Appendix AL

Construction Management Plan

Bell Road Limited Partnership

Wairakei South

Bell Road

Pāpāmoa

Construction Management Plan

PROJECT INFORMATION

CLIENT	Bell Road Limited Partnership
PROJECT	BOP 0749

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1. EXECUTIVE SUMMARY

The purpose of this report is to provide a draft example of a Construction Management Plan (CMP). This will form the basis on which all stages of construction will base the stage specific construction management plan. This report will support the Fast-track Approvals Act ("FTA") substantive application.

The Wairakei South Development (the Site) is a transformative, privately funded urban development project which will play a critical role in addressing the Western Bay of Plenty sub-region's growing housing and business land shortfalls. The site is approximately 350 hectares within the high-growth Eastern Corridor between Pāpāmoa, Te Tumu, and Te Puke, Wairakei South is positioned to become a vibrant, integrated and connected mixed-use community. The project will deliver approximately 2,750 new homes alongside 50 hectares of industrial, 4 hectares of commercial centres, and a 4 hectare primary school over the next 10–20 years.

2. INTRODUCTION

Maven BOP Limited (Maven) have been engaged by Bell Road Limited Partnership to undertake the Construction Management Plan (CMP) in support of the Fast-Track Approvals Act Application (FTA) for the Wairakei South FTA090 Development.

2.1. PURPOSE OF REPORT

The purpose of this document is to provide a framework of administrative and operational requirements and procedures to mitigate any potential risk during the construction phase of the Project. This Construction Management Plan (CMP) is the overarching document in the Environmental Management Framework and is supported by the following supplementary documents;

- Earthworks Management Plan **(Appendix U of the AEE)**
- Stormwater Management Plan **(Appendix G of the AEE)**
- Construction Traffic Management plan

This document provides information on actions, mitigation measures, key personnel, and monitoring across all facets of the construction phase of the project, including erosion and sediment control, dust control, noise and vibration management, and ecology management. This CMP is intended to provide a practical summary for management and site personnel, with further background information and details available in the supplementary management plan documents listed above.

This document also provides the framework for record keeping ensuring that Construction Management is conducted efficiently and effectively.

This CMP is intended to be a live document, which is updated whenever necessary.

There will be multiple contracts awarded over the course of this development. The scope of this report discusses the key aspects relating to the construction of the Project, and includes as follows:

- Staging and Construction Methodology
- Administration Requirements
- Site Inductions
- Hazard Minimisation and Environmental Incident Protocols
- Construction Management
- Environmental Management
- Construction Effects & Mitigation Measures

The scope of work will be finalized and updated once the contractor is selected.

This CMP is intended to demonstrate how the development will manage construction in a manner that aligns with both local and regional objectives, mitigates adverse effects, and supports sustainable construction outcomes.

2.2. SITE DESCRIPTION

The subject site comprises 12 individual records of title, and a combined area of approximately 349ha (refer Table 1). The site is located immediately south of State Highway 2 (SH2) / the Tauranga Eastern Link, and south of the established Wairakei North and 'The Sands' developments. The site location is shown in Figure 1, below.

Legal and physical access to the site is directly via Bell Road, which traverses the property. A future transport link will become available via the Pāpāmoa East Interchange (PEI) to SH2, pending the completion of the PEI.

The land is zoned rural under the Western Bay of Plenty District Plan, and is situated within a predominantly rural environment. The site contains seven dwellings dispersed across various land parcels.

The site is bounded by State Highway 2 to the north and east of the site. The Kopuaroa Canal, a linear drainage canal, forms the southern boundary across the site extending from the west, eastward before connecting into the Kaituna River. Bell Road bisects the property, creating two distinct land parcels referred to in this application as:

- "The North Block" – land to the north of Bell Road; and
- "The South Block" – land to the south of Bell Road.

The site comprises flat, heavily modified alluvial plains with drained peat soils, rectilinear paddock patterns, channelised drainage networks and limited areas of native vegetation. The land is currently utilised for rural production activities, being predominantly in pasture and grazed by stock, with seasonal maize cropping.

Existing features within the site include farm drainage infrastructure, mature trees and hedgerows, residential dwellings, and associated farm buildings.

Culturally, the site is located within the rohe of Waitaha and Tapuika and forms part of a wider cultural landscape connected to Te Rae o Pāpāmoa, historic wetland systems, and the Kaituna River.

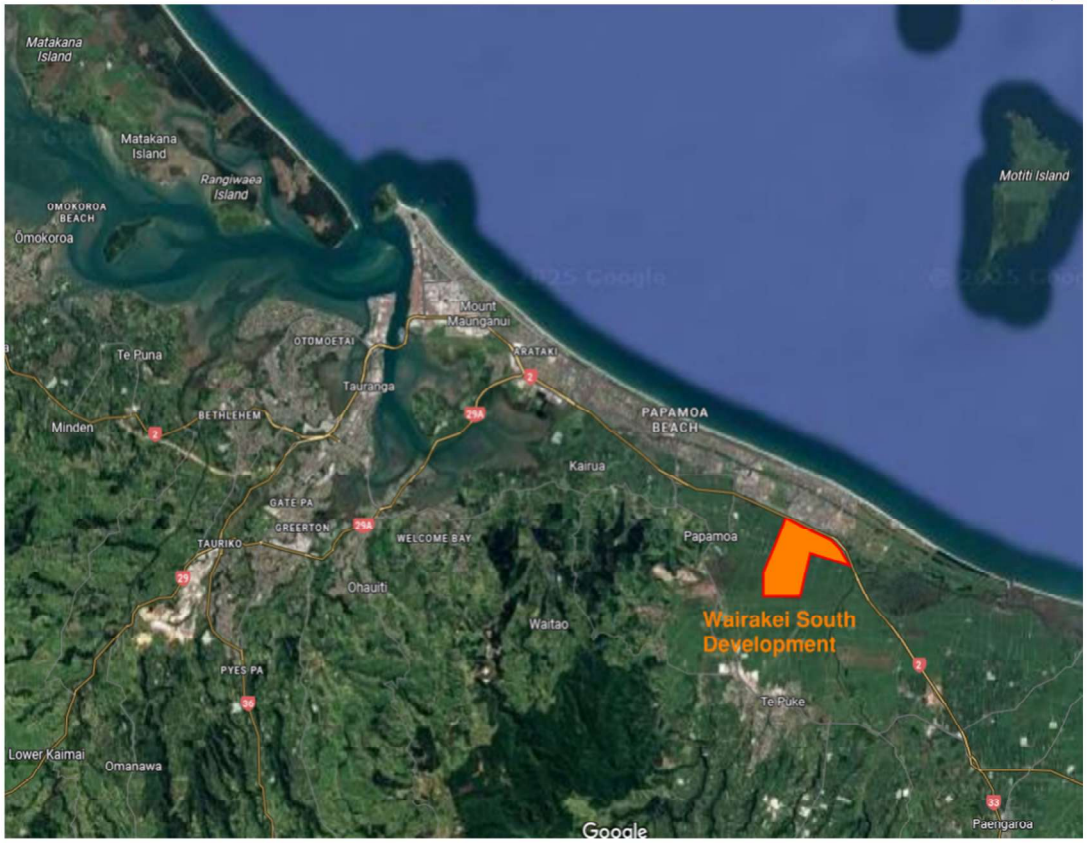

Figure 1 -Wairakei South Development Location (Source: Google Maps)

Table 1: Legal Descriptions of site

Address	Record of Title	Appellation	Area (Ha)
	SA64B/396	Lot 2 DPS 81677 & Lot 1 DPS 54113	24.323
285 Bell Road, Pāpāmoa	SA64B/395	Lot 1 DPS 81677	2.694
	624307	Lot 1 DPS 69524 & Section 26 SO 427562	21.460
285A Bell Road, Pāpāmoa	SA55D/202	Lot 2 DPS 69524	0.982
311 Bell Road, Pāpāmoa	893643	Lot 1 DP 537375	15.291
	893644	Lot 2 DP 537375	3.528
339 Bell Road, Pāpāmoa	687138	Section 1 SO 457222	4.179
	606872	Section 13 SO 458365	59.941
	605743	Section 12 SO 458365	1.788
250, 252 Bell Road, Pāpāmoa	SA7A/206	Part Lot 1 DP 29530	113.762
314D Bell Road, Pāpāmoa	960662	Lot 2 DP 553506	99.110
314 Bell Road, Pāpāmoa	960661	Lot 1 DP 553506	2.063
		Total	349.120

2.3. STAGING AND CONSTRUCTION METHODOLOGY

Due to the scale of works, the project will be undertaken in 18 stages. The order of staging will be dependent on the relevant infrastructure required at each stage of the project as outlined in the Infrastructure Report prepared by Maven. The development stages are shown in figure 3, below.

Figure 2 – Proposed Staging Plan (C100s - Appendix D of the AEE)

The following outlines key points of the proposed works to complete construction:

- Site Establishment: Secure and prepare the construction site, including necessary infrastructure provisioning and access routes.
- Health and Safety Implementation: Establish and maintain health and safety protocols and controls for the numerous and varied workstreams for the project duration.
- Sediment and Erosion Control: Implement measures to prevent sediment generation and erosion, ensuring environmental protection and compliance with regulations.
- Traffic Management measures to be implemented as per approved Traffic Management Plans.
- Works Management in close proximity to the State Highway and existing services.
- Utility Protection and Support - Service Location and Verification: Identify, verify, and confirm existing services within the works area.
- Site Survey and Set Out: Conduct a site survey and set out the construction area to ensure accurate placement of infrastructure.
- Staged Erosion and Sediment Control measures
- Staged Bulk Earthworks
- Staged External Infrastructure Upgrades
- Staged Swale & Channel Infrastructure Construction
- Staged Secondary Water and wastewater Infrastructure Construction
- Staged Roading Infrastructure Construction
- Staged Residential Subdivision Development
- Staged Residential Vertical Development
- Site Dis-establishment: Demobilize from the site, stabilising exposed earth and establishing permanent planting.

3. SUMMARY OF DATA SOURCES AND REGULATORY CONTEXT

3.1. SUMMARY OF DATA SOURCES

This section provides a summary on key datasets used in the writing of this CMP, including those that have been used to generate supporting figures provided as part of this application. See Table 2: Data Source Summary

Table 2: Data Source Summary

Site Characteristics	Data Source
Topography	ALS/Maven Drone and topographical site survey LINZ Data Service Public Digital Elevation Model data
Geotechnical Soil conditions	ENGEO Geotechnical Interpretive Report **(Appendix P of the AEE)** Engeo Hydrogeological Assessment Report **(Appendix R of the AEE)** ENGEO 2022.03.10 - Bell Road Combined Preliminary and Detailed Site Investigation ENGEO 2024.04.17 - Groundwater Monitoring Summary ENGEO 2025.09.26 – Bell Road Interim Summary: Geological Conditions and Geotechnical Parameters
Existing Stormwater Network & Hydrological Features	Public imagery (Google Maps, Bing Maps, New Zealand Imagery from Eagle Technology) Maven Flood Modelling Report **(Appendix H of the AEE)** ALS/Maven Drone and topographical site survey
Ecological / environmental areas	Ecological Solutions Ecological Impact Assessment **(Appendix L of the AEE)**
Contaminated land	ENGEO Contaminated Land Detailed Site Investigation Report **(Appendix S of the AEE)**

The CMP has been developed with reference to the following statutory and technical documents. See Table 3: Regulatory Context.

Table 3: Regulatory Context

Level	Document
National	Resource Management Act 1991 (RMA)
	National Policy Statement for Freshwater Management 2020 (NPS-FM)
	Fast Track Approvals Act 2025
Regional	Bay of Plenty Regional Natural Resources Plan
	Bay of Plenty Regional Council – Guidelines for Stormwater Management
	Bay of Plenty Regional Council – Erosion and Sediment Control Guidelines for Land Disturbing Activities 2010/01
	Auckland Council design manual – GD05 Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region
District	Western Bay of Plenty District Plan
	Western Bay of Plenty District Council – The Development Code
Site Specific	Project specific investigations as highlighted in Section 4.

4. ADMINISTRATIVE REQUIREMENTS

4.1. QUALITY ASSURANCE

Once the contractor is selected, they will provide a detailed Quality Assurance Plan, which will outline key work stages and inspection points. The contractor will ensure that all work meets the required quality standards and complies with relevant construction specifications. Inspection, testing, and commissioning procedures will be managed by the contractor, and all records will be maintained to demonstrate compliance with contractual and quality requirements.

4.2. HEALTH AND SAFETY

The contractor is expected to prepare a full Health and Safety plan as part of the contract. This will include consideration of construction management, staff training and inductions, traffic management and site visitors and is expected to include the following as a minimum:

- An on-site briefing will be held with all construction staff at the start of their employment. This will comprise a reminder to drivers to follow prescribed transport routes, obey all road rules and cover any notable aspects of construction that would affect the road network, such as the arrival of over-dimension vehicles or any works within the road reserve.
- All staff will be required to report any incidents or near-misses to the Site Manager. Any action will be undertaken as required and all other staff will be informed accordingly first highlighting the risk and then how to avoid or mitigate the risk.
- Any visitors to the site will be required to report to the Site Manager. This person's contact details will be provided at the site entrance.

PPE Requirements

- Clothing that covers the body
- Safety footwear
- Gloves (if soil is handled)
- Dust masks (P2 dust masks, if there is a potential for the generation of contaminated dust)
- Safety glasses
- Hard hat (if working around plant)
- Hi-vis vest

PPE requirements may vary depending on the activities performed. Role specific PPE requirements to be considered and managed by the contractor. Should any asbestos be identified during earthworks, accidental discovery, management procedures and additional PPE controls may be required as directed.

4.3. SITE INDUCTION

With respect to a site Induction, at a minimum, the following is required to be included:

- Basic roles and responsibilities
- Specific locations within the site of environmental significance or risks
- Cultural importance of the site
- Scope and conditions of resource consent
- How to report incidents and hazards
- Control measures (e.g. Noise and Vibration)

- Procedures for managing storm events (wind and rain)
- Accidental Discovery Protocols
- Sign in/Sign out
- Site management contact details
- Operational hours
- WHS responsibilities
- PPE
- Site Rules
- Site specific locations, or risks
- Cultural importance and accidental discovery protocols
- Hazard identification and incident reporting
- Emergency procedures
- Weather procedures
- Environmental management and ESC
- Site amenities

The induction process shall be prepared by the Construction Contractor prior to construction commencing onsite. Inductions are to be in accordance with the relevant New Zealand Legislation.

All Project personnel (excluding visitors and delivery drivers) will be required to complete an online site induction, and records of online inductions will be maintained.

4.4. PRE-STARTS AND TOOLBOXES

Staff and contractors will attend daily pre-start meetings, which include the details of any urgent matters such as breached protocols or procedures, discussions of safe work practices, work area restrictions, activities that may affect the works, coordination with other trades, hazards, environmental matters, site access and safe driving tips, and other information that may be relevant to the day's work. Daily pre-start meetings are generally succinct and take approximately 10-15 minutes.

Longer toolbox talks will occur weekly where staff and contractors will be made aware of any less urgent matters and reinforce training on implementing protocols and procedures.

Typical environmental topics discussed at pre-start meetings and toolbox talks include:

- Vegetation clearing and protection
- Erosion and sedimentation management
- Noise, vibration, and air quality management
- Management of identified heritage items
- Emergency procedures

Pre-start meetings and toolbox talks will be prepared and delivered by the Health, Safety and Environment Manager (or delegate), with input from the Environmental Manager and Environmental Engineer as required. A register of pre-start meetings and toolbox talks will be kept on site and maintained by the HSE manager.

4.5. MANAGEMENT OF SUB-CONTRACTORS

The main contractor is to ensure all sub-contractors adhere to the Site Induction process and adhere to the requirements of this Construction Management Plan.

4.6. HAZARD MINIMISATION PROCEDURES

The contractor will provide a comprehensive Health & Safety Risk Management plan, which will include hazard identification, control measures, and a Health & Safety Risk Register to record and mitigate risks. The contractor will be responsible for conducting risk assessments and ensuring that appropriate actions are taken to manage identified risks.

The following procedures to minimise hazards related to contaminated soil will be implemented by the contractor:

- Dust controls, according to the procedures set out in Section 5.4.1 Dust Control
- Contact with potentially contaminated material is expected to be minimal because the excavations are proposed to be undertaken using machinery. However, as a precautionary measure, any worker who is required to manually handle any soil will be required to wear disposable gloves.
- Maintaining good personnel hygiene, including:
    - No eating, drinking or smoking in the works area, whilst potentially contaminated soils are being excavated to prevent contaminated soil from contacting food or being ingested directly through soiled hands.
    - Avoiding hand-to-mouth and hand-to-face contact during work with potentially contaminated soils.
    - Washing boots if contaminated soil has been contacted.
    - Disposing of gloves that have made contact with contaminated material.
    - Hands and face will be washed before eating, drinking and smoking, which is only permitted where site personnel are offsite or in designated areas.

4.7. NOTIFICATION AND MANAGEMENT OF INCIDENTS

Serious accidents or emergencies must be reported immediately to the relevant emergency services.

All reports of accidents and other environmental emergencies, regardless of their origin are to be reported to the Site Manager. An environmental emergency is any event that causes or has the potential to cause material harm to the environment or people.

Where disruption to traffic or significant damage has occurred within the roading network the appropriate road controlling authority shall be notified immediately.

Environmental incidents shall be responded to immediately as the Project team becomes aware of them.

For pollution related incidents, the Project Manager shall notify the WBOPDC or BOPRC of the details of any pollution related Environmental Incident within 12 hours of becoming aware of the incident. This will be through to BOPRC's pollution hotline (0800 884 883), or via the online form https://www.boprc.govt.nz/do-it-online/pollution-hotline/.

For health and safety related incidents, refer to the Health & Safety Risk Management plan prepared by the contractor.

4.7.1. ENVIRONMENTAL INCIDENT PROTOCOLS

An Environmental Incident is an event that may cause harm or potential harm to an environmental receptor e.g. air, water, land, wildlife or local habitat.

Please follow the following procedures when an Environmental Incident occurs:

- If there is an emergency, dial 111 immediately.
- In the event of an environmental incident between the hours of 07:00 and 18:00 Monday to Friday, the incident must be reported immediately to the Site Office who will contact the appropriate person or company to deal with the incident.
- In the event of an environmental incident between the hours of 18:00 and 07:00 Monday to Friday, all day Saturday and Sunday, or on-site closure days and public holidays, the incident must be reported to site manager who will contact the contractor who will deal with the event.
- If the incident cannot be managed internally, the Duty Engineer or appropriate person should consult the 'Emergency Contractor Details Contact List' which is managed by the main contractor.
- A spill response process is operated by the main contractor who can deploy a spill kit to prevent spills spreading or proceeding off site, unless the spill is beyond their capacity in which case external support is brought in (See the Emergency Contractor Details Contact List).
- The appropriate person/company then deals with the incident and prevents or mitigates adverse environmental damage.
- After an incident, the person responsible for dealing with the incident should fill out an Environmental Incident Report Form on the BOPRC website https://www.boprc.govt.nz/do-it-online/pollution-hotline/

4.8. RECORDS AND REGISTERS

The following records will be collated onsite and shall be available on request by the District or Regional Council.

These records will include the following:

- Site Induction attendance register
- Environmental incident reports and associated corrective actions undertaken
- Post-rain event inspection observations and corrective actions
- Weekly Site Inspection checklists
- Daily sediment and erosion control inspections

All records will be kept in an organised central location and will be managed by the Project Manager. Tools for corrective actions can be found in the respective Construction Management Section.

5. CONSTRUCTION MANAGEMENT

5.1. SITE ACCESS, CONTROL, AND SECURITY

5.1.1. FENCING

The contractor(s) will finalize the fencing plan once selected. Temporary fencing with secure gates will be installed along each stage boundary as the development progresses. Specific details regarding security measures will be confirmed by the selected contractor for each phase of works.

5.1.2. ACCESS AND CONTROL

The site access and delivery plan will be finalized by the contractor. Specific details regarding the site amenities and notification strategy will be confirmed by the contractor upon selection. The contractor will also manage the hazard register and monitoring of the site entry and exit points.

5.1.3. PARKING

Onsite parking will be provided, and no contractor parking will be permitted on local roads or public parking spaces. The selected contractor will be responsible for finalizing and implementing a parking plan.

Construction access to the site is intended to be via Bell Road initially but will vary for each stage as development progresses.

The site access points will include gates and security checks as security measures.

Emergency vehicles will be able to access the site via Bell Road, if gates are locked outside of work times, a master key lock system will be used, with keys being retained in a prominent central location and available to the Project Manager, Site Construction Manager, site security, and other relevant personnel. During an emergency, a representative will usually meet emergency services at the access point. However, if required, locks and chains can be cut by emergency services for immediate access.

Specific signage, including hazard notification, PPE requirements, authorized entry, and site contact information, will be confirmed by the selected contractor. The contractor will be responsible for ensuring that all barriers, fencing, and signage are clearly visible and properly maintained during the construction process.

5.1.4. SECURITY & STORAGE

The contractor will ensure that the site, buildings, vehicles, tools, and equipment are secured to prevent unauthorized access. Specific security measures, including the use of padlocks and recorded surveillance, will be confirmed once the contractor is selected. The contractor will also be responsible for securing and storing materials, equipment, and machinery onsite.

5.2. TRAFFIC AND PUBLIC SAFETY

The contractor will finalize traffic and public safety measures once selected. During the progress of the works, the contractor will ensure that all public streets, car parks, and footpaths affected by the project are kept clean and clear of obstruction. Specific details regarding signage, barriers, and any traffic management will be determined by the contractor. The contractor will develop a traffic management plan (TMP) to ensure public safety, including managing pedestrian traffic around the site, ensuring clear signage is placed to direct pedestrian and vehicular movements, and complying with the Traffic Management Plan (TMP) for safe diversion of pedestrians when necessary.

5.3. NOISE, VIBRATION, AND CONSTRUCTION DISTURBANCE

The development has no residential houses nearby except north of State Highway 2. To minimize noise and disturbance to surrounding residents and the public, the contractor will:

1. Identify potential disturbances and develop a mitigation plan.
2. Consult with neighbours to discuss construction activities and share the timing and expected impacts.
3. Notify stakeholders about construction hours and provide contact details for the Site Manager.
4. Construction hours will be from 7:30 am to 6:00 pm, Monday to Saturday, with noise restrictions that restrict operating machinery or power tools before 8:00 am and after 5:00 pm.

5.4. ENVIRONMENTAL MANAGEMENT

The contractor will develop and implement all necessary environmental measures to comply with the Resource Management Act (RMA) and any resource consent conditions.

5.4.1. DUST CONTROL

Dust control will be undertaken on the site on an as required basis to minimise the creation of dust and nuisance to neighbouring landowners. There are several methods on how dust will be managed at the site including the following potential controls listed below.

Dust must be managed during construction works to ensure that it generally complies with the MfE Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions (2016). To control the generation of dust, the contractor will ensure that the soils are regularly dampened down with a misting system, such as a water truck and/or portable water sprays, during dry and windy conditions. When utilising water to control dust, the contractor will ensure that:

- The volume of water used does not exceed soil field capacity of the wetted areas causing surface run-off that could discharge in stormwater systems or other waterways.
- The application of water does not induce soil erosion and/or soil pugging.
- Stockpiled material is covered.
- Vehicle access onto the works area is limited.
- Working in windy conditions is avoided, as far as practicable.

- A dust and odour complaints log will be maintained by the site contractor.
- Time and date of the complaint.
- Name and location of the complainant.
- Weather conditions, description of site activities, and location of site activities.
- Nature of the complaint.
- Mitigation measures undertaken and evaluation of effectiveness.

To manage potential dust effects, the following management measures are proposed:

1) The area exposed for earthworks will be minimised where possible, in accordance with the earthworks staging described in this report.
2) Upon completion of earthwork areas, stabilisation using the following methods to provide dust suppression;
    - Topsoiling and grassing.
    - Hydroseeding.
    - Using hay or straw mulching.
    - Metaling roads, laydown areas and pads.
    - Water cart (where required).
    - K-Line or standpipe irrigators
    - Stabilisation work shall be completed prior to the opening of any subsequent earthworks.
3) The consent holder shall ensure that an adequate supply of water for dust control and effective means of application is available on site at all times during earthworks, until such time as the earthworks area is fully stabilised.
4) In the event that wind conditions render dust control impractical, the client shall ensure that any machinery generating airborne dust ceases to operate until effective dust control is established.
5) In the event dust control management is in-effective and if found necessary, the client shall employ the use of soil stabilisers (such as polymers or similar) or weatherproof cover where possible.
6) Dust control will be monitored on a daily basis by the contractor and various measures employed as required to ensure dust pollution into neighbouring properties does not occur.
7) The Site Manager will inspect the earthworks area on a weekly basis (along with other erosion and sediment controls) and ensure that dust is being managed appropriately and the controls in place (such as water cart or stabilisation) are effective.
8) The Site Manager will also monitor available water in water take ponds, and will instruct the contractor ahead of time on any alternate dust suppression control measures.

If the water supply is interrupted works are to temporarily stop until alternative sources of water are found. A method of dust suppression, such as a water cart, shall be available onsite at all times to ensure dust is not transferred outside of the site boundaries.

5.5. SEDIMENT AND EROSION CONTROL MEASURES

Erosion and sediment control should align with the following sections and Maven's Earthworks Management Plan (Appendix U of the AEE).

5.5.1. SEDIMENT AND EROSION CONTROL PHILOSOPHY

The proposed erosion and sediment control philosophy for this site is as follows:

- Bulk earthworks are to be completed during suitable (fine or dry) weather, to limit the risk of erosion and sediment runoff.
- Stabilized entranceways are to be installed at all entrances into the site that will be used for construction traffic and are to be maintained throughout construction. If required wheel washes should be installed to ensure material is not tracked onto the roads.
- The existing farm drains located to the South and East of the site, will act as clean water diversion channels, ensuring any larger flows from upstream catchments are diverted away from the proposed earthworks areas.
- Proposed swale drains should be excavated, topsoiled and stabilized with mulch or geotextile lining. Swale drains should be stabilized prior to bulk earthworks starting.
- Once swales and civil boss pipe is installed, the larger culverts under the main road can be installed connecting the swales to the main swale running east to west. Collectively the existing and new swales will act as clean water diversion channels for any clean runoff across the site. Sediment traps will also be installed at the culvert inlets to capture any loose sediment dropout.
- Silt fences will be installed downslope of any earthworks areas that will have sheet flow runoff, and not exceed 3,000m² in area per silt fence. Silt fences will also be installed along the side proposed roads which are located upstream of existing farm drains.
- Dirty water cutoff V-channels should be installed where appropriate. Concentrated flows should be treated with sediment retention ponds with clean treated water from T-bars/upstands discharging into clean water diversion channels.
- Once erosion and sediment controls are in place, bulk earthworks can commence, with cut and filling occurring progressively.
- Once bulk earthworks are completed, the extent of earthworks will have either aggregate placed on top and compacted, OR topsoiled and grassed. Grassed should achieve at least 80% coverage before earthworks can be considered stabilized. Roading, Pads and Laydown areas will have a compacted aggregate finished which will be suitable as a stabilized surface. Areas requiring preload will utilize a hydro-mulch or similar product to ensure no dust in generated from these areas. Erosion and sediment control devices are to be kept in place until the completed works are fully stabilised, where required areas may require additional stabilisation to ensure complete grass cover.

5.5.2. STABILISATION AND REVEGETATION

It is proposed that stabilisation and revegetation is to occur progressively as earthworks are completed.

Acceptable stabilisation techniques are:

- Natural regeneration in low-risk areas.
- Topsoil and grassing.
- Hydroseeding.
- Mulching or metaling of roads, laydown areas and pads.
- Using hydromulch on stockpiles and preloading areas.

Once established, vegetation protects exposed soils from raindrop impact, reduces runoff velocity and volume, binds soil particles together and can also inhibit weed growth.

5.5.3. STOCKPILING

The areas and slopes of the stockpile will be determined by geotechnical engineers and will be stabilised progressively. It is expected that the stockpile will be 2.5m high with side slopes of no greater than 1V:2H. Sediment control devices will be appropriately stationed on the downstream side of the stockpile.

For temporary stockpiles expected to remain for less than 3 months, stabilisation will not be required unless there is a demonstrable risk of erosion. Stabilisation of temporary stockpiles may occur with geotextile covers or other suitable methods.

All stockpiles are to be positioned outside of the 100 m buffer of the identified wetlands and the Council drains.

Stockpiles will be constructed in line with good practice soil stockpiling. Stripping and stockpiling of topsoil and subsoil will be done separately.

5.5.4. STORMWATER AND SEDIMENT CONTROL

Erosion and sediment controls shall be put in place to ensure that the generation of potentially contaminated sediment and stormwater is minimised and managed.

Sediment controls will be undertaken in accordance with:

- The site-specific Earthworks Management Plan (EMP) - (Appendix U of the AEE)
- Industry best practice
- Erosion and sediment controls will be adequate to ensure that contaminated soil does not travel offsite

Daily inspections of erosion and sediment controls and the overall stormwater system will be conducted. Additional inspections will also be conducted following high rainfall events (above 5mm/h or 10mm per day). If the erosion and sediment control system has been breached, the offsite sediment will be immediately cleaned.

Any DEB or SRPs required onsite will require the contractor to provide a chemical treatment plan for approval by the project engineer.

5.5.5. MINIMISATION, REUSE AND RECYCLING

The disposal of waste products from the site will be minimised by recycling where possible. Separation and segregation of waste will be promoted on-site to enable reuse and recycling as a priority of the waste management program:

- On-site waste segregation – waste materials, including demolition waste and spoil, will be separated onsite into dedicated areas for collection by a licensed waste contractor and transported to licensed offsite facilities.
- Offsite waste separation – where space is not available for separation onsite, the waste is to be sorted at a suitable offsite location by the waste contractor.
- Cardboard and paper will be recycled.
- Materials that cannot be reused or recycled will be handled and disposed of appropriately

5.5.6. VEGETATION WASTE

The Site Contractor is to prioritise re-use as far as practical to minimise the generation of waste requiring to be taken off-site. Off-site re-use opportunities (transport to nearby environmental recovery projects or provision to councils or businesses) would also result in diversion of waste from landfill.

Any vegetation waste containing weeds will be appropriately disposed of to lower the risk of transferring plant material to other areas. Refuse transfer stations and certain green-waste facilities may be able to handle waste containing weeds appropriately.

5.5.7. WASTE HANDLING AND STORAGE

Waste from construction activities can contribute to environmental effects as well as create a nuisance to the public, neighbouring properties, and flora and fauna. The contractor for each stage will prepare a site specific waste management plan which will highlight what steps are being taken for each stage to minimize waste.

Waste that is unable to be reused or recycled will be disposed of at a licensed landfill or waste disposal facility. No waste will be disposed of onsite.

In circumstances where waste is required to be handled and stored on-site prior to reuse or offsite recycling/disposal, these measures apply:

- All recyclable or non-recyclable waste is properly stockpiled in appropriate locations on-site and contractors are commissioned to regularly remove this waste to licensed recycling or disposal facilities.
- Spoil, topsoil and mulch are to be stockpiled on-site in allocated areas where appropriate dust control and surface water management mitigation measures will be implemented.

- Liquid wastes are to be stored in appropriate containers in bunded areas until it is transported offsite. Bunded areas will have the capacity to hold 110% of the liquid waste volume for bulk storage, or 120% of the volume of the largest container for smaller packed storage.

Where waste is stockpiled, they are to be appropriately divided into their respective waste streams.

5.5.8. OIL AND FUEL SPILLS

By their very nature, hazardous substances can be extremely dangerous. Used incorrectly they can cause catastrophic accidents, such as fires and explosions, and serious harm to people who are exposed to them.

Specific controls are required to help manage the risks associated with using, handling or storing hazardous substances in the workplace and to protect the health and safety of workers and the environment. All hazardous substances stored on site, particularly overnight, pose a risk as (unintentional) discharges can have significant impacts on humans and the environment. Security is an important consideration in addition to appropriate bund capacity. At the time of contracts being awarded, the contractor will provide a comprehensive Chemical treatment plan for review and acceptance by the project engineer.

The contractor will finalize procedures for managing the risk of oil and fuel spills. The likely measure for containment is earth bunds and emergency spill kits.

5.5.9. SPILL PROTOCOL AND RESPONSE PROCEDURE

At least one person in every crew is trained in first aid. Non-injury emergencies will be advised to the Contractors Representative (or his delegate) immediately who will guide the process for handling the emergency.

The rapid, careful and effective clean-up of any spills is important in reducing the potential for spilled substances to pollute receiving waters.

Spill response materials:

- The contents of spill kits will be appropriate for the type of activity and any chemicals likely to be spilled as well as the location of the work. Hydrocarbon absorbing floating booms and pads will be located at all “high risk” areas adjacent to or over waterways for immediate deployment in the event of incidents.
- Spill response kits will be located in areas where there is a significant risk of spills and or in trucks/utes associated with the contract and checked for completeness and appropriateness on at least a monthly basis.

Spill response procedure:

- All personnel will inform their site supervisor of any spills and other incidents involving hazardous materials immediately, regardless of size.

- Minor spills (e.g. <5 L) may be cleaned up easily using a spill kit, shovel and plastic bag if on land however even small spills over waterways can have a larger effect and should be treated as a "major spill" pending satisfactory clean-up/resolution.
- Major spills (e.g. >5 L) or directly into a Waterway or stormwater system must be controlled and cleaned up in accordance with the following procedures which outline the spill response process and include emergency contact numbers.

The Site Manager must be notified immediately of any major spill or incidents involving hazardous materials via the relevant Supervisor.

The Bay of Plenty Regional Council will be notified of any major spill or incident which has the potential to pollute or impact on the environment. If its urgent the contractor will call 0800884883. For non-urgent spills the online form can be filled out. This form can be found here https://www.boprc.govt.nz/do-it-online/pollution-hotline/

5.5.10. HAZARDOUS WASTE DISPOSAL

Hazardous substances must be disposed of in a safe and thoughtful manner. Disposal of hazardous waste will be handled by a licensed contractor.

Hazardous waste below will be stored in separate containers on site:

- Chemicals
- Fuel
- Cleaning products
- Oily rags
- Filters
- Lead-acid or Nickel-cadmium batteries

5.5.11. TRACKABLE WASTE

Tracking is required for the most hazardous of substances, such as explosive, highly flammable and oxidising substances, and some poisons. The WorkSafe hazardous substances calculator will be used to identify if any waste requires tracking.

5.6. CONTAMINATED SOILS

5.6.1. ACCIDENTAL DISCOVERY AND MANAGEMENT OF UNEXPECTED CONTAMINATION

The presence of discoloured soils, staining, odours, fibrous material (such as presumed asbestos containing material), and general refuse may indicate possible contamination, and immediate steps will be undertaken to address the situation

Any material which is identified as contaminated, or suspected to be contaminated, as part of the unexpected contamination management procedures, will be excavated and loaded by the contractor directly onto trucks for off-site disposal.

If immediate disposal is not possible, material will be temporarily stockpiled in accordance with the procedures outlined below.

Table 4: Contingency Plan for Unexpected Discovery of Contamination

Event	Potential Impacts	Contingency Plan
Uncovering or disturbance of unexpected contamination – as evidenced by the following: Discoloured soils. Staining. Odours. General refuse. Fibrous materials (asbestos).	Discharges to the environment and risks to health and safety of workers.	Stop work in area of discovery. Area to be cordoned off until the material has been identified and decisions made on how to progress. Site Manager to be notified of any contaminated material identified. Site Manager to contact a Suitably Qualified and Experienced Person (SQEP) to assess the nature of the material. Work to re-commence only once advised by a SQEP.

5.7. ECOLOGICAL MANAGEMENT AND REMEDIATION

An Ecological Impact Assessment (EIA) has been completed by EcoLogical Solutions **(Appendix L of the AEE)**. This works done within the site will be done in accordance with the recommendations and methodology prescribed in that report.

5.8. CULTURAL HERITAGE

Prior to works commencing onsite the local iwi will be invited to offer a karakia over the site and the works being undertaken.

As part of the site inductions, a cultural heritage and discovery protocol induction will be included for all staff and visitors to the site.

If any items of significance are unexpectedly found during ground disturbing activities. All works on this Project will be undertaken in accordance with the obligations of the Heritage New Zealand Pouhere Taonga Act, 2014 (HNZPTA).

5.9. CONSTRUCTION EFFECTS & MITIGATION MEASURES SUMMARY

Table 5: Construction Effects & Mitigation Measurements

Construction Effects	Mitigation Measures
Noise	1. Construction Noise and Vibration Plan to be compiled and implemented. 2. Compliance with New Zealand Standard 6803:1999 for Acoustics – Construction Noise. 3. Hours of work – 7.30am – 6pm Monday to Saturday. 4. Plant choice – noise effects from certain items of plant will be considered when formulating construction methodology. 5. Plant assignment – The plant with the most noise impact can be restricted in both location and hours of operation. 6. Plant operation – methodology of plant operation can be adjusted to reduce noise impacts i.e. reversing alarms muted, soft closing tailgates and bin closure etc. 7. Acoustic Fencing can be erected in the more vulnerable area.
Vibration	1. Construction Noise and Vibration Plan to be compiled and implemented. 2. Compliance with Appendix B of DIN 4150-3:1999 *"Structural vibration – Part 3 Effects of vibration on structures"* 3. Geotechnical advice – understanding ground conditions and ground acceleration properties. 4. Monitoring – vibration monitoring can be undertaken on surrounding structures if deemed necessary. 5. Plant choice – vibration effects from certain items of plant will be considered when formulating construction methodology. 6. Plant assignment – the plant with the greatest impact on ground vibration can be restricted to certain areas of operation.
Water Quality	1. Adaptive Environmental Monitoring and Management Response Plan (AEMMRP) – A plan to set out the process of managing earthworks to effectively control the impacts of erosion and sediment mobilisation during construction. 2. Compliance with Auckland Council Technical Publication GD05 Guideline. 3. Chemical Treatment Plan (CTP) – to be developed and implemented into all treatment devices installed onsite. 4. Sediment monitoring – both automatic and manual sediment discharge can be monitored. 5. Accidental Contaminant Spillage – A spill plan and remediation kit to be available on-site.

Dust	1. Construction Management Plan to be compiled and implemented. 2. Monitoring – Weather conditions will be monitored to inform risk. 3. Dust suppressant systems can be implemented using K-Line or standpipe irrigators connected to a reliable source of water. Soaker hoses for stockpiles can also be implemented. 4. Dust suppressant additives can be applied to haul roads or other open areas as required. 5. Haul route maintenance – trimming of haul routes to keep loose material from traffic lanes can be implemented. 6. Haul route planning – location of haul routes can be planned to lessen impacts of dust generation. 7. Geotextile coverage – stockpiles or temporary work faces can be covered in geotextile to provide dust suppression.
Construction Traffic	1. Construction Traffic Management Plan (CTMP) – to be comprehensive and adaptive to enable minimal disruption to surrounding road users. The CTMP shall be formulated and implemented following the consultation with all other stakeholders. 2. Route planning – once supply locations are confirmed, a route can be planned considering impacts on schools, ECE centers etc. 3. Hours of operation – deliveries to site should consider residual traffic conditions and structure delivery times to avoid times of congestion. 4. Location of ingress and egress – construction entries and exits to consider locations relative to impacts on surrounding residents. 5. Ingress and egress logistics – temporary slip lanes or holding areas off existing carriageways to be considered for bulk deliveries. 6. Traffic management – temporary traffic lights or stop/go controls to be considered where frequent deliveries are likely to impact normal traffic flows.

6. DOCUMENT REVIEW

This CMP is intended to be the base to which contractors can update for each stage of works. A formal review of this Construction Management Plan and an amendments will be completed as and when necessary, following:

- Award of project to the Contractor.
- Any change to the Resource Consent.
- Any relevant major incident or outcome from an incident investigation.

7. CONCLUSIONS

The proposed methodologies outlined in this CMP have been designed to facilitate the required infrastructure for the Wairakei South FTA090 Development at Bell Road, Pāpāmoa, and in accordance with the following Management plans, forming the basis of good practise mitigation procedures.

- Earthworks Management Plan
- Stormwater Management Plan
- Construction Traffic Management Plan

8. LIMITATIONS

This report is solely for our clients use for the purpose for which it is intended in accordance with the agreed scope of work. It may not be disclosed to any person other than the client and any use or reliance by any person contrary to the above, to which Maven has not given its prior written consent, is prohibited. Notwithstanding the above, the Panel may rely on the assessments and conclusions in this report for the purposes of assessing and determining the fast-track application.

This report must be read in its entirety and no portion of it should be relied on without regard to the limitations and disclaimers set out.

Maven BOP Limited makes no assurances with respect to the accuracy of assumptions and exclusions listed within this report and some may vary significantly due to ongoing stakeholder engagement.