs are to be limited to technical erosion and sediment control design and construction methodology and shall be prepared in accordance with the <i>Erosion and Sediment Control Guidelines for the Wellington Region Greater Wellington Regional Council (2002)</i> and any amendments to these guidelines; and d. The SSESCP shall be submitted to the Manager for certification at least five (5) working days prior to earthworks associated with the specific area or activity in accordance with the process set out in Condition PC.5, with the exception that the timeframe set out in Condition PC.5 (c) is amended to five (5) working days in respect of the SSESCP. 	Please refer to Section 2.1.4
EW.6	With the exception of Enabling Works, no earthworks activity shall commence until the ESCP or relevant SSESCP is certified in accordance with the process set out in Condition PC.5.	Noted
<i>Inspection, incidents and monitoring</i>		
EW.7	<ul style="list-style-type: none"> a. During Construction Works, erosion and sediment controls shall be inspected on a weekly basis and within 24 hours of each storm and/or coastal event that is likely to impair the function or performance of the erosion and sediment controls. A storm event is where more than 6mm of rainfall is measured in 1 hour or 20mm in 24 hours. b. Inspections shall be carried out in accordance with the certified ESCP and records shall be maintained which detail: <ul style="list-style-type: none"> i. The location of the monitoring undertaken; ii. The time and date the monitoring was undertaken; iii. The weather, wave and tide conditions at the time of monitoring; iv. The performance criteria measured; 	<ul style="list-style-type: none"> a. Section 7 b. Section 7 c. Section 7





Ref	Condition	Location in plan
	<ul style="list-style-type: none"> v. The erosion and sediment controls that required maintenance; vi. The maintenance actions which were completed; vii. The time when the maintenance was completed; and viii. Areas of non-compliance with the ESCP, the reasons for the non-compliance and any action taken to remedy the non-compliance (if any). <p>c. This information shall be made available to the Manager upon request.</p>	
EW.7 A	<ul style="list-style-type: none"> a. If an incident occurs for which there is no incident procedure set out in these conditions the process outlined below in (b) – (d) shall apply. b. The consent holder shall notify the Manager as soon as practicable after identifying that any contaminants (including sediment) have been released during the construction of the Project and entered the CMA due to any of the following: <ul style="list-style-type: none"> i. Discharges from non-stabilised areas that are not treated by erosion and sediment control measures required under this consent; ii. Failure of any erosion and sediment control measures; iii. Discharge of any hazardous substances, including cement; and iv. Failure of any temporary stream diversion for the construction of culverts; c. If any of the incidents specified in (b) occur, the consent holder shall: <ul style="list-style-type: none"> i. Establish control measures, where these have failed or have not been implemented in accordance with the relevant management plan, as soon as practicable; ii. Liaise with the Manager to establish what remediation or rehabilitation is required and whether such remediation or rehabilitation is practical to implement; iii. Carry out any agreed remedial action; and iv. Maintain a record of the incident, which shall include the date and time of the incident, the nature, manner and cause of the release of the contaminants, weather conditions at the time of the incident, the steps taken to contain any further release, and the steps to remedy any adverse ecological effects on the CMA. d. The notification in (b) shall be either by telephone or email, or via an alternative method as agreed with the Manager. 	Incident procedures described in Section 8
EW.7 B	<ul style="list-style-type: none"> a. In the event of either a failure of erosion and sediment control devices or where a storm event exceeds the design volume of the device, and where the discharge is to the CMA, a suitably qualified ecologist shall be notified within 24 hours, who shall then inspect the relevant area to determine whether there has been a significant adverse effect on the affected area's ecological values. b. The consent holder shall prepare a report on the effects of the failure and any recommended measures that may be required to remedy the effects. The report shall be submitted to the Manager for approval within five (5) working days of the event. c. The consent holder shall ensure that after reasonable mixing no further serious impacts shall occur within the receiving environment. d. Any remedial measures shall be implemented within ten (10) working days of the approval of the Manager. 	Incident procedure described in Section 8
<i>Stabilisation and decommissioning</i>		
EW.8	The site shall be stabilised against erosion as soon as practicable, and in a progressive manner, as earthworks are completed over various areas of the site.	Refer to Section 5.4 and Section 6.
EW.9	Upon completion of earthworks on the Project site, all areas of bare earth shall be permanently stabilised against erosion, in accordance with the certified ESCP.	Refer to Section 5.4 and Section 6.





Ref	Condition	Location in plan
EW.10	<ul style="list-style-type: none"> a. Erosion and sediment control measures shall only be removed: <ul style="list-style-type: none"> i. when the corresponding catchment area has been permanently stabilised; or ii. in accordance with a certified SSES CP. b. The removal of an erosion and sediment control device shall only occur after consultation and the receipt of written advice from the Manager. Such advice shall be based on information provided by the consent holder in relation to the quality of discharged water and the receiving environment and the adequacy of soil stabilisation and/or covering vegetation. c. If ten (10) working days have passed since a written request is made to the Manager to remove an erosion and sediment control device and the Manager has not provided a written response, then the device may be removed. 	Refer to Section 6.6 (other information will be contained within SSES CP).
<i>Design details – coastal</i>		
CA.1	The temporary occupation of the CMA during construction is limited to the areas and structures identified in the drawings listed in Condition GC.1, or as otherwise certified by the Manager.	Noted.
<i>Coastal Works Construction and Environmental Management Plan</i>		
CA.7	<ul style="list-style-type: none"> a. Prior to Start of Construction in the CMA, a Coastal Works CEMP shall be prepared. b. The purpose of the Coastal Works CEMP is to confirm the proposed methodology for works in the CMA and to set out the specific management procedures and construction methods to be undertaken in order to manage potential adverse effects arising from those works. c. The Coastal Works CEMP shall be submitted to the Manager for certification at least twenty (20) working days prior to the anticipated Start of Construction in the CMA in accordance with the process set out in Condition PC.5. 	<ul style="list-style-type: none"> a. This document seeks to fulfil the requirements of the Coastal Works CEMP. b. Section 1.2. c. Noted and Section 2.1.1.
CA.8	All works in the CMA shall be carried out in accordance with the Coastal Works CEMP and ESCP and any SSES CPs prepared in accordance with Conditions EW.3 and EW.5.	Noted.
CA.9	<p>In addition to the details required by Condition CC.2, the Coastal Works CEMP shall include the following information:</p> <ul style="list-style-type: none"> a. Confirmation of the construction methodology, including: <ul style="list-style-type: none"> i. The process for demolition and removal of existing structures; ii. The methods to minimise the discharge of fine sediments to the CMA (e.g. clean material specified at source, floating silt curtains and geotextile fabric); iii. Identification of all construction access points to the CMA and along the foreshore; iv. The methods for the salvage and placement of shingle beach material during construction. These shall be consistent with the methods in the EMP required by Condition EM.6B; v. The methods for the placement of the rock pools and armour units required by Condition EM.15A. vi. The methods for the pre-construction survey for all remnant beach areas. These shall be consistent with the methods in the EMP required by Condition EM.23. vii. Details of all temporary structures in the CMA and their associated construction methodology including the expected duration of occupation; viii. Procedures for the refuelling, maintenance and storage of machinery to avoid discharges of fuels or lubricants to the CMA; ix. Site clean-up following Completion of Construction; and x. Linkages to the CNVMP with details of measures to manage noise and vibration; 	<ul style="list-style-type: none"> a. Section 3 <ul style="list-style-type: none"> i. Section 3.3 ii. Section 6 iii. Section 5.2.3 iv. Section 3.4 v. Section 3.5 vi. Section 5.1.4.1 vii. Temporary structures covered in Enabling Works CEMP V3 and V4 viii. Section 5.3.5 ix. Section 5.4 x. Section 5.3.9. b. Section 5.3.4





Ref	Condition	Location in plan
	<p>b. Details of the quantities, sources and physical (textural and geological) and chemical (bulk chemistry and leaching potential) characteristics of fill materials for the Construction Works in the CMA and the method(s) by which these materials will be deposited; and</p> <p>Details of all practicable steps to be taken to minimise disturbance of the CMA during the Construction Works.</p>	
CA.10	The Manager shall be notified at least twenty (20) working days prior to the Start of Construction in the CMA.	Section 5.1.1.
CA.11	The construction site shall be maintained in good order and any damage and disturbance of the foreshore or seabed caused by plant and equipment during construction shall be remedied as far as practicable.	Section 5.4
CA.12	Within forty (40) working days following Completion of Construction in the CMA, all erosion and sediment control measures, construction materials and temporary staging shall be removed from the CMA in accordance with the certified Coastal Works CEMP.	Section 5.4
<i>Notification – Harbour Master</i>		
CA.13	<p>At least twenty (20) working days prior to the Start of Construction in the CMA, the Wellington Harbour Master shall be notified in writing of the following:</p> <p>a. Details of any construction activities expected to occur below MHWS that do not involve construction from land;</p> <p>b. Details of any activities involving offshore construction and disturbance of harbour signs and structures; and</p> <p>c. The proposed date of Start of Construction in the CMA.</p>	Section 5.1.1.
CA.14	The Wellington Harbour Master shall be consulted in regard to any lighting, mile markers or navigational aids required for the temporary and/or permanent structures in the CMA or the removal of any existing navigation infrastructure.	Section 5.1.1.5
<i>As-Built Plans and Survey – Coastal</i>		
CA.15	Within three months of Completion of Construction in the CMA, a complete set of As-Built Plans shall be provided to the Manager. The As-Built Plans shall include a location plan, a plan which shows the area of coastal occupation, structure dimensions and cross-sections., including the replenished beaches.	Section 5.4.4.
CA.16	A survey plan shall be prepared that shows and defines the areas of land that has been reclaimed, including the location and the position of replenished beaches above MHWS and all boundaries in accordance with the requirements of section 245 of the RMA.	Section 5.4.4.



Appendix C: Construction Air Quality Management Plan





Te Ara Tupua Alliance
Shifting gear to connect past, present and future

Ngā Ūranga ki Pito-One: Construction Air Quality Management Plan

NKP-TAT-000-MPN-PP-NS-000002



ACCEPTANCE				
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Approved by	Eddie Anand	Waka Kotahi Owner Interface Manager		28/02/2023

REVISION SCHEDULE		
Revision Number	Date	Description
<i>Internal Reviews</i>		
A	31/01/2023	Draft CAQMP and internal reviews and Waka Kotahi review
B	21/02/2023	Draft CAQMP for approval
<i>Submission to Council</i>		
1	27/02/2023	Final CAQMP for submission

Disclaimer

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1 Introduction

1.1 Background – the Project

Waka Kotahi NZ Transport Agency (Waka Kotahi) has established the Te Ara Tupua Alliance (the Alliance) that will deliver a safe and connected walking and cycling route between Ngā Ūranga and Pito-One as shown on Figure 1.1. The Alliance is comprised of HEB Construction, Downer NZ, Tonkin + Taylor and Waka Kotahi. The shared path will be located on the seaward side of the existing transport corridor.



Figure 1-1. Project location

The key element of the Ngā Ūranga ki Pito One shared path include:

- Shared path: 4.5km shared path with a 5m wide sealed surface on the seaward side of the Hutt Valley railway line.
- Ūranga (resting or landing places): Six ūranga located at key sites along the shared path's length providing areas for cultural placemaking, planting, landscaping, habitat creation, and gathering, resting, and viewing areas.
- Te Wharepōuri bridge at Ngā Ūranga: A new architecturally designed bridge providing shared path access over the railway.
- A revetment: 2.7km of X-bloc and rock embankment protecting the shared path and ūranga. These are designed with the ability to be modified in the future to adapt to sea-level rise.
- Seawalls: Six MSE seawall segments protecting the shared path, totalling 830m in length located and designed to avoid impact on high value habitat areas.

- Offshore habitats: Two small offshore habitats for coastal bird life, constructed of naturalised rock forms, at least 40m horizontal distance from the shoreline.
- Services: Utilities trench to provide ITS, power, CCTV, counting and VMS services. relocation of existing services and provision of a new KiwiRail traction/switching station building and services.
- Drainage: Culvert extensions, path and bridge drainage, and fish passage where required.
- Honiana Te Puni Reserve: Shared path facilities, Permanent Tawharaū Pods and canopy, water supply and services connections.
- Landscaping, urban design, street furniture including cultural artworks at bridge, Ūranga and Honiana Te Puni Reserve.

1.2 Purpose of the CAQMP

This Construction Air Quality Management Plan (CAQMP) has been prepared to identify measures that will be implemented to mitigate and manage the potential adverse effects on air quality during the construction works associated with the Ngā Ūranga ki Pito One (the Project). The construction works encompasses activities undertaken to construct the Project, this excludes enabling works.

This CAQMP forms part of the construction environmental management plan (CEMP). The purpose of this CAQMP is as follows:

- Ensure that dust emissions from construction is minimised and appropriately controlled;
- Ensure that air quality impacts on surrounding receptors are minimised;
- Keep the local community and regulators informed of activities where required and respond quickly and effectively to issues or complaints;
- Where required, carry out regular monitoring to ensure compliance against air quality criteria; and
- Adequately manage and mitigate potential air quality impacts from the construction.

This CAQMP has been prepared in accordance with the following guidance documents:

- Ministry for the Environment (MfE) Good Practice Guide for Assessing and Managing Dust (GPG AMD)¹;
- Ministry for the Environment (MfE) Good Practice Guide for Assessing and Managing Odour (GPG AMO)²; and
- NZTA's Guide to Assessing Air Quality Impacts from State Highway Projects.

1.3 Statutory requirements

Resource Consents have been obtained for the Project as recorded in the decision of the Expert Consenting Panel under clauses 37 and 40 of the Covid-19 Recovery (Fast-Track Consenting) Act 2020.

On 4 April 2022, a variation to the existing consents was granted by Greater Wellington Regional Council (GWRC) in accordance with section 127 of the Resource Management Act (RMA) 1991. A suite of resource consent conditions were changed as part of this application. This CAQMP is subject to the requirements of the resource consent conditions, consent number EPA210001 for the Project. The relevant consent conditions and permitted activity rule in the GWRC regional air plan pertaining to air quality are presented in Table 1-1 Below

¹ Ministry for the Environment Good Practice Guide for Assessing and Managing Dust, 2016

² Ministry for the Environment Good Practice Guide for Assessing and Managing Odour, 2016



Table 1-1 Air quality requirements of resource consent

Condition Ref	Condition Requirement	Location in report
	<p>Rule 22 of the GWRC – Regional Air Quality Management Plan:</p> <p>Miscellaneous processes</p> <p>Notwithstanding any provisions in Rules 1-21, the discharge of contaminants into air in connection with any industrial or trade processes associated with:</p> <p>(7) Road construction and paving activities (including reconstruction), other than the manufacture of hot-mix asphalt paving mixes, including moveable asphalt plants, and the remediation of asphalt surfaces ("tar burning" [which is prohibited by subclause 8 of the regulations of the National Environmental Standards for air quality])</p> <p>is a Permitted Activity, provided it complies with the conditions below.</p> <p>(i) there is no discharge of particulate matter, smoke, odour, gas, aerosols or vapours from the process, which is noxious, dangerous, offensive or objectionable at or beyond the boundary of the property.</p>	This document
	<p>Rule R27 of the Proposed Natural Resources Plan:</p> <p>The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity, provided the following conditions are met:</p> <p>(a) for the Commercial Port Area shown on Map 51 and Map 52 any discharge into air shall not cause noxious, dangerous, offensive or objectionable odour, dust, particulate, smoke, vapours, droplets or ash beyond the boundary of the Commercial Port Area on Map 51 and Map 52, and</p> <p>(b) for all other areas, the discharge shall not cause noxious, dangerous, offensive or objectionable odour, dust, particulate, smoke, vapours, droplets or ash beyond the boundary of the property.</p>	This document seeks to demonstrate that clause (b) will be complied with.
CC.2	<p>The CEMP shall be prepared having regard to the NZ Transport Agency's Guideline for preparing Environmental and Social Management Plans (April 2014), and shall include the following:</p> <p>(a) Methods for controlling dust and the removal of debris and demolition or construction materials from public roads, paths or places</p> <p>(b) Methods for routine dust and odour monitoring</p>	<p>Section 3.3</p> <p>Section 6</p>
CC.3	<p>The CEMP shall include methods for management of air quality throughout the construction period, in accordance with the Good Practice Guide for Assessing and Managing Dust, Ministry for Environment, 2016 and the Good Practice Guide for Assessing and Managing Odour, Ministry for Environment, 2016, or any subsequent versions.</p>	Section 3.3
PC.12	<p>A record of any complaints received in respect of the Project Construction Works shall be maintained during Construction Works. The record shall include:</p> <p>(a) The name, phone number and address (if known) of the complainant (unless the complainant wishes to remain anonymous);</p> <p>(b) Nature of the complaint;</p> <p>(c) The date and time of the complaint, and the location, date and time of the alleged event giving rise to the complaint;</p> <p>(d) The weather conditions at the time of the complaint (as far as practicable), including wind direction and approximate wind speed if the complaint relates to air quality, odour or noise and where weather conditions are relevant to the nature of the complaint;</p>	Section 0

Condition Ref	Condition Requirement	Location in report
	(e) Any other activities in the area, unrelated to the Project, that may have contributed to the complaint, such as construction undertaken by other parties, fires, traffic accidents or any unusual conditions; (f) Measures taken to respond to the complaint or confirmation of no action if deemed appropriate; (g) The outcome of the investigation into the complaint; and (h) A record of the response provided to the complainant.	

1.4 Sustainability

The Alliance is seeking an Infrastructure Sustainability Council of Australia (ISC) Infrastructure Sustainability (IS) Rating. Further details can be found in the main works Construction Environmental Management Plan (CEMP) and Sustainability Management Plan. Sustainability requirements that relate directly to this CAQMP are included in **Appendix A**. These requirements are embedded within the Management Plans to ensure that sustainability is a key focus and 'the way we do things'.

In some cases, the IS requirements and sustainability goals enhance the designation and consent requirements.

1.5 Environmental performance

As required by the resource consent conditions, the purpose of this CAQMP is to ensure that construction air quality effects are kept to a practical minimum, recognising the sensitivity of the environment within which the works are being undertaken.

The key air quality compliance requirement for construction activities is that dust and other air discharges from the activities do not cause offensive or objectionable levels of dust or other contaminants beyond the site boundary.

A range of air quality management and monitoring measures are specified in Section 6 and Section 6 of this CAQMP to minimise the potential for adverse air quality effects and avoid the occurrence of offensive or objectionable dust or contaminants in the surrounding environment.

These measures include monitoring requirements and response actions, which are intended to provide operational feedback to improve air quality management.

1.6 CAQMP Review and Updates

This CAQMP is a live document that will be reviewed and updated at least annually, or as a result of a material change to the main works, identification of increasing dust levels or potential for nuisance identified in monitoring required under this CAQMP, or to address unforeseen adverse air quality effects arising from construction, or unresolved complaints. Refer to Section 2.1 of the CEMP for further detail on the review and updating process.



2 Works description

2.1 Overview of works

The Project involve construction along several locations concurrently within the Project alignment at any one time. The key construction elements are as follows:

- Construction of shared path bridge;
- Earthworks associated with the shared path formation on land, including preparatory works such as scraping topsoil and removing other existing material;
- Earthworks associated with the construction of new land for the shared path and ūranga in the coastal marine area, including culvert extension work;
- Formation of rock revetments, seawalls and rock groynes that will support the shared path and Ūranga;
- Bulk material placement of general fill, gravel, and rock riprap used to establish and build coastal marine features; and
- Construction of built form within Honiana Te Puni Reserve comprising of the Integrated Clubs Building and the Tāwharau Pods (western location).

The Project also involves a suite of enabling works that are subject to an Enabling Works Construction Environmental Management Plan (CEMP). The management of dust associated with the enabling works has been detailed in the Enabling Works CEMP. Enabling works include but are not limited to the construction of the barge landings, offshore habitats, the Tāwharau Pods (eastern location), yard establishment, temporary rail crossings and ground investigations.

2.2 Construction methodology

The Project includes construction works within the coastal marine area and on existing land. The overall length of the Project can be largely broken down into a series of repeated activities. These include (but are not limited to) sections of sea walls, revetments, and piling, two offshore habitats, bridges and finishing works including the shared user path itself including all associated elements such as lighting, fencing, signage.

Construction will occur from both the south and the north simultaneously during the construction period until mid-2026. The construction staging, and methodologies are described in detail in Section 3 of the CEMP.



3 Environmental setting

This section of the CAQMP describes the environment surrounding the Project in terms of meteorological influences on the transport of air contaminants and sensitivity of adjacent activities to those discharges.

3.1 Site description

The Project area is situated adjacent to State Highway 2 (SH2), between Ngā Ūranga and Pito-One. Insufficient land currently exists along sections of the route to form, develop and protect the shared path and its users. Construction works therefore involve the creation of new land along sections of the coastal edge to form the shared pathway.

Two areas have been identified as temporary construction yards/laydown areas. The Ngā Ūranga Construction Yard is located on KiwiRail and Waka Kotahi owned land at Ngā Ūranga, and the Pito-One Construction Yard located at Honiana Te Puni Reserve.

The construction yards will include areas for general fill, clean fill aggregate, large revetment rocks, 'architectural' rocks and bridge construction materials. In addition to the construction yards, construction material may also be stockpiled within the Project footprint as construction progresses.

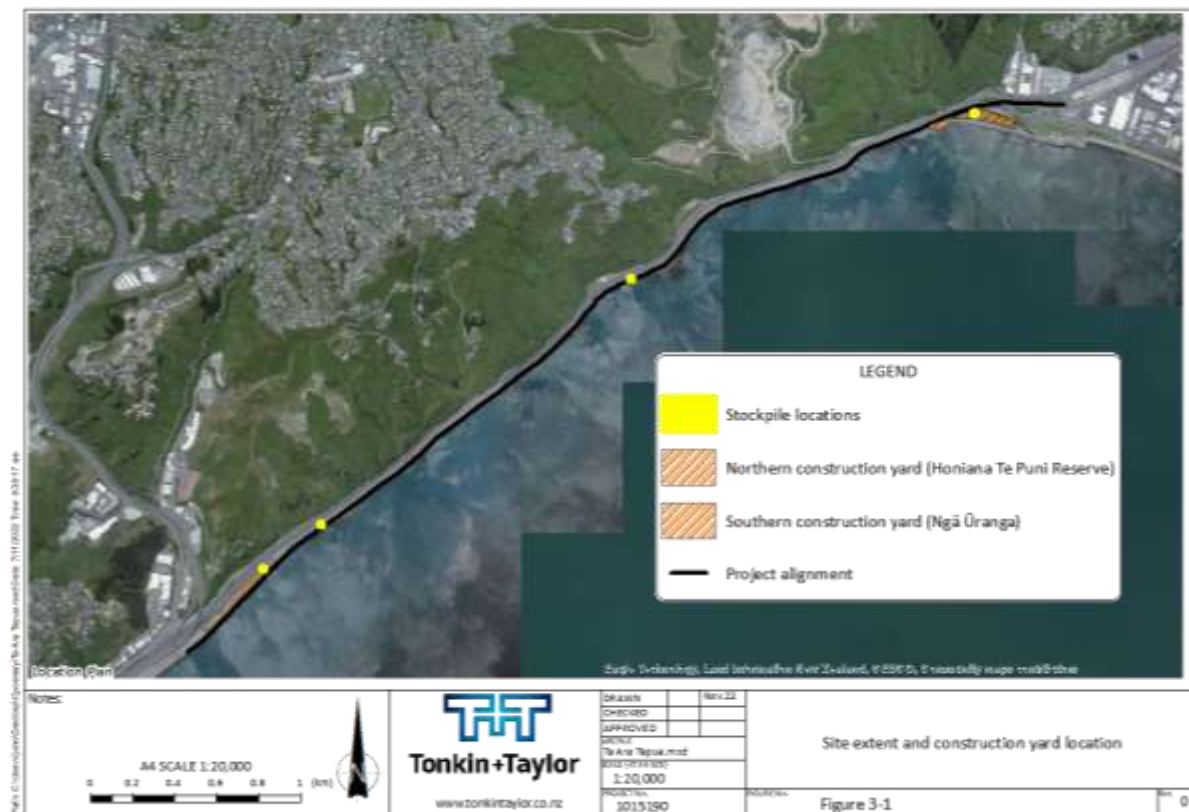


Figure 3-1 presents the location of stockpiles and construction yards along the Project alignment.

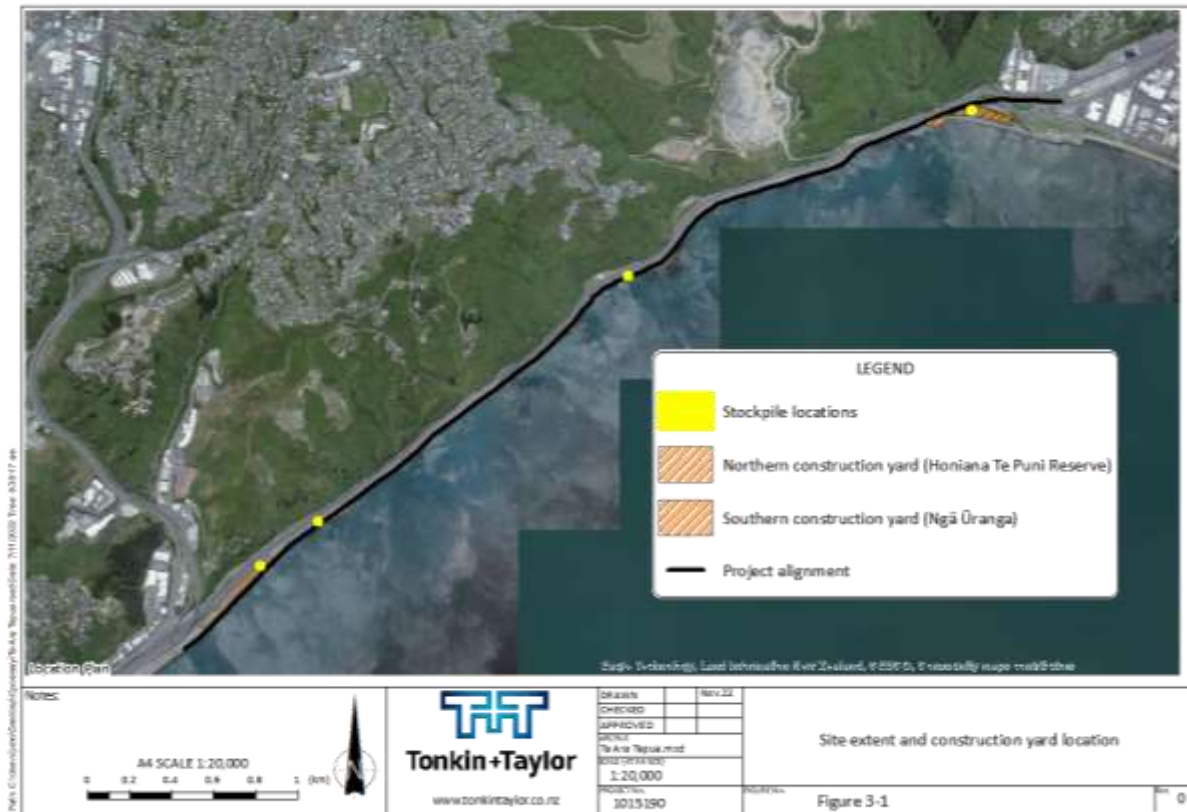


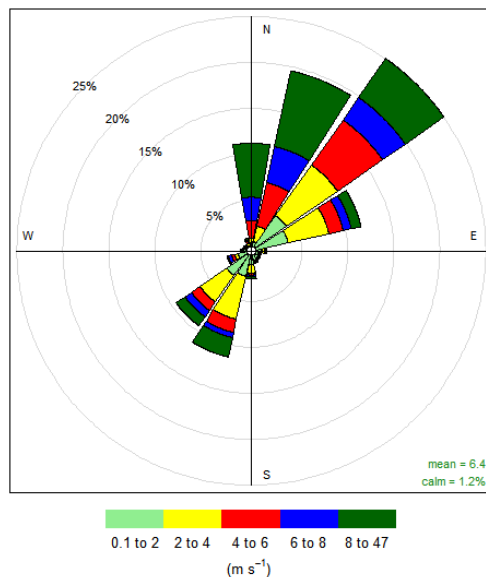
Figure 3-1 Site and extent of work

3.2 Local meteorology

The nearest weather monitoring station is located at Shandon Golf Course, approximately 4.5 km east-northeast of the Project and is operated and maintained by GWRC. Given the proximity to the Project, wind data collected at the station is considered to be representative of the meteorological conditions experienced along the alignment.

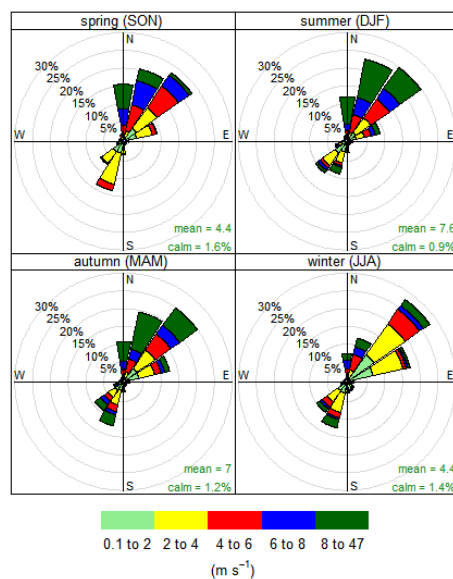
Figure 3-2 and Figure 3-3 presents the distribution of average hourly wind and the seasonal wind distribution between 1 January 2019 and 31 December 2021. The wind roses show a dominant wind pattern that is aligned with the orientation of both the Hutt Valley (in which the weather station is located) and the bluff adjacent to the Project.

Based on data presented in Figure 3-2 and Figure 3-3, strong winds (wind speeds greater than 5 m/s) are predominantly from the north, north northeast and northeast and are most significant during the summer and autumn months. Light winds (winds less than 3 m/s) are observed most frequently from the northeast, east northeast and southwest and occur more commonly observed during the autumn and winter months.



Frequency of counts by wind direction (%)

Figure 3-2 Windrose for the period between 1 January 2019 and 31 December 2021 from Shandon Golf Club



Frequency of counts by wind direction (%)

Figure 3-3 Seasonal wind roses for the period between January 01 2019 and 31 December 2021 from Shandon Golf Club



In addition to strong winds, it is also important to consider rainfall when assessing dust generation. Dust emissions are likely to be more prevalent during dry, windy conditions and are conversely suppressed under wet conditions. Rainfall data measured at Shandon is presented in *Figure 3-4*. Drier months are expected during the summer months when wind speeds are typically stronger. Strong summer winds are most frequently observed from the north to northeast directions which will transport fugitive dust toward receptors south and southwest of the Site.

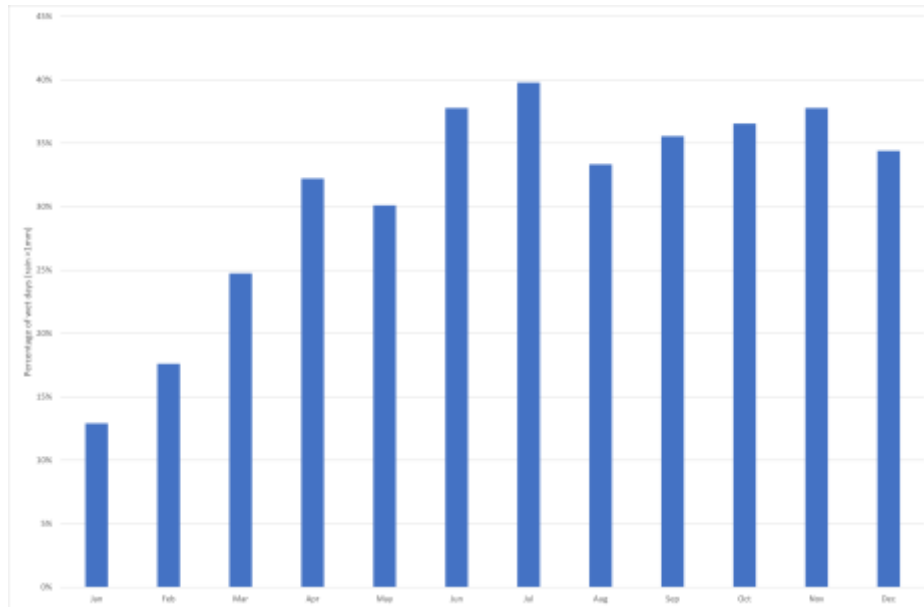


Figure 3-4 Percentage of wet days (rain exceeding 1 mm) between January 2019 and December 2021 at Shandon Golf Club

3.3 Sensitive receptors

The risk of exposure to sensitive receptors to dust emissions depends on the following factors:

- Proximity of sensitive receptors to construction activities that could give rise to dust emissions;
- The scale and nature of the dust emissions; and
- Frequency and duration of meteorology conditions that are likely to transport dust towards sensitive receptors (ie un mitigated dust events are exacerbated by winds greater than 5 m/s).

The Site is located within the Wellington City Council (WCC) Open Space B zone and Hutt City Council (HCC) Special Recreation zone. Neighbouring zones include residential (WCC: Outer Residential), commercial (HCC: Petone Commercial Area 1), rural (WCC: Rural) and business (HCC: General Business).

Examples of nearby activities that may be sensitive to dust and other air contaminants include:

- Commercial premises along Hutt Road and The Esplanade;
- Recreational sites along The Esplanade;
- Industrial premises along Cornish Street and Pito-One Road;
- Bars and restaurants along the Esplanade, particularly where premises include outdoor dining or entertainment areas.
- Pedestrians and cyclists accessing Honiana te Puni reserve; and
- Road users and cyclists along the existing cycleway and SH2.

The majority of the Project runs along the seaward side of the existing rail corridor where the occupation of the road and cycleway by members of the public is expected to be very infrequent and intermittent. However, adjacent land use at Pito-one comprise of a range of commercial and recreational activities where occupation is likely to be more frequent and consistent and sensitivity to dust is expected to be moderate to high. Pedestrian and cyclist access within Honiana te Puni reserve is permitted during construction works (although via a different route), and therefore particular dust mitigation will need to be placed in and around the northern construction yard that is located nearby.

4 Discharges to air

4.1 Dust emissions

The main discharge to air from the construction activities will be dust. Dust has the potential to cause nuisance or soil property if deposited in sufficient quantities in the environment.

Fine particles present in dust emissions have the potential to affect respiratory health while suspended in air. Fly ash and cement used in grout and concrete removed from excavation areas may contain respirable crystalline silica (RCS), which can also have respiratory health effects with sufficiently high exposure.

The main sources of nuisance dust emission along the project are:

- Demolition activities (such as knocking down and breaking up of building material including plasterboard and blockwork, and cutting, breaking and crushing of concrete associated with the demolition of the Wellington Rowing Club and Water Ski Club);
- Cut and fill operations;
- Excavation / milling of base excavation;
- Piling and drilling;
- Handling of spoil, aggregate and other solid materials;
- Wind erosion of spoil and other stockpiled material;
- Placing rip rap armouring; and
- Movement of vehicles over unsealed surfaces (this includes trucks, loaders and excavators required for spoil removal, and the delivery of construction materials).

The major factors that influence dust emissions are:

- Wind speeds across the Project - pickup of dust from exposed surfaces occurs at windspeeds above 5 m/s and increase as wind speeds rise;
- The percentage of fine particulate in the material;
- Moisture content of material;
- The area of exposed surfaces;
- Disturbances such as vehicle movements and material handling activities; and
- The height of the dust source above the surrounding ground level.

4.2 Other minor discharges to air could include:

- Combustion emissions from vehicles, equipment or stationary engines on site, which can affect respiratory health in the environment with sufficient exposure;
- Odour and emissions from spray painting/coating of bridges and other structures; and
- Odour from excavation or disturbance of contaminated soil (if encountered), which has the potential to cause nuisance.



5 Management procedures

5.1 Approach to air quality management

A range of routine measures will be used to manage and mitigate the effects of discharges of dust, odour and construction engine exhaust emissions during the main works. An adaptive approach to management of dust, odour and exhaust emissions, including additional mitigation may be required if:

- Monitoring indicates that abnormal discharges of dust are occurring;
- Weather conditions are changing such that dust or odour discharges are more likely; and / or
- Complaints are received regarding discharges of dust, exhaust emissions or odour.

If the available mitigation methods are unsuccessful in controlling discharges (i.e. dust and odour) that cause significant adverse effects on receptors beyond the site boundary, the activities causing the discharge shall be suspended until adequate mitigation can be put in place.

5.2 Dust mitigation measures

Dust management measures are specified in Table 5-1 and will be used as required across the Project, depending on the construction activities undertaken, weather conditions, and proximity to sensitive receptors. The list is not necessarily exhaustive, and additional methods may be implemented during construction to provide further control.

Alternative methods may be employed after the effectiveness of those methods is demonstrated and this CAQMP should be updated accordingly.

Table 5-1 Dust mitigation procedures

Source of dust	Control
Demolition	<ul style="list-style-type: none"> ▪ Use of water sprays³ or fogging systems to dampen material prior to and during demolition whenever wind is blowing towards residential or commercial/business zoning. ▪ Only wet cutting of concrete is to be undertaken. ▪ Any breaking of concrete should be done under wet conditions (such as a water spray or fog directed at where the breaking is occurring).
Stockpiles (including material placement and removal)	<ul style="list-style-type: none"> ▪ Store stockpiled material containing a high content of fine material indoors or under cover where practicable. ▪ Locate and orientate outdoor stockpiles to maximise wind sheltering and separation from sensitive off-site activities as far as practicable. ▪ Dampen, cover or stabilise inactive stockpiles if they are producing visible dust emissions. ▪ Limit the height of stockpiles to reduce wind entrainment as far as practicable. ▪ Minimise handling of stockpiled material and drop heights to stockpiles during unloading to decrease potential for dust generation.
Handling of dry material	<ul style="list-style-type: none"> ▪ Avoid handling (including loading or unloading) of material during windy conditions in locations where dust may be emitted beyond the site boundary, where practicable. ▪ Cover loads of fine materials. ▪ Minimise drop heights when loading and unloading dry material.
Unpaved surfaces, such as construction yards.	<ul style="list-style-type: none"> ▪ Limit the amount of exposed surfaces as much as possible. ▪ Use water sprays or watering trucks to dampen dry exposed surfaces ▪ Where practical, compact unconsolidated surfaces to minimise dust generation. ▪ Stabilise cleared areas not required for construction, access or for parking if liable to cause excessive dust during windy conditions, methods may include placing metal or other coarse material on surfaces.

³ Water will be sourced from hydrants during works with approval from the asset owner. A monitoring device will be used to maintain a record of the quantity of water taken.



Source of dust	Control
Vehicle movements on sealed and unsealed roads	<ul style="list-style-type: none"> ▪ Limit vehicle speeds to 20 km/h. ▪ Limit load sizes to avoid spillages. ▪ Cover loads of fine materials leaving or entering the site. ▪ Minimise on-site travel distances through appropriate site layout and design. ▪ Minimise mud and dust track out from unsealed areas to sealed areas by using wheel cleaning facilities at site exits to sealed roads. ▪ Wheels of all trucks exiting the site to public roads are to be inspected and washed as required to prevent tracking of material off-site. ▪ Any material identified to be tracked onto public roadways during regular inspections (or via notification from the public) is to be cleaned with a vacuum sweeper truck. ▪ Sealed access routes are to be cleaned with a vacuum sweeper truck on a daily basis (at a minimum). ▪ In dry conditions (e.g. less than 1 mm of rain in the preceding 48 hours), maintain unsealed surfaces in regular use in damp condition through surface watering (e.g. with water carts or fixed irrigation). ▪ If water suppression is ineffective, synthetic dust suppressants (excluding used oil-based suppressants) may be used as an alternative.
Earthworks and construction activities	<ul style="list-style-type: none"> ▪ Drop heights of materials to be minimised to reduce dust generation. ▪ Monitor and manage earthworks activities to limit dust generation during dry or windy weather conditions. ▪ Stabilise exposed areas not required for construction, access or parking, along with completed fill and spoil areas as soon as practicable. ▪ Maintain surfaces of active earthworks areas in damp condition during excavations in dry weather when located within 100 m of residential or commercial/business zoning. ▪ Remove excavated spoil from site on a regular basis.
Rock drilling	<ul style="list-style-type: none"> ▪ Drills used on rock or concrete in exposed areas should be fitted with dust suppression mechanisms where practicable.
Miscellaneous	<ul style="list-style-type: none"> ▪ Planning of site layout so that dust causing activities are located away from sensitive boundaries where practicable. ▪ Site personnel trained in dust management controls. ▪ Monitoring of site conditions (weather/soil conditions) to anticipate and prevent dust effects. ▪ Limiting operations which have the potential to cause high dust during high wind events. ▪ Use of water cart and sprays to keep surfaces damp as required near sensitive receptors. A critical part of this control measure is identification of a sufficient water supply at the site for this purpose with adequate volume. ▪ Use of wind break fences. ▪ Cleaning paved surfaces if affected by tracking of transported dust.

5.3 Equipment malfunction

If construction equipment fails and causes accidental discharges of dust or other air contaminants, it will be shut down immediately and the fault repaired and tested prior to being allowed to continue operation.

The location, duration and time of any dust discharge caused by equipment failure will be recorded in the daily dust inspection log sheet (provided in **Appendix B**).



5.4 Review of dust mitigation

When site operators are alerted to a potential off-site dust nuisance through the monitoring techniques described in Section 6.1 of this CAQMP, or as a result of a complaint from a third party, the Site Engineer, Environmental Advisor or their delegate will undertake a review of site activities to determine the source of the dust and implement further mitigation measures as required in order to reduce the dust generation to acceptable levels. As appropriate the Site Engineer, Environmental Advisor or their delegate will notify the Partnership, Environment, Planning and Communications (PEP-C) Manager.

In general, the additional mitigation will be those measures set out in Table 5-1. Once the additional mitigation has been implemented the Site Engineer, Environmental Advisor or their delegate will review the monitoring data to ensure that it has been effective.

5.5 Odour Control During Contaminated Material Handling

Odour may be emitted if contaminated soil is encountered during the excavation works, depending on the nature of the contamination.

Odour emissions will be monitored in accordance with Section 6.3 of this CAQMP during the excavation of contaminated material. The following techniques should be applied as necessary:

- Limiting the time that the odorous material in the excavation is exposed;
- Applying inert, non-odorous fill material to cover exposed odorous material where excavations are to be left incomplete overnight (to a minimum depth of 150 mm); and
- Removing excavated odorous material from site as quickly as possible in covered trucks.

As there is a potential that exposed odorants may also be hazardous air pollutants and their inhalation could potentially present a health risk, the procedures outlined in Contaminated Land Management Plan for unexpected discovery of contamination should also be followed.

If significant odour is detected and the odorous material cannot be removed quickly, the odorous material shall be covered with uncontaminated soil or other suitable material to suppress odour emissions, and work in that area suspended until suitable mitigation measures can be put in place.

5.6 Control of Engine Exhaust Emissions

The following key actions shall be carried out to manage potential off-site impacts of exhaust emissions from vehicle and stationary engines:

- All engines used on the site will be maintained at least in accordance with manufacturers' requirements;
- Where excessive exhaust smoke is identified from any engine, it is to be serviced as soon as is practicable and the vehicle or piece of equipment is to remain out of service until such maintenance has been completed; and
- Unless warm-up or turbo maintenance procedures require it, construction vehicles should not to be left idling while parked or unattended.



5.7 Dust Contingency Measures

As discussed in Section 5.2, a range of standard dust controls will be used to manage and mitigate dust effects during construction of the Project. Additional mitigation may also be required in the event that:

- Monitoring indicates that significant dust emissions are occurring;
- Weather conditions are changing such that dust emissions are more likely; and / or
- Complaints are received regarding dust.

In the event of significant on-going dust emissions that are unable to be mitigated through the measures described in Table 5-1, the PEP-C Manager (or delegated person) shall investigate the implementation of dust contingency measures. The suggested dust contingency measures are presented in Table 5-2.

Table 5-2 Dust contingency measures

Source	Contingency measure
Dust generating activities undertaken at the northern construction yard and at any location within 100 m of sensitive receptors.	<ul style="list-style-type: none"> ▪ Install windbreak fences around dust generating activities where practicable. ▪ Additional visual inspections of dust generating activities for visible dust emissions beyond the site boundary. ▪ Ensure availability of water as dust suppressant should visible emissions arise.
Dust discharges cause excessive deposition / soiling at sensitive receptors	<ul style="list-style-type: none"> ▪ Stop activities that are generating dust until mitigation is reviewed and additional mitigation is in place. ▪ Report to PEP-C Manager to initiate an investigation and any remedial action as necessary.
Forecast high winds (greater than 5 m/s) and dry conditions	<ul style="list-style-type: none"> ▪ Limit the activities that generate dust within 200 m of downwind sensitive activities. ▪ Additional visual inspection of exposed areas and activities. ▪ Assess the need for additional controls such as increased water application rates.
Forecast high winds (greater than 10 m/s) and dry conditions	<ul style="list-style-type: none"> ▪ Stop activities that generate dust within 200 m of downwind sensitive activities until wind eases.
Visible dust discharges from stockpiles / areas of uncovered soil near sensitive receptors	<ul style="list-style-type: none"> ▪ Dampen stockpile or exposed area of soil. ▪ Cover or stabilise area to reduce dust generation.

6 Monitoring requirements

6.1 Dust monitoring

The overall approach to dust control is based on visual monitoring; good management of the construction areas; and an appropriate response to any of the triggers outlined in Table 5-2 or complaints received.

Good practice focusing on proactive measures will aid in avoiding significant dust emissions, however if dust emissions do occur, the monitoring will help to identify such occurrences and enable a prompt response.

6.2 Visual inspection and monitoring methods

Visual monitoring of dust across all construction areas will be undertaken on a daily basis, or more frequently if conditions change. Roles and responsibilities are identified in Section 10 of this report.

Weather forecasts should also be checked daily (wind speed, wind direction and rainfall) to assist in managing site activities and implementing the appropriate dust controls.

Table 6-1 below describes the visual dust monitoring activities to be undertaken during construction. In the event that dust deposits or visible dust plumes are observed at or beyond the site boundary, the findings of the visual inspections are to be recorded in the daily dust inspection log as set out in **Appendix B**.

Table 6-1 Visual dust monitoring programme

Monitoring Activity	Frequency
Inspect land adjacent to the site, construction exits and adjoining roads for the presence of dust deposition and/or accumulation of dust material.	Daily
Observe weather conditions including wind and rain.	Daily and as conditions change
Inspect all exposed un-stabilised surfaces for dampness and that the extent of those areas is being minimised.	Daily and as conditions change
Inspect stockpiles for dampness and height of no more than 3m (or appropriately stabilised).	Daily and as conditions change
Inspect dust generating activities for effectiveness of dust management measures and avoidance of visible dust emissions beyond the boundary of the site.	Daily and as new activities commence
Inspect watering systems (sprays and water carts) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly
Inspect dust generating activities and check unsealed surfaces are being maintained in a visibly damp condition, and dust and particulate matter emissions are minimised	In wind speeds above 5 m/s
Inspect wheels of all trucks exiting the Site to public roads for evidence of tracked material (to be washed and removed as required)	All truck departures
Check for dust on local roads being used to access the site.	Daily
Inspect vehicle exits to ensure that wheel inspection and washing is effective and dust or sediment laden water is not being tracked off site by vehicles.	Daily
Inspect sealed vehicle access routes within the Site for deposition of material (to be removed via vacuum sweeper truck)	Daily
Inspect dust suppression measures this may include watering systems (sprays and water carts) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly

6.3 Odour Monitoring

Odour monitoring (observations) will be undertaken when it is considered likely that odorous material may be encountered (such as contaminated soil materials) during excavations. The decision to undertake monitoring by a suitable experienced odour observer will be made by the Environment and Sustainability Manager. The frequency of odour observations will be dependent on the nature/scale of the source, location in relation to sensitive receptors, and meteorological conditions during exposure. Odour observations will occur:

- When potentially odorous contaminated material is excavated and loaded onto trucks; and
- When odour complaints have been received or odour is detected by main works staff.

The PEP-C Manager will ensure that a trained odour scout is available to undertake odour observations as required. Monitoring will involve the odour observer being positioned downwind of the works and assessing odours on the intensity scale set out in Table 6-2.

Where odours are identified as being “Distinct” and above, and the odour characteristic unpleasant, mitigation measures will be implemented. All observations will be recorded in the Odour survey log (refer Appendix B of this CAQMP).

Table 6-2 Odour intensity scale

Intensity Scale	Criteria
0	No odour
1	Very weak
2	Weak
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

The odour observer will reassess the level of odour once the mitigation measures have been implemented. If the odours are still ‘distinct’, further mitigation will be implemented, and / or the works halted until more conducive meteorological conditions are present (i.e. not blowing towards the sensitive receptor).

If it is suspected that sources upwind of the works are responsible for any odour, the odour observer shall make appropriate observations and document these also.



7 Complaints

Although the mitigation measures described in this CAQMP are aimed at avoiding and minimising discharges to air, complaints may be received by members of the public. It is important to ensure that any complaints are recorded and promptly investigated to identify and resolve the cause of the complaint. The requirements and procedures relating to complaints are detailed in full in the Stakeholder and Communications Plan as well as the CEMP. The procedures are summarised below.

7.1 Receiving and recording complaints

A complaint may be received from a member of the public via the following:

- Direct call to the 0800 number.
- Complaint received by WCC, HCC or GWRC which notifies the Alliance of the complaint.
- Written or email correspondence.

In all circumstances, correct and accurate information needs to be recorded by the person receiving the complaint in order to help investigate the cause of the complaint, and ensure appropriate mitigation has or will be undertaken.

Any complaints received should be recorded in a complaints file, and an investigation undertaken as outlined in the CEMP and Stakeholder and Communications Plan. The following guide should be followed when a complaint is received:

- Record the details provided about the incident by the complainant.
- The name and contact details of the person(s) who raised the complaint (unless they elect not to provide this).
- Acknowledge receipt of the concern or complaint and assure that an initial response shall be undertaken within 24 hours of receiving a complaint and resolved as soon practicable.
- Known construction activities at the time and in the vicinity of the complainant during the concern or complaint period.
- Remedial actions undertaken (if any) and the outcome of these, including monitoring of the activity, to ensure that dust mitigation measures are effective in controlling dust emissions, and that there are no significant impacts on the surrounding environment, to the satisfaction of Auckland Council and the complainant.
- Weather conditions at the time of the concern or complaint, including wind direction.
- Reporting of the investigation in the complaints file.

7.2 Investigating complaints

The investigation of all complaints relating to air discharges will involve the following:

- Information about the incident as described by the complainant.
- Weather conditions at the time of the complaint, including wind direction and speed, and rainfall (if any).
- Reporting the findings and recommendations.
- Actions and time taken to close-out complaint.
- Communication with the complainant.
- Ensure reporting of the investigation is recorded in the complaints file.

An investigation of the complaint will require the Site Engineer or delegated staff member to go around the whole site and make visual observations about activities occurring on site. This may also include going to the location where the complainant observed the impact.

The site health and safety procedures must always be followed during the complaint investigation procedure.



8 Environmental training

All works staff (contractors and subcontractors) will undergo general environmental awareness training and training about their responsibilities relating to this CAQMP. Training requirements are described in full detail within the CEMP. Specific training requirements relating to this CAQMP are outlined in Table 8-1

Table 8-1 CAQMP specific training requirements

Training Requirements	Frequency	Attendance
Introduction to the on-site monitoring equipment, visual inspection procedures, odour monitoring procedures, air quality management measures and dust risk assessment procedure	As required and during new staff induction	Site Engineer, PEP-C Manager, delegated staff member and Site Engineers
Responding to dust monitoring trigger alarm alerts	As required and during new staff induction	Site Engineer, PEP-C Manager, delegated staff member and Site Engineers
Investigations in response to complaints regarding dust and air quality concerns	As required and during new staff induction	Site Engineer, PEP-C Manager, delegated staff member and Site Engineers

9 Record keeping

Construction activities can be affected by several different external and internal factors, such as weather conditions or equipment malfunction, which can contribute to an increase in dust emissions. Various control and mitigation measures will be carried out on-site to prevent such effects, and monitoring and inspection procedures will be used to assess the level of dust emissions both on the main works site and beyond its boundary. Recording relevant monitoring and inspection results, as well as the conditions of external and internal factors, can help assess if control measures are being effective, and to define appropriate corrective or preventive actions in case any undesirable effects are detected.

The procedures for recording air quality inspections are detailed below:

- The Environmental Advisor (or delegated person) will fill out a dust inspection log (refer **Appendix B**) in the event of visible dust emissions at or beyond the boundary of the site and maintain the record on site.
- The aim of the dust inspection log is to clearly identify additional mitigation measures that have been, or are required to be, implemented onsite and to make auditing simpler to reduce the likelihood of the same activity resulting in a reoccurrence.
- The following information will be recorded in the dust inspection log:
 - Results of the visual inspections of dust emissions (refer Section 6.2) including observations of deposited dust or visible dust emissions at or beyond the boundary of the site;
 - Details of possible causes and corrective/preventative measures taken;
 - General weather conditions during the day (i.e. windy, calm, warm, rain etc.); and
 - The date and signature of the person entering the information.



10 Roles and responsibilities

The key management roles in relation to environmental management during construction are outlined in the CEMP. A key contacts list will be provided to GWRC, HCC and WCC. Specific roles relating to this CAQMP are detailed in Table 10-1.

Table 10-1: CAQMP Environmental Management Roles

Organisation	Role	Responsibilities
The Alliance	Alliance Project Manager	Overall responsibility for site environmental management which includes this CAQMP.
	PEP-C Manager or delegated staff member	Responsibility for ensuring that site environmental management is implemented and adhered to at all times, including the measures of this CAQMP.
	Environmental Advisor	Reporting on environmental performance. Inspection of works to assess compliance with the CAQMP and sub-plans. Monitoring of the effectiveness of dust and odour management. Fill out a dust inspection log (refer Appendix B) in the event of visible dust emissions at or beyond the boundary of the site and maintain the record on site. Assess requirement for alternative dust management approach. Update and maintain the environmental portion of the Project Risk Register. Assess the requirement for odour monitoring.
	Construction Manager or delegated staff member	Report to The Alliance any changes to construction techniques or natural environmental changes which require alterations to existing consents or new resource consents. Maintain Daily Logs and Complaint Records. Training of all staff including subcontractors.
	Site Engineers and/or Supervisors*	Supervise subcontractors to ensure implementation of environmental controls. Undertake daily site inspections and environmental monitoring. Coordinate and implement mitigation actions (e.g. in relation to trigger values exceedances or complaint). Ensure environmental erosion and sediment control works are installed and maintained. Visual monitoring. Ensure all staff are aware of environmental requirements and management measures are implemented and maintained to ensure ongoing effectiveness.
Greater Wellington Council	Monitoring and Compliance Team	Approve the CEMP, including the CAQMP and other sub-plans. Auditing to assess that compliance with the CAQMP.

The Construction Manager will identify who undertakes the role / inspections.

Appendix A IS Requirements

The Project is targeting a Commended IS rating, the air quality component to the overall rating is Level 1. Table A 1 identifies the IS Credit Requirements relevant to this CAQMP and where they are addressed in the document.

Table A 1 ISCA requirements

Credit	Requirement	Relevant section
DIS-4 Level 1	Measures to minimise adverse impacts to local air quality identified and implemented	Section 6
DIS-4 Level 1	Monitoring of air emission and/or quality is undertaken at appropriate intervals	Section 0
DIS-4 Level 1	Monitoring of air emission and/or quality is undertaken in response to complaints	Section 0

Appendix B Daily dust inspection log



DAILY LOG FORM

Date: ___/___/___ Mon Tue Wed Thu Fri Sat Sun

VISIBLE DUST EMISSIONS

Source	Level*	Colour/Opacity	Time	Weather Cond. <small>(i.e. rain, windy, calm)</small>	Wind Speed / Wind Direction <small>(e.g. "7 m/s / NE")</small>
_____	_____	_____	:_____	_____	/_____
_____	_____	_____	:_____	_____	/_____
_____	_____	_____	:_____	_____	/_____
_____	_____	_____	:_____	_____	/_____
_____	_____	_____	:_____	_____	/_____
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_____	_____	_____	:_____	_____	/_____
_____	_____	_____	:_____	_____	/_____

*Levels (extent) of visible dust emissions:

- (1) Minor visible emissions (<5m from source);
- (2) Moderate visible emissions (<30m from source);
- (3) Major visible emissions (>30m from source).

INVESTIGATION AND RESPONSE

Date event was investigated: ___/___/___ Person responsible for investigation and response: _____

Possible cause(s):

- Dust from wind erosion of exposed ground
- Watercart not used properly
- Exceedance of speed limit in unpaved surface
- Materials not handled or stored properly
- Loading/Unloading not carried out properly
- Other _____

Corrective actions:

Date: _____ Description: _____
 ___/___/___ _____
 ___/___/___ _____
 ___/___/___ _____

Preventive actions:

Date: _____ Description: _____
 ___/___/___ _____
 ___/___/___ _____
 ___/___/___ _____

VEHICLES AND MACHINERY – PRESTART CHECK

Equipment identification	Excessive or prolonged visible emissions observed?	If yes, describe action taken (e.g., equipment repaired or removed from site within 24 hours):
_____	_____	_____
_____	_____	_____
_____	_____	_____

Person responsible for the above information:

Name: _____ Job Title: _____ Signature: _____ Date: ___/___/___



Appendix C Odour survey sheet



Odour character descriptors	
Code	Descriptor
1	Fragrant
2	Perfumy
3	Sweet
4	Fruity
5	Bakery (fresh bread)
6	Coffee – like
7	Spicy
8	Meaty (cooked)
9	Sea/Marine
10	Herbal, green, cut grass
11	Bark-like
12	Woody, resinous
13	Medicinal
14	Burnt, smoky
15	Soapy
16	Garlic, onion
17	Cooked vegetables
18	Chemical
19	Etherish, anaesthetic
20	Sour, acid, vinegar
21	Like blood, raw meat
22	Rubbish
23	Compost
24	Silage
25	Sickening
26	Musty, earthy, mouldy
27	Sharp, pungent, acid
28	Metallic
29	Tar-like
30	Oily, fatty
31	Like gasoline, solvent
32	Fishy
33	Putrid, foul, decayed
34	Paint-like
35	Rancid
36	Sulphur smelling
37	Dead animal
38	Faecal (like manure)
39	Sweet odour
40	Other – please describe

Scale of odour intensity	
No.	Intensity
6	Extremely strong
5	Very strong
4	Strong
3	Distinct
2	Weak
1	Very weak
0	No odour

Land Beaufort wind scale		
B. No.	Description	How to recognise
0	Calm	Smoke rises straight up
1	Light air	Smoke drifts
2	Light breeze	Wind felt on face; leaves rustle
3	Gentle breeze	Flags flap; twigs move all the time
4	Moderate breeze	Papers blow; small branches move
5	Fresh breeze	Small trees sway
6	Strong breeze	Large branches move, wind whistles
7	Near gale	Whole trees sway

Appendix D: Schedule of updates

Date	Person responsible for amendments	Reason for amendments	Summary of amendments
20/04/2023	Rubie McLintock / Ed Breese / Sevi Hartley	In accordance with the comments provided by GWRC.	Please refer to the memorandum provided (NKP-TAT-000-MEM-PP-NS-000002)



Appendix E: General arrangement plans

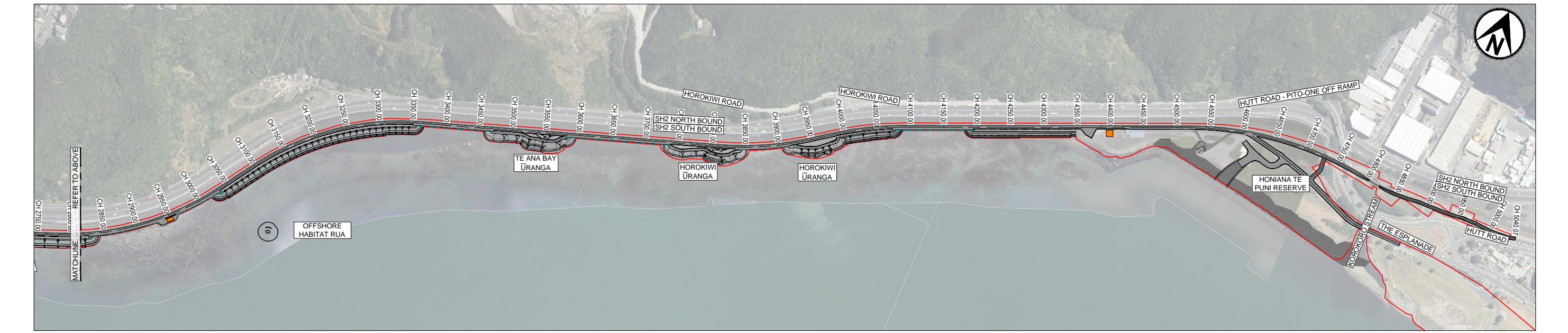
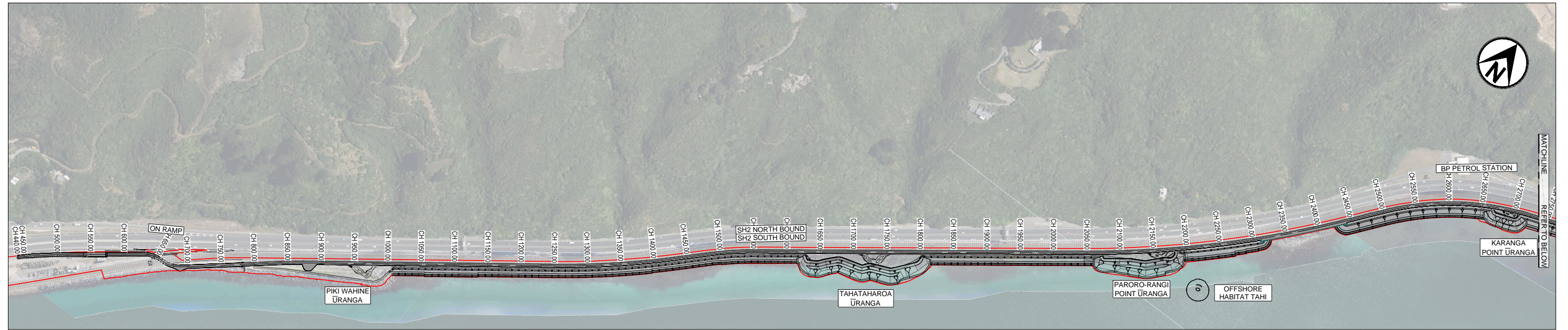
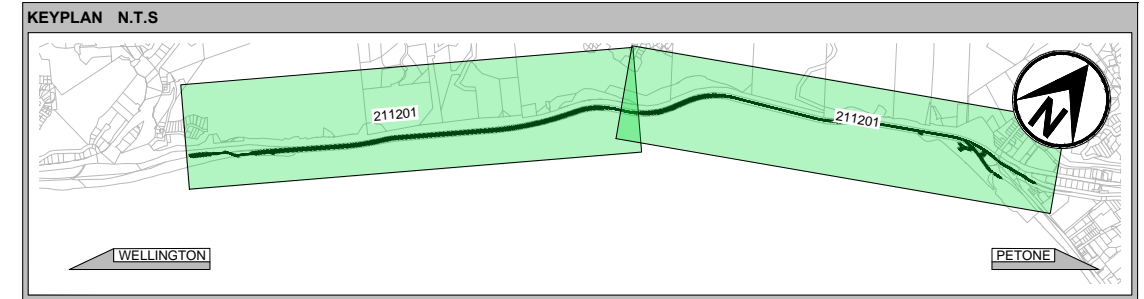


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- NOTES**
- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-UN-112101 TO 112115 FOR DETAILS OF UTILITIES CONNECTIONS TO THE ITS FEATURES.
 - REFER TO DRAWING NKP-TAT-000-DRG-CV-TS-216001 FOR DETAILS ON THE CULTURAL EXPRESSION AND ARTWORK PAVEMENT MARKINGS.
 - SIGNS AND SIGNAGE STYLES IN ACCORDANCE WITH MOTSAM PARTS I, II & THE TRAFFIC CONTROL DEVICES (TCD) MANUAL (MOTSAM REFERENCE / TCD CODE).
 - FOR SIGNAGE POLE AND CCTV TYPICAL DETAILS, REFER NKP-TAT-000-DRG-CV-TS-216011.
 - FOR TRAFFIC MARKING TYPICAL DETAILS, REFER NKP-TAT-000-DRG-CV-TS-216012.
 - FOR SIGNAGE TYPICAL DETAILS, REFER NKP-TAT-000-DRG-CV-TS-216013.
 - FOR BRIDGE STRUCTURE AND ARCHITECTURE DESIGN REFER TO DWP-BR-01.
 - FOR KIWI RAIL TRACTION STATION DESIGN, REFER TO DWP-BU-01.
 - FOR LONGITUDINAL DRAINAGE DESIGN REFER TO DWP-DR-01.
 - FOR UTILITIES TRENCH AND DUCTING DESIGN REFER TO DWP-UN-01.
 - FOR PAVEMENT AND SURFACING DESIGN REFER TO DWP-PS-01.
 - FOR REVETMENTS DESIGN REFER TO DWP-RV-01.
 - FOR SEAWALLS DESIGN REFER TO DWP-SE-01.
 - FOR URANGA DESIGN REFER TO DWP-LS-01.
 - FOR KIWI RAIL BOUNDARY FENCE DESIGN REFER TO DWP-TS-03.
 - FOR LIGHTING DESIGN REFER TO DWP-TS-04.

LEGEND

	CONSENTED PROJECT EXTENT		NEW STATIC STEEL BOLLARD
	PARCEL BOUNDARY		NEW CCTV
	EXISTING RAIL ALIGNMENT		NEW VMS
	EXISTING POWER POLE		NEW PATH USER COUNTER
	NEW KIWI RAIL BOUNDARY FENCE, REFER DWP-TS-03 FOR DETAILS		NEW ITS CABINET
	NEW KIWI RAIL ACCESS GATE, REFER DWP-TS-03 FOR DETAILS		NEW INTEGRATED LUMINAIRE, INDICATIVE ONLY, REFER DWP-TS-04 FOR DETAILS
	NEW LINE MARKINGS		NEW LUMINAIRE ON 4m COLUMN, INDICATIVE ONLY, REFER DWP-TS-04 FOR DETAILS
	NEW 150mm WIDE RIBBED SEPARATION LINE (TBC)		NEW LUMINAIRE ON 5m COLUMN, INDICATIVE ONLY, REFER DWP-TS-04 FOR DETAILS
	NEW PEDESTRIAN SYMBOL		NEW LUMINAIRE ON POD AND SCULPTURES, REFER DWP-TS-04 FOR DETAILS
	NEW CYCLE SYMBOL		ROCK REVETMENT
	NEW ROAD SIGN / SIGNS		NEW SEAWALL
	EXISTING ROAD SIGN / SIGNS		INDICATIVE BOUNDS FOR URBAN. DESIGN PAVEMENT MARKINGS (DESIGN TBC)
	NEW RETRACTABLE STEEL BOLLARD		
	NEW REMOVABLE STEEL BOLLARD		



ORIGINAL SIZE: ISO A1 594mm x 841mm

	Te Ara Tupua Alliance Shifting gear to connect past, present and future		WAKA KOTAHI NZ TRANSPORT AGENCY
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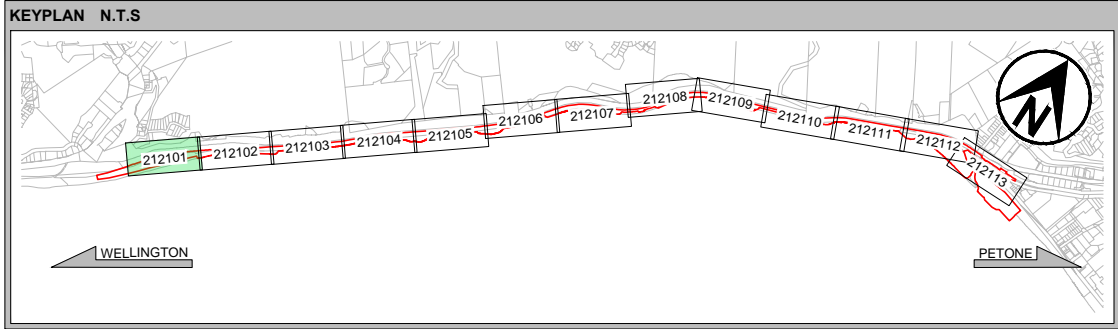
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PROJECT:	NGĀ ŪRANGA KI PITO-ONE SHARED PATH
WORKPACK:	DWP-TS-02 - SRAFFIC SERVICES
TITLE:	PROJECT WIDE SHARED PATH GENERAL NOTES, LEGEND & OVERALL PLAN
DOCUMENT:	NKP - TAT - 000 - DRG - CV - TS - 211201
SHEET:	C01

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NOTES

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300
200
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MATCHLINE
REFER TO NKP-TAT-000-DRG-CV-TS-212102

ORIGINATOR		CLIENT	
<p>Te Ara Tupua Alliance Shifting gear to connect past, present and future</p>		<p>WAKA KOTAHI NZ TRANSPORT AGENCY</p>	
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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
A02	REVISED PRICING PACK ISSUE	H.BENDLE	M.FOSTER	11/02/2022
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE	0 12.5 25 m	DRAWING SCALE	1:500
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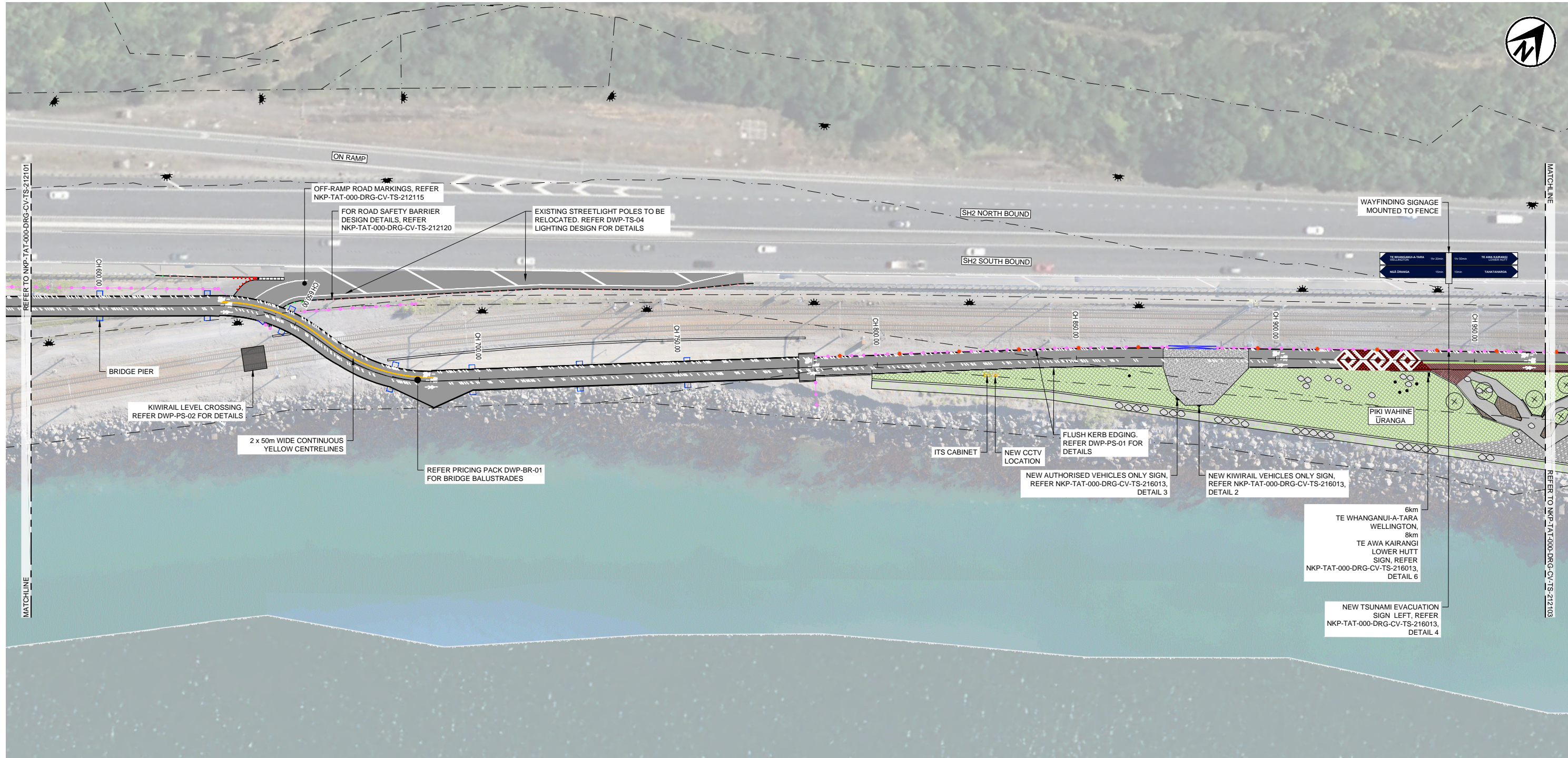
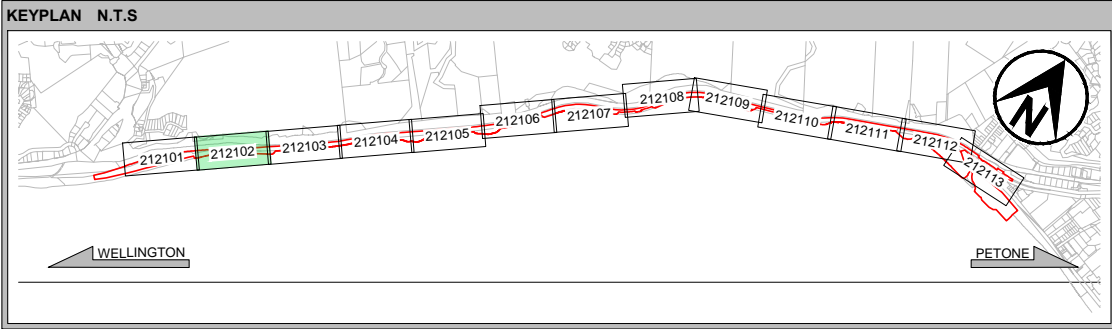
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DETAILED DESIGN	STAGE B
DRAWING STATUS	
NOT FOR CONSTRUCTION	
APPROVED BY:	DESIGNED:
M.FOSTER	J.O'NEILL
APPROVED DATE:	DES. CHECK:
22/11/2022	M.MILLS
	DRAWN:
	L.WANG
	DRG. CHECK:
	N.WATTS

PROJECT:	NGĀ ŪRANGA KI PITO-ONE SHARED PATH							
WORKPACK:	DWP-TS-02 - TRAFFIC SERVICES							
TITLE:	GENERAL ARRANGEMENT PLAN							
	SHEET 1							
DOCUMENT:	PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
	NKP - TAT - 000 - DRG - CV - TS - 212101						C02	

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NOTES

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ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

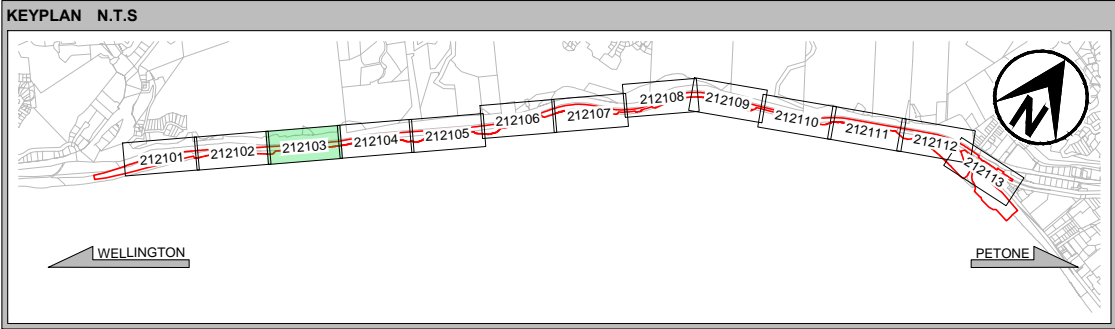
TITLE: **GENERAL ARRANGEMENT PLAN SHEET 2**

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212102						C02	

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NOTES

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- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-TS-211201 FOR GENERAL NOTES AND LEGEND.



ORIGINAL SIZE: ISO A1 594mm x 841mm

MATCHLINE

MATCHLINE

MATCHLINE

REFER TO NKP-TAT-000-DRG-CV-TS-212104

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI** NZ TRANSPORT AGENCY

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

DRAWING SCALE: 1:500

DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.ONEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

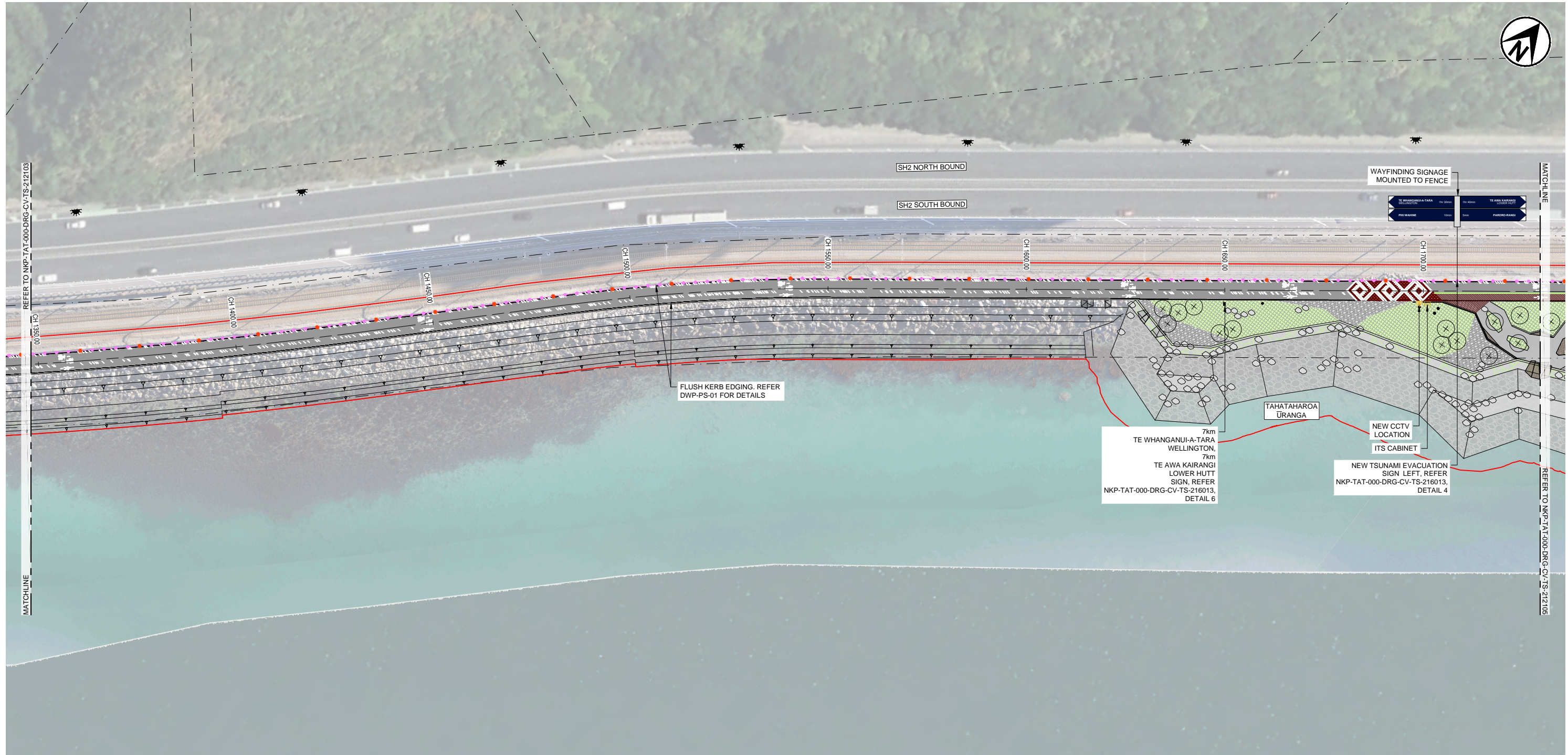
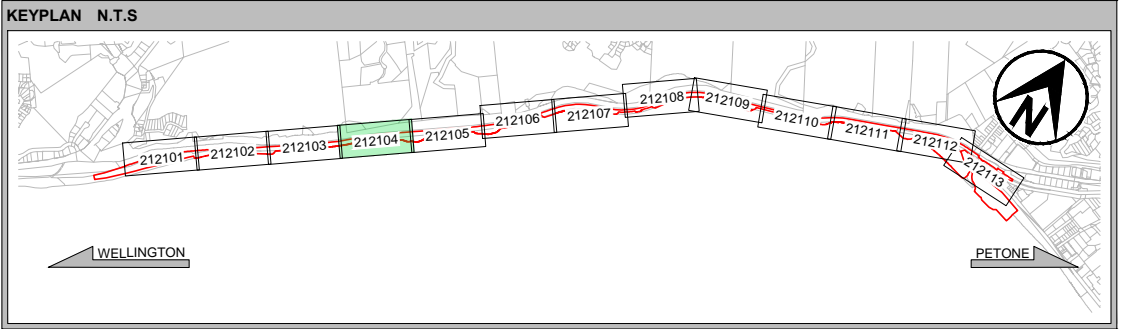
TITLE: **GENERAL ARRANGEMENT PLAN SHEET 3**

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212103						C02	

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NOTES

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- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-TS-211201 FOR GENERAL NOTES AND LEGEND.



ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

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DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

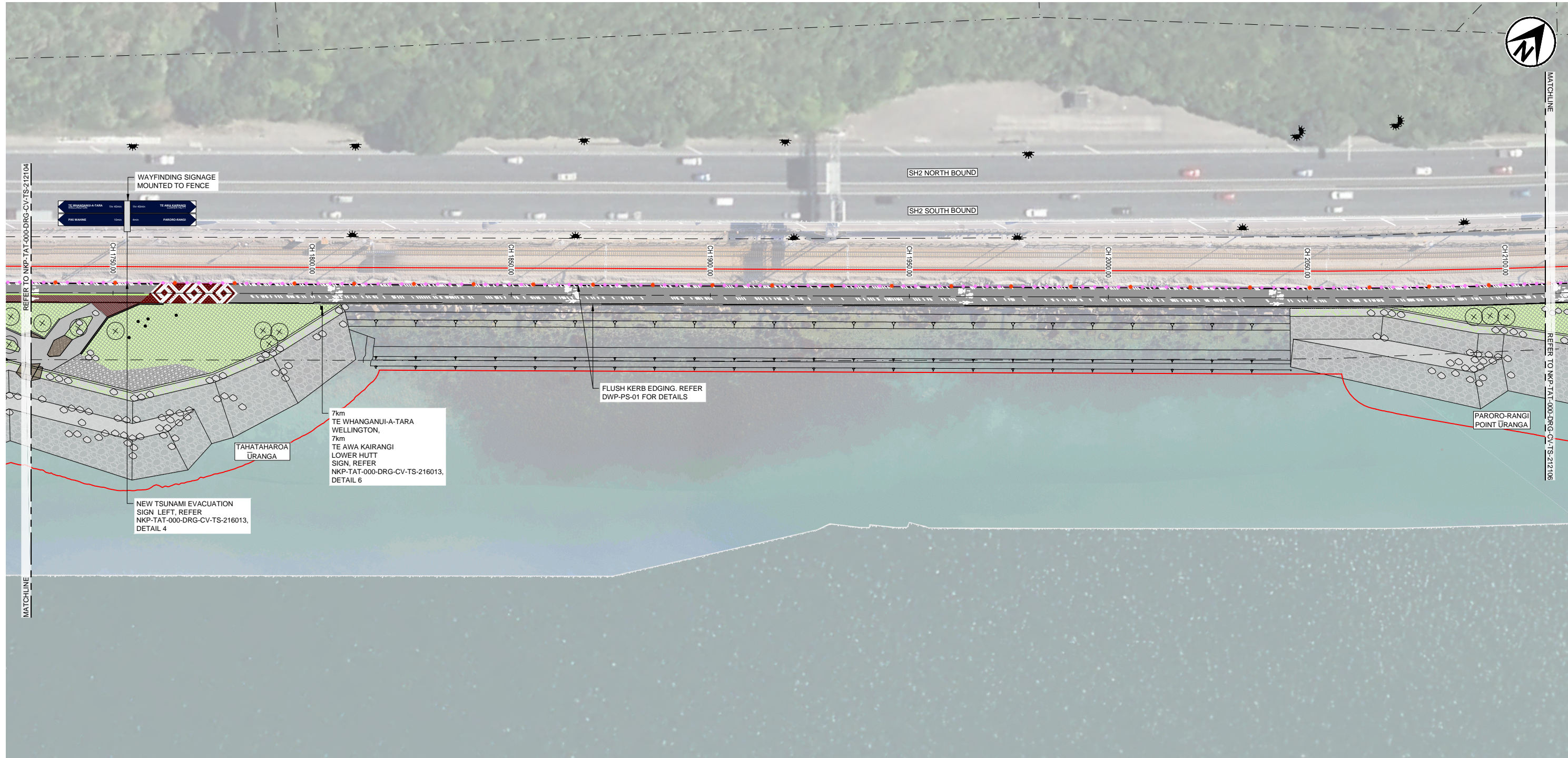
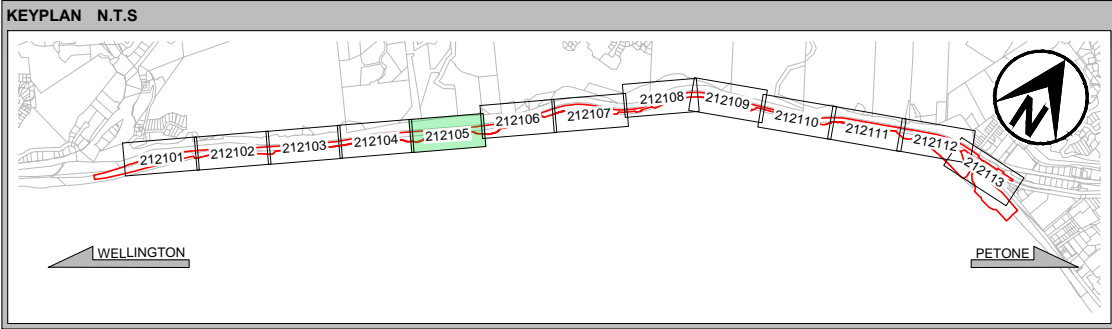
TITLE: **GENERAL ARRANGEMENT PLAN SHEET 4**

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212104						C02	

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NOTES

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ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

TITLE: **GENERAL ARRANGEMENT PLAN SHEET 5**

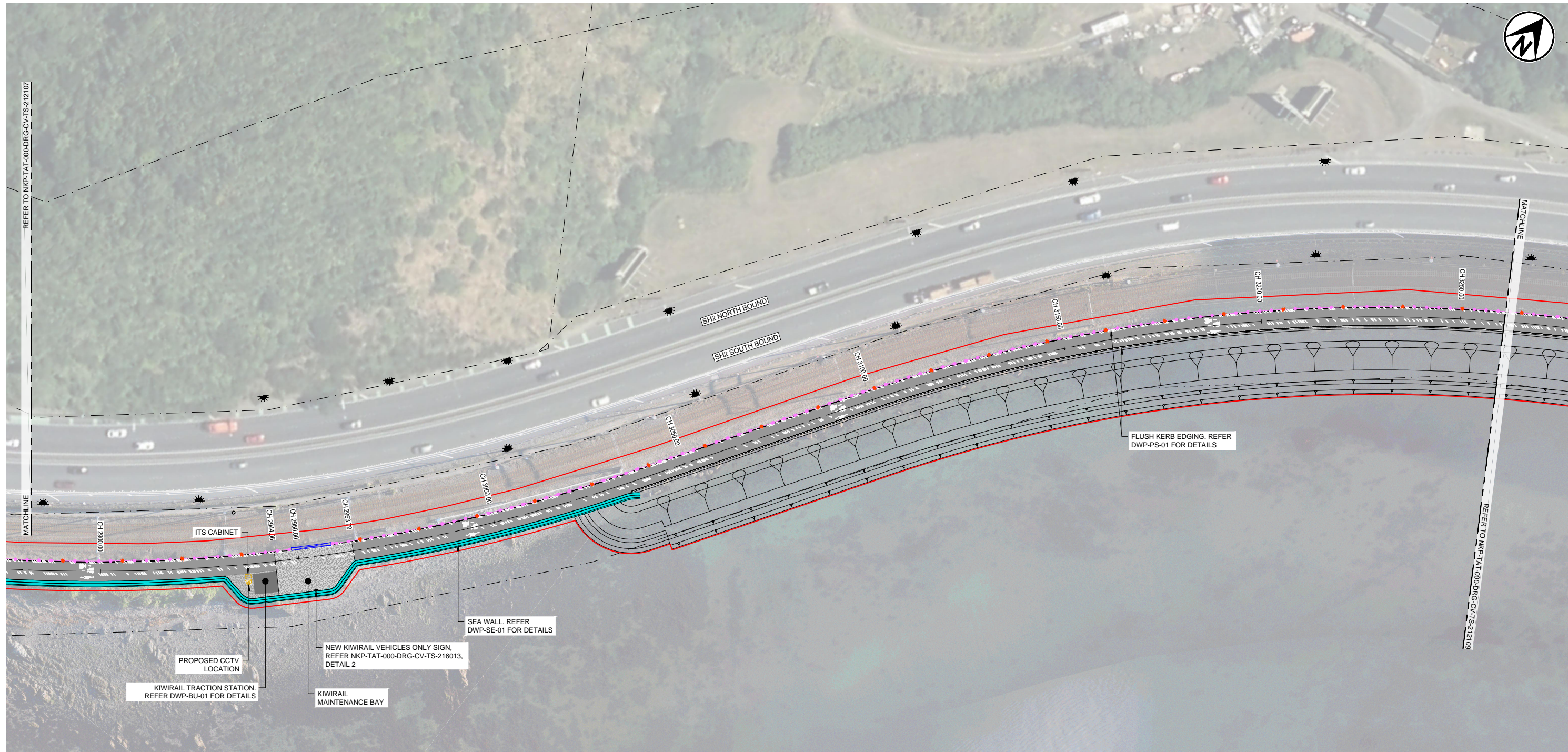
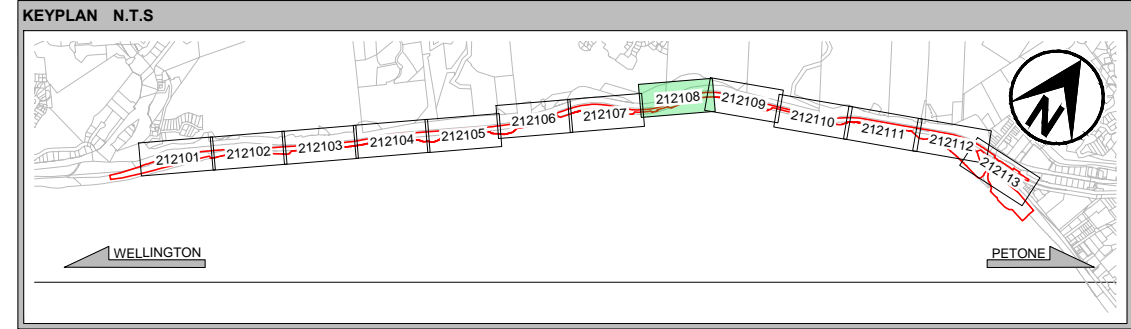
DOCUMENT: **NKP - TAT - 000 - DRG - CV - TS - 212105**

SHEET: **C02**

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NOTES

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ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

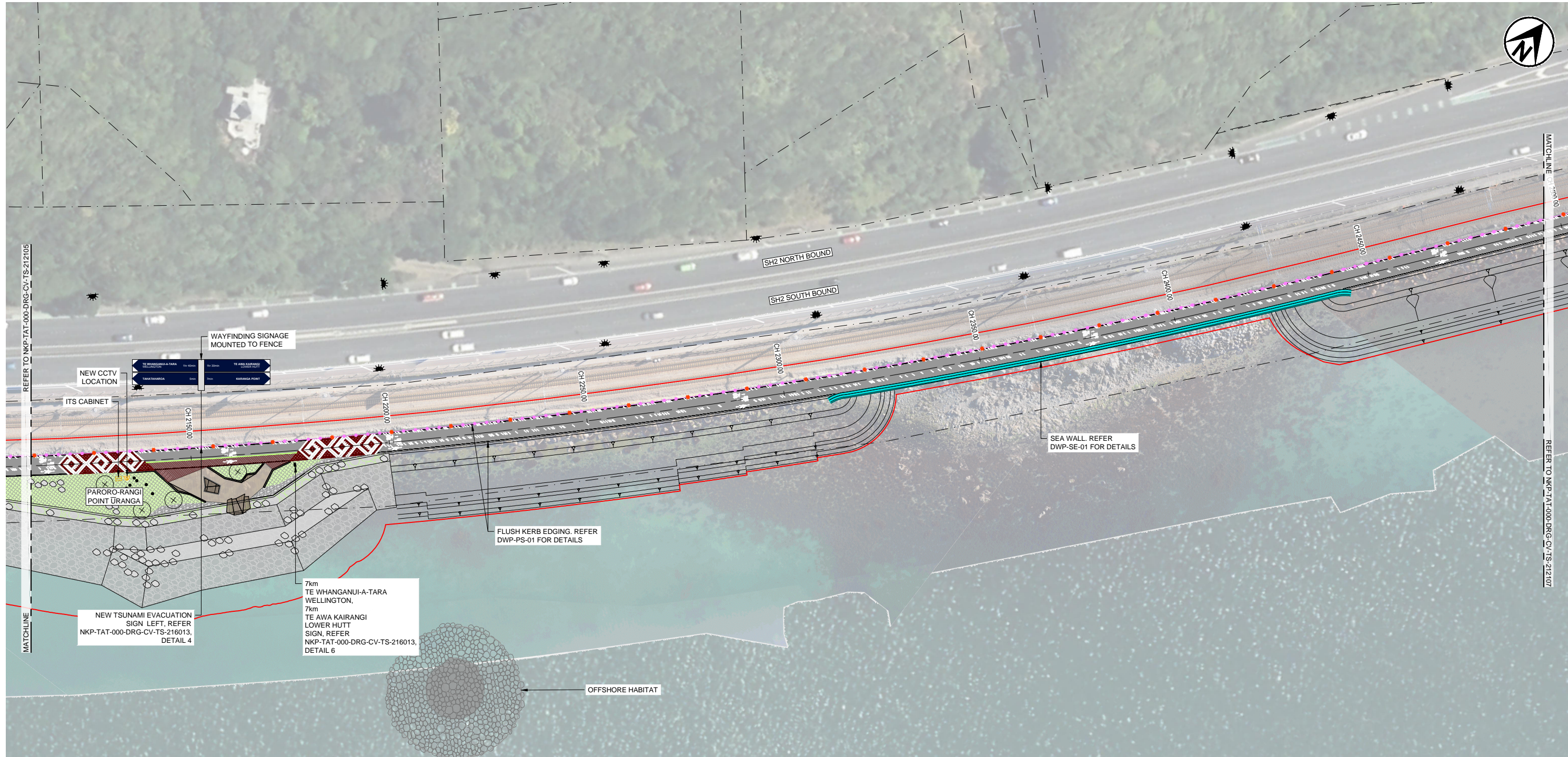
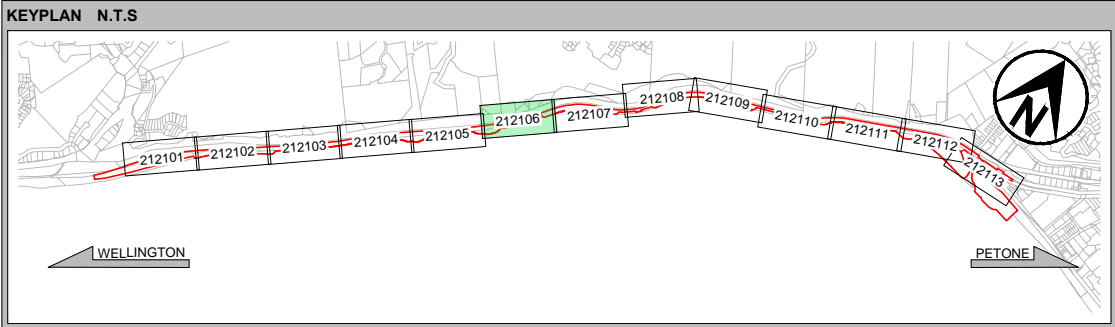
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APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: NGĀ ŪRANGA KI PITO-ONE SHARED PATH	WORKPACK: DWP-TS-02 - TRAFFIC SERVICES
TITLE: GENERAL ARRANGEMENT PLAN SHEET 8	
PROJECT: NKP - TAT - 000 - DRG - CV - TS - 212108	REVISION: C02

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NOTES

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ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI** NZ TRANSPORT AGENCY

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

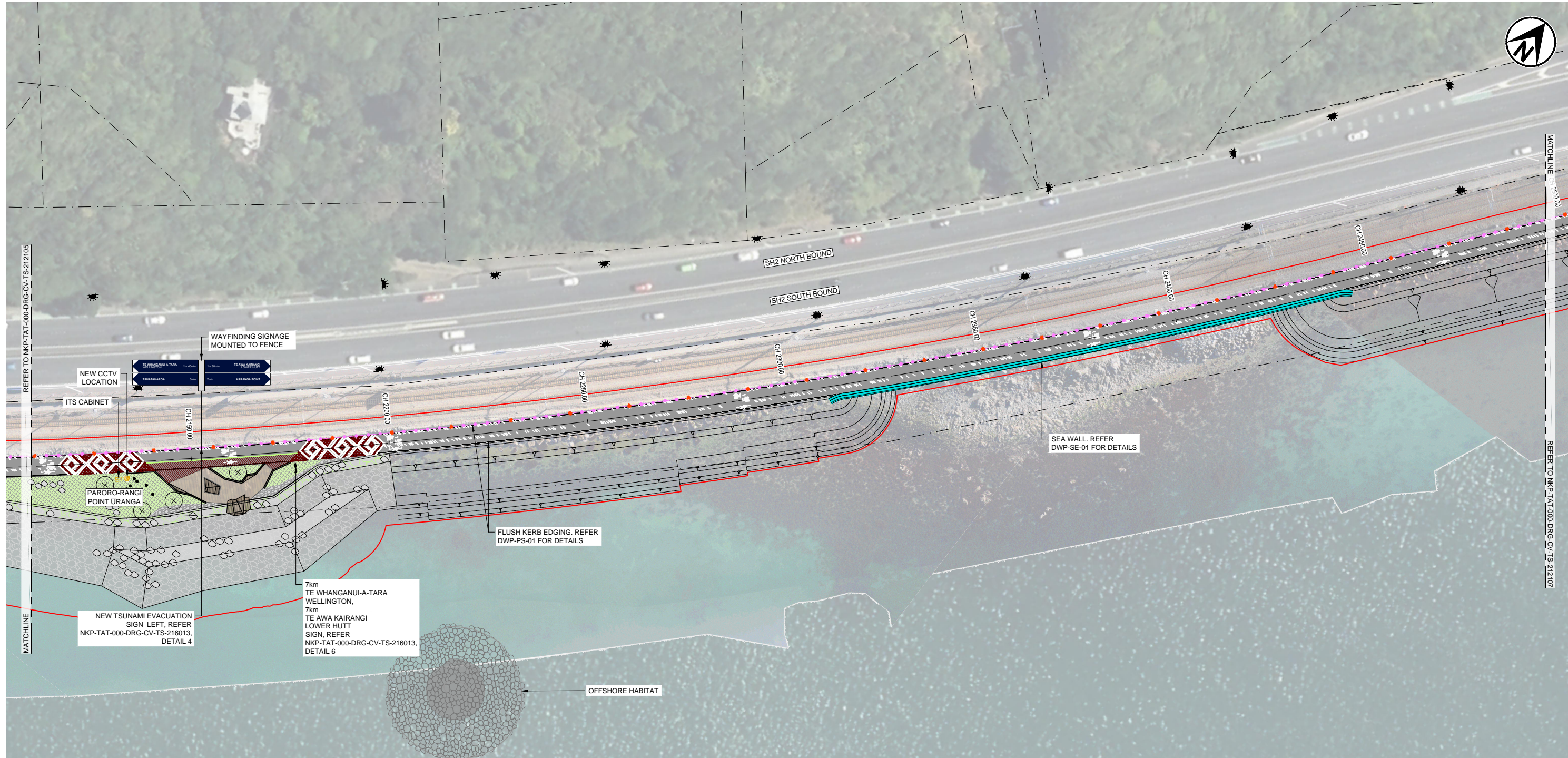
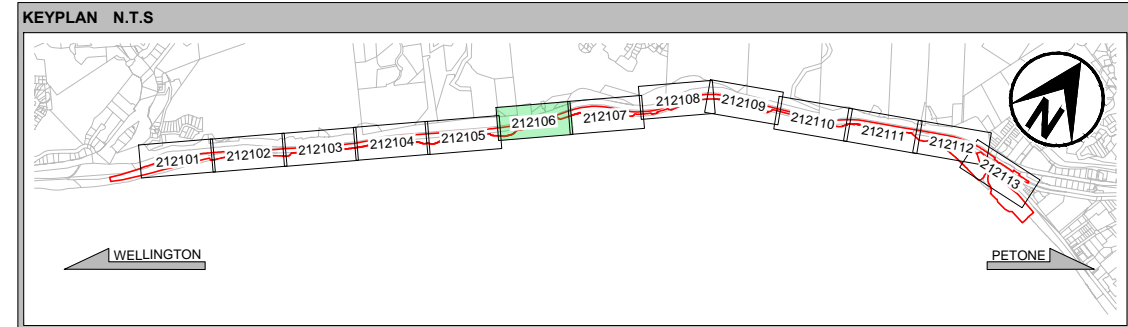
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APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: NGĀ ŪRANGA KI PITO-ONE SHARED PATH	WORKPACK: DWP-TS-02 - TRAFFIC SERVICES
TITLE: GENERAL ARRANGEMENT PLAN SHEET 6	
PROJECT: NKP - TAT - 000 - DRG - CV - TS - 212106	SHEET: C02

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ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI** NZ TRANSPORT AGENCY

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

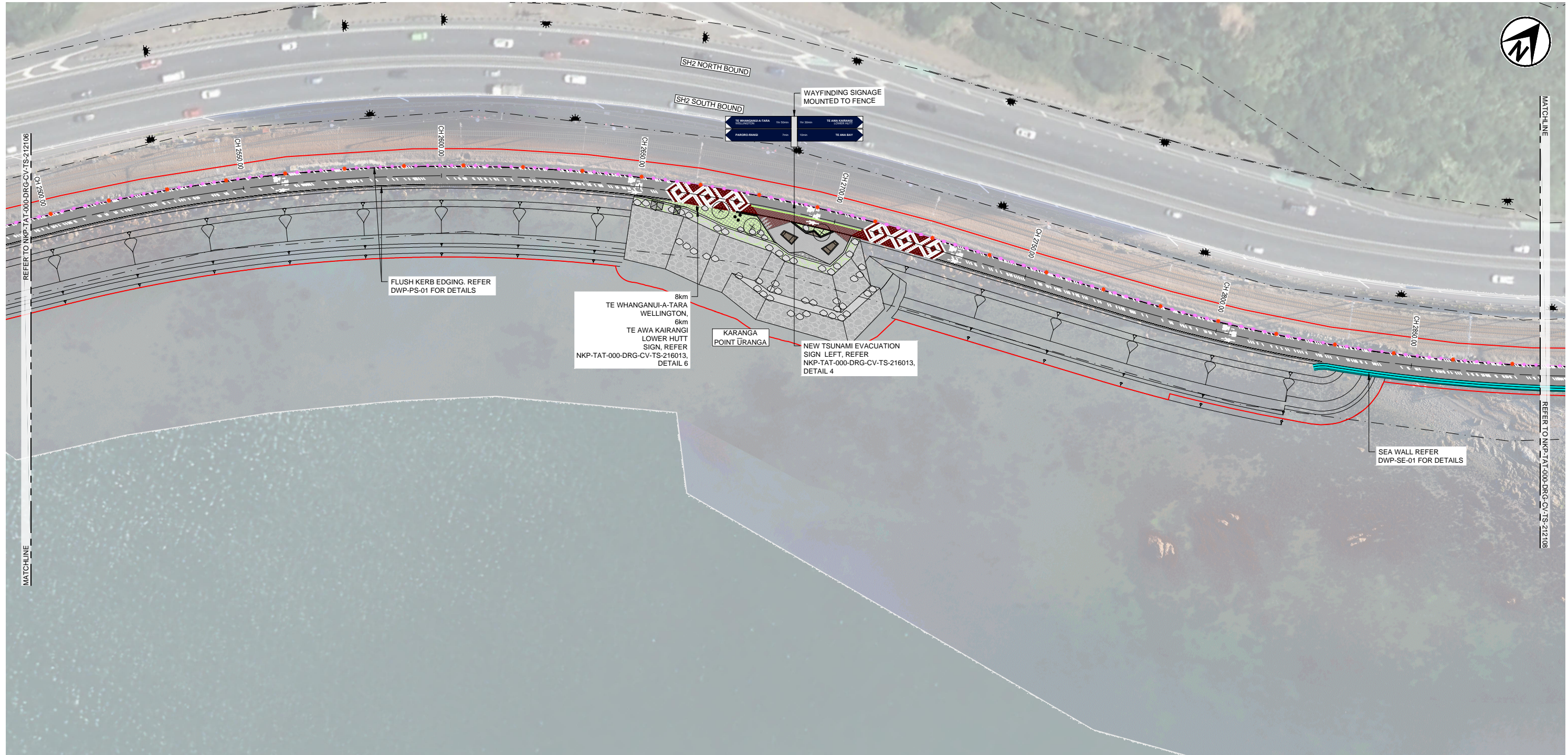
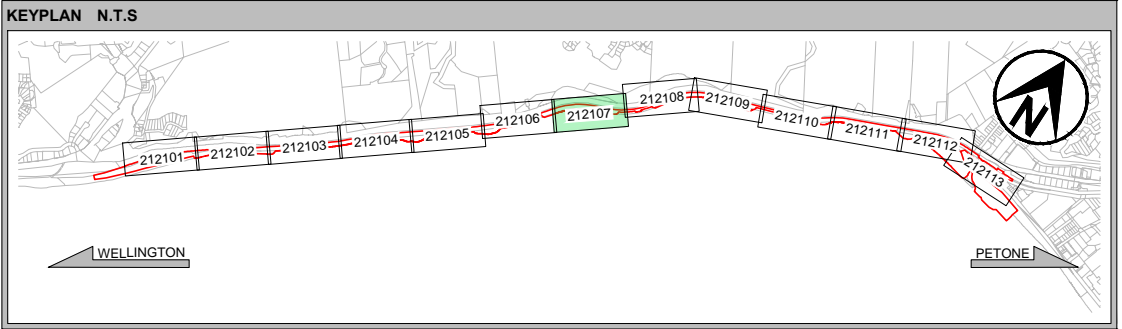
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DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: NGĀ ŪRANGA KI PITO-ONE SHARED PATH
WORKPACK: DWP-TS-02 - TRAFFIC SERVICES
TITLE: GENERAL ARRANGEMENT PLAN SHEET 6
DOCUMENT: NKP - TAT - 000 - DRG - CV - TS - 212106
SHEET: C02

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NOTES

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ORIGINATOR: **Te Ara Tupua Alliance**
 Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI**
 NZ TRANSPORT AGENCY

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22
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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

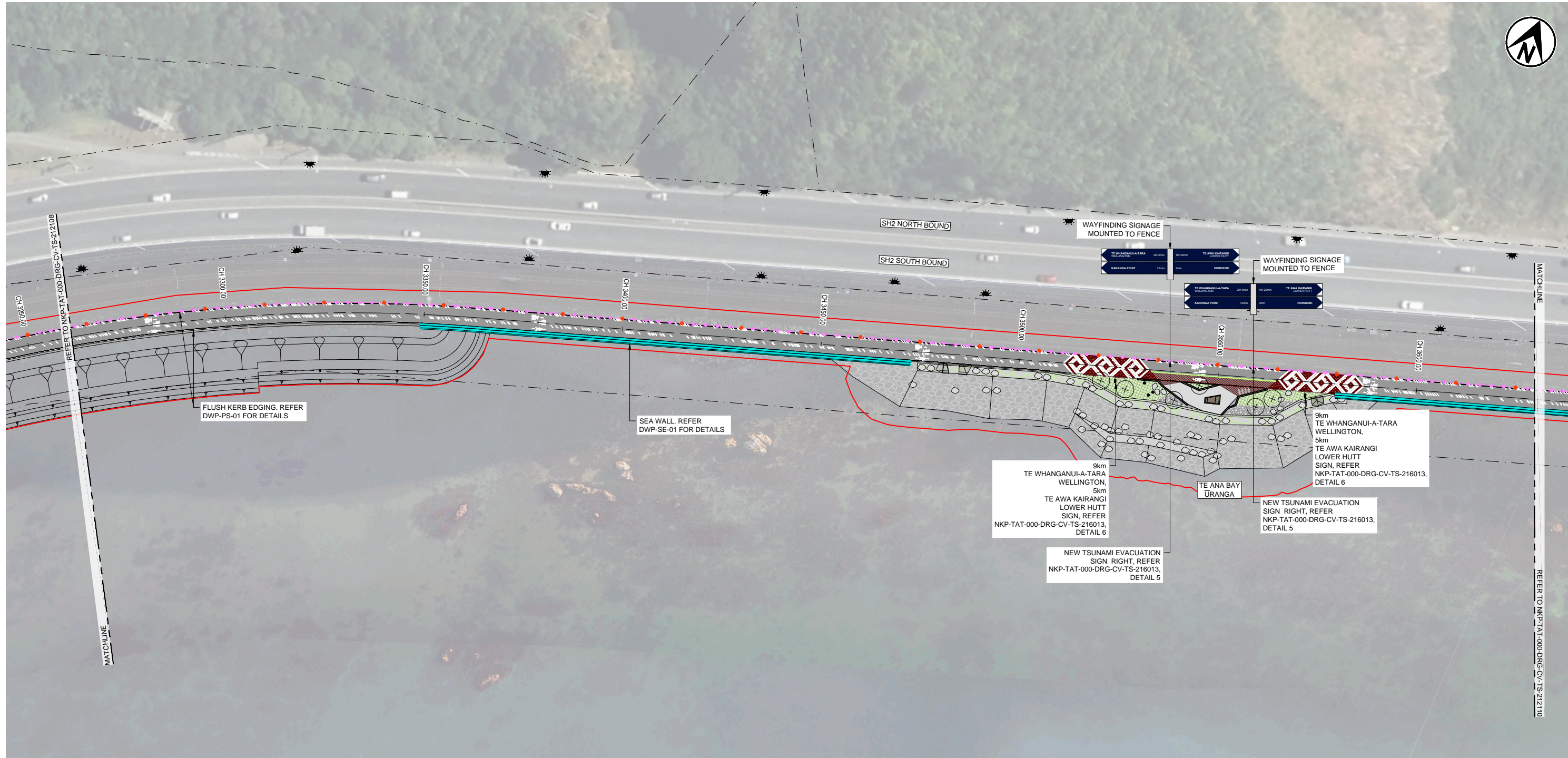
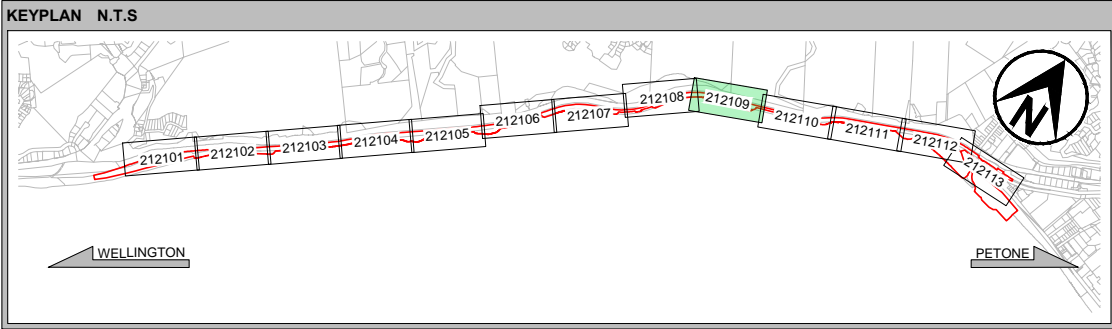
DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: NGĀ ŪRANGA KI PITO-ONE SHARED PATH
WORKPACK: DWP-TS-02 - TRAFFIC SERVICES
TITLE: GENERAL ARRANGEMENT PLAN SHEET 7
DOCUMENT: NKP - TAT - 000 - DRG - CV - TS - 212107
SHEET: C02

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ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

DRAWING SCALE: 1:500

DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

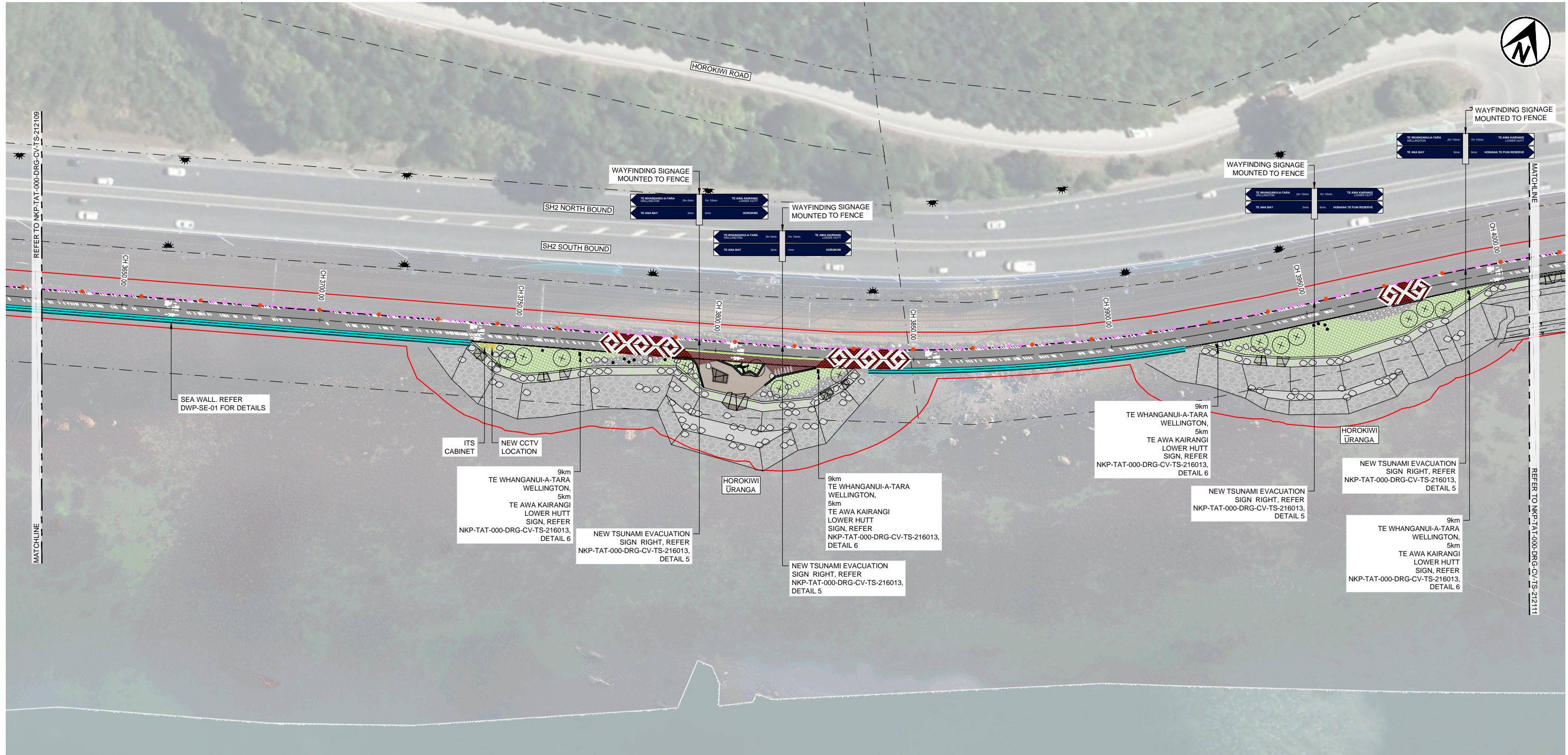
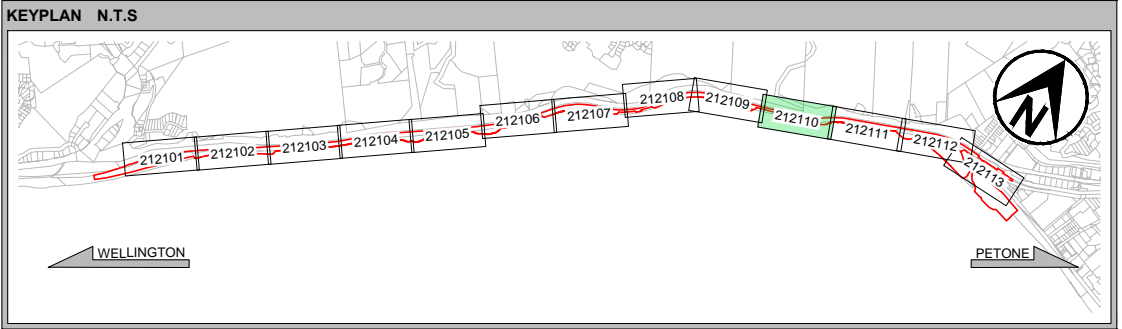
TITLE: **GENERAL ARRANGEMENT PLAN SHEET 9**

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212109						9	C02

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NOTES

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- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-TS-211201 FOR GENERAL NOTES AND LEGEND.



ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APPRD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE	0 12.5 25 m	DRAWING SCALE	1:500
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DESIGN STAGE	GATE	PROJECT
DETAILED DESIGN	STAGE B	WORKPACK:
DRAWING STATUS		TITLE:
NOT FOR CONSTRUCTION		DOCUMENT:
APPROVED BY:	DESIGNED:	J.O'NEILL
M.FOSTER	DES. CHECK:	M.MILLS
APPROVED DATE:	DRAWN:	L.WANG
22/11/2022	DRG. CHECK:	N.WATTS

NGĀ ŪRANGA KI PITO-ONE SHARED PATH
DWP-TS-02 - TRAFFIC SERVICES

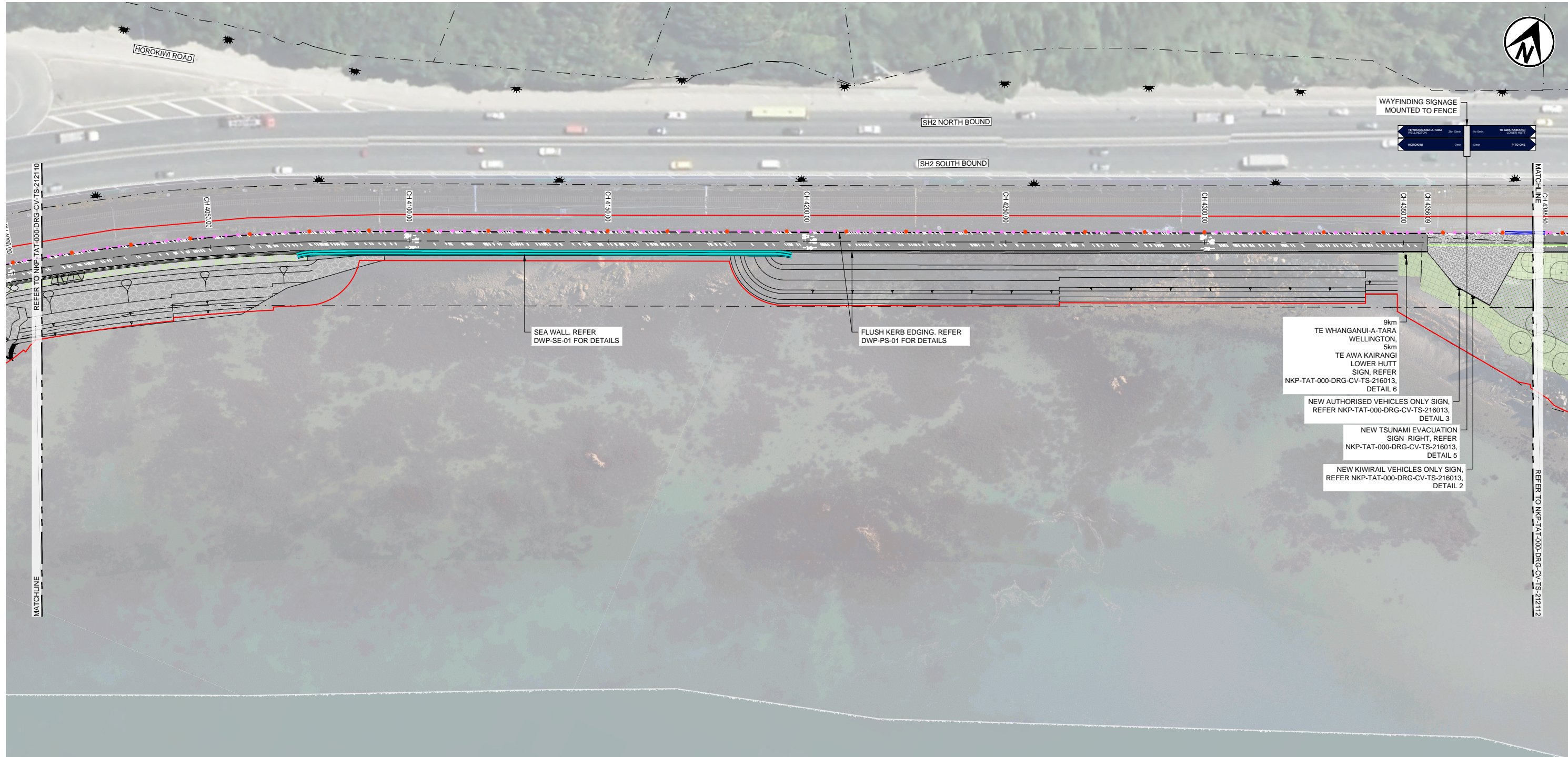
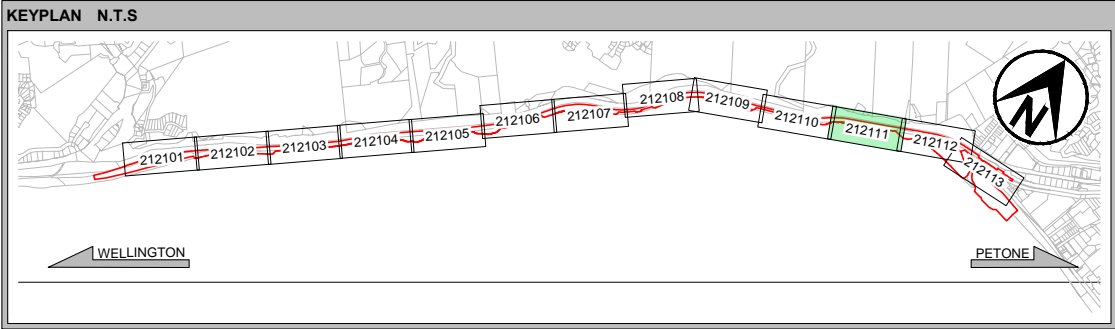
GENERAL ARRANGEMENT PLAN
SHEET 10

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212110						C02	

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NOTES

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- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-TS-211201 FOR GENERAL NOTES AND LEGEND.



ORIGINAL SIZE: ISO A1 594mm x 841mm

ORIGINATOR: **Te Ara Tupua Alliance** Shifting gear to connect past, present and future

CLIENT: **WAKA KOTAHI NZ TRANSPORT AGENCY**

LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22

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REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022

SCALE: 1:500

DESIGN STAGE: DETAILED DESIGN	GATE: STAGE B
DRAWING STATUS: NOT FOR CONSTRUCTION	
APPROVED BY: M.FOSTER	DESIGNED: J.O'NEILL
APPROVED DATE: 22/11/2022	DES. CHECK: M.MILLS
	DRAWN: L.WANG
	DRG. CHECK: N.WATTS

PROJECT: **NGĀ ŪRANGA KI PITO-ONE SHARED PATH**

WORKPACK: **DWP-TS-02 - TRAFFIC SERVICES**

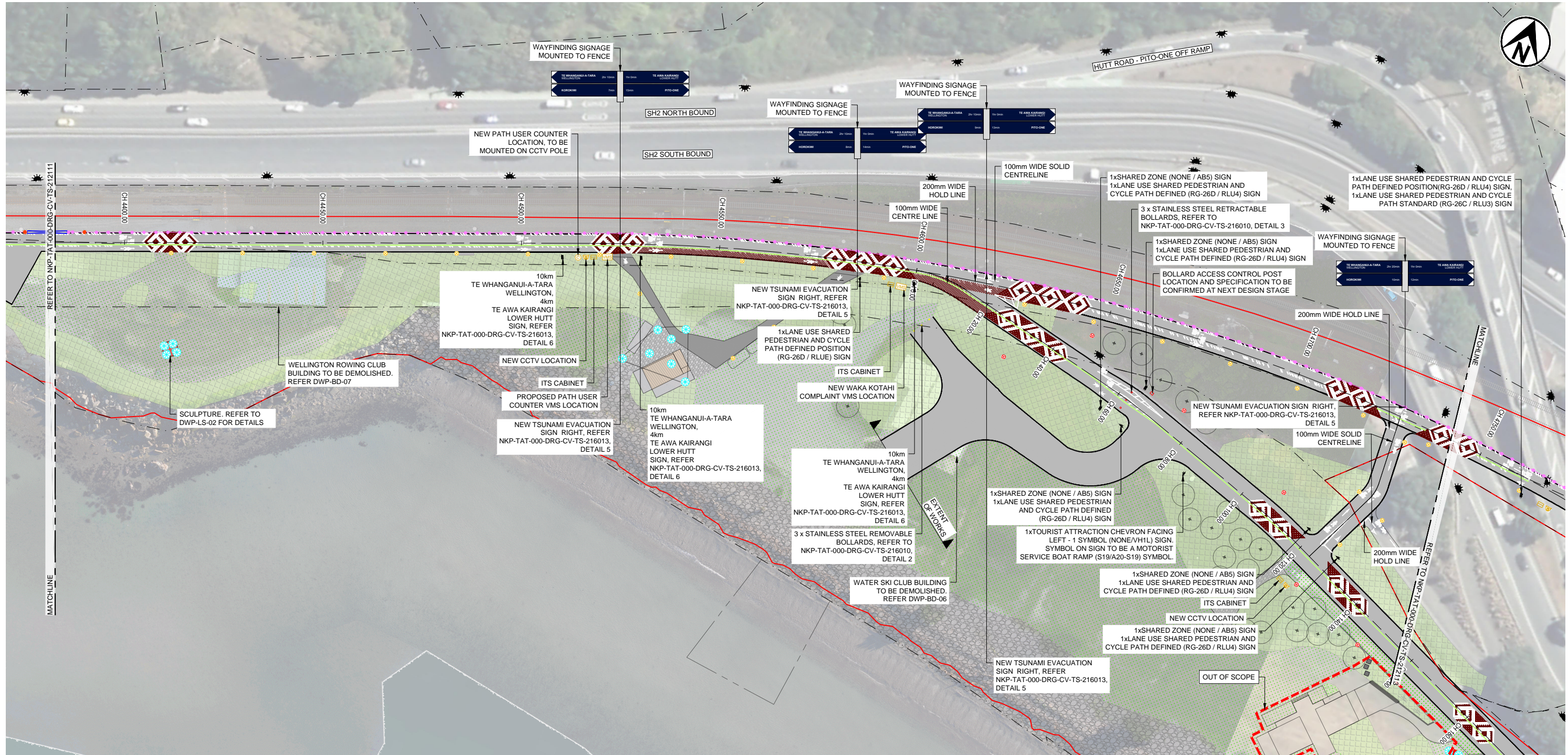
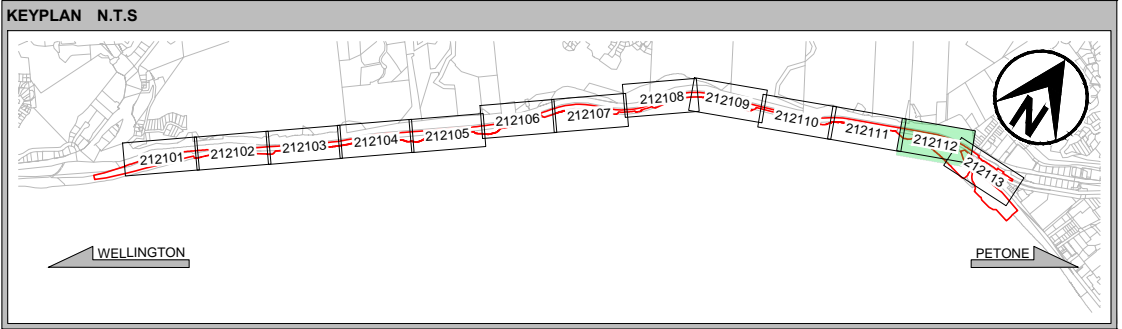
TITLE: **GENERAL ARRANGEMENT PLAN SHEET 11**

PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212111						C02	

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NOTES

- DO NOT SCALE OFF THIS DRAWING.
- REFER TO DRAWINGS NKP-TAT-000-DRG-CV-TS-211201 FOR GENERAL NOTES AND LEGEND.



ORIGINATOR		CLIENT	
<p>LAST SAVED BY: WYHU(2022-11-22) LAST PLOTTED: 2022-11-22</p> <p>FILE LOCATION:</p>		<p>PRINTED COPIES OF THIS DOCUMENT ARE UNCONTROLLED</p>	

REV.	DESCRIPTION	DRAWN BY	APRVD. BY	DATE
A01	PRICING PACK ISSUE	L.WANG	M.FOSTER	17/09/2021
A02	REVISED PRICING PACK ISSUE	H.BENDLE	M.FOSTER	11/02/2022
C01	STAGE A EXTERNAL ISSUE	L.WANG	M.FOSTER	12/08/2022
C02	STAGE B EXTERNAL ISSUE	W.HURN	M.FOSTER	22/11/2022


SCALE	0 12.5 25 m
DRAWING SCALE	1:500

DESIGN STAGE	GATE	PROJECT
DETAILED DESIGN	STAGE B	WORKPACK:
DRAWING STATUS		TITLE:
NOT FOR CONSTRUCTION		DOCUMENT:
APPROVED BY:	DESIGNED:	J.O'NEILL
M.FOSTER	DES. CHECK:	M.MILLS
APPROVED DATE:	DRAWN:	L.WANG
22/11/2022	DRG. CHECK:	N.WATTS

<p>NGĀ ŪRANGA KI PITO-ONE SHARED PATH DWP-TS-02 - TRAFFIC SERVICES</p> <p>GENERAL ARRANGEMENT PLAN SHEET 12</p>							
PROJECT	ORIGINATOR	AREA	TYPE	DISCIPLINE	ASSET TYPE	SHEET	REVISION
NKP - TAT - 000 - DRG - CV - TS - 212112	C02						




Appendix F: Decommissioning Form

 Te Ara Tupua Alliance Shifting gear to connect past, present and future		
SSESCP Decommissioning Form		
<i>Part 1: to be completed and provided to GWRC for approval</i>		
Prepared by: Signature:		Date:
Proposed decommissioning activities	Approved	Completed
Comments		
<i>Part 2: to be completed following approval from GWRC</i>		
Actions resulting from final inspection	By whom	By when




Appendix G: Site Inspection Report

 Te Ara Tupua Alliance Shifting gear to connect past, present and future			
Date		Time	
Location		Inspector/ Auditor	
Weather Conditions			
Sea Conditions			
Activities being undertaken			
Observations	Yes / No	Comment	
Works Area (within construction area)?			
Is the area of disturbance being kept to a minimum?			
Any signs of ecological damage?			
Spill kit available and fully stocked?			
Materials stored on site?			
Is there any material placed below high water?			
Any indication of sediment discharges?			
Does the machinery appear to be in good condition no excessive noise or exhaust discharges?			
Are site records being maintained correctly?			
Are erosion and sediment controls being implemented properly?			
Any signs of litter on site?			
Any signs of dust being discharged from the works area or the tracking of dirt onto roads?			
Other Comments			
Actions	By whom	By when	





Appendix H: Incident Report

 Te Ara Tupua Alliance Shifting gear to connect past, present and future			
Date of incident:		Time of incident:	
Location of incident:		Inspector/ Auditor	
Weather conditions			
Sea conditions			
Type and nature of incident:			
Activities being undertaken:			
Assessment of effects on the environment:			
Measures taken to remedy the effects on the environment:			
Measures put in place to prevent the incident occurring again:			
Other Comments			
Actions	By whom	By when	

