169-171 PEKA PEKA ROAD, WAIKANAE

WAIKANAE NORTH DEVELOPMENTS LTD (WNDL)

EROSION AND SEDIMENT CONTROL PLAN (ESCP)

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DOCUMENT CONTROL

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Note:
This ESCP should be read alongside Earthworks Plans (Sheets 200–299) and Stormwater Plans (Sheets 400–499)

GLOSSARY

Adaptive management	A framework linking monitoring results to staged design and construction decisions. Triggers and hold points ensure works proceed only when performance thresholds are met.
DEB – Decanting Earth Bund	A small-catchment sediment-control structure (≤ 0.3 ha) that detains runoff for settling before discharge. Typical volume ≈ 2 % of contributing catchment.
ESC – Erosion and Sediment Control	Collective term for all measures (devices, drains, fences, stabilisation) used to prevent erosion and minimise sediment discharge during earthworks.
FMP – Flocculation Management Plan	A certified plan describing design, chemical selection, dosing method, and contingency for floc-assisted sediment treatment.
GD01 / GD04	Auckland Council Stormwater Management Devices: Design Guidelines Manual (2017) and Water-Sensitive Design for Stormwater (2017) – referenced by GWRC for sizing SRPs/DEBs and treatment ratios.
GWRC ESC Guide (2021)	Erosion and Sediment Control Guide for Land-Disturbing Activities in the Wellington Region – the primary design and performance reference for this ESCP.
Hold point	A defined construction stage at which work pauses until monitoring results, inspections, or approvals confirm performance or compliance.
LDMR22	Kāpiti Coast District Council – Land Development Minimum Requirements 2022 – sets complementary local earthworks and infrastructure standards.
NRP Rules R159–R160	Rules in the Natural Resources Plan for the Wellington Region governing dewatering discharges and conditions under which they remain permitted.
TP10 (2003)	Auckland Regional Council – Stormwater Management Devices: Design Guidelines Manual. Superseded but still referenced for design ratios in GWRC guidance.
Winter Works ESCP	A specific, approved ESCP for earthworks between 1 June – 30 September, demonstrating heightened controls and limited open areas.

1.0 EXECUTIVE SUMMARY

This Erosion and Sediment Control Plan (ESCP) supports the Fast-track Approvals Act application for the full Waikanae North Development at 169-171 Peka Peka Road, Waikanae.

It outlines the framework for managing erosion and sediment effects from bulk earthworks, stream and drainage works, and infrastructure construction across the entire master-planned area.

The purpose of this report is to demonstrate feasibility and alignment with the Greater Wellington Regional Council (GWRC) Erosion and Sediment Control Guide (2021) and the Kāpiti Coast District Council Land Development Minimum Requirements (2022).

It establishes a site-wide strategy that provides confidence the proposed development can be undertaken in accordance with best practice while maintaining flexibility for detailed design and certification prior to the construction stage.

Key features of the strategy include:

- **Staged earthworks** with defined open-ground limits and progressive stabilisation.
- **Targeted controls by soil type**, recognising the differing behaviour of dune sands and peat soils.
- **Sensitive-edge protection** using super silt fence and bund systems adjacent to wetlands, drains and watercourses.
- **Monitoring, trigger, and hold-point controls** linked to flood-storage management to guide timing of watercourse realignments and weir construction.
- **Stage 1B** approach is limited to temporary access and haul-road crossings only — with no permanent works within a modified tributary of the Waimeha Stream proposed at this stage. The overall intent is re-naturalisation of the modified tributary over later stages (refer to Earthworks Plans (Sheets 200–299) and Stormwater Plans (Sheets 400–499)).
- **Allowance for existing culverts** to be retained or maintained subject to permitted culvert rules, and for temporary haul-road culverts identified on the Earthworks Plans (Sheets 200–299) and Stormwater Plans (Sheets 400–499).
- **Integrated discipline inputs** from hydrology, stormwater modelling, ecology, and geotechnical assessments.
- **Risk-based monitoring**, including temporary telemetry at key outlets during higher-risk phases.
- **A requirement for certification** of each construction stage prior to commencement, supported by inspection, maintenance, and monitoring programmes.

A detailed flood-storage assessment is set out in the AWA Environmental Stormwater Impact Assessment and the Stormwater Management Plan (SMP). As development progresses, the timing of the proposed weir construction and watercourse realignment

will be determined under the monitoring, trigger, and response framework to keep flood effects acceptably managed throughout staging.

This document therefore provides the consenting authority with assurance that:

1. The project has been developed on a robust technical and environmental basis;
2. Appropriate controls and contingencies have been identified for all foreseeable risks; and
3. Detailed ESCPs for each development stage will be certified prior to construction commencing on each stage, ensuring the final ESCP design remains responsive to site conditions and monitoring outcomes.

Expert Witness Code of Conduct

This report has been prepared by Joseph Harris, BE (Hons), Civil Engineering, a civil engineer experienced in erosion and sediment control, earthworks, and land development.

I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses set out in the Environment Court Practice Note 2023. This report has been prepared in accordance with that Code.

The opinions expressed are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from those opinions.

I confirm that, to the best of my knowledge, I am not subject to any conflict of interest in providing this assessment.

2.0 PURPOSE AND SCOPE

This ESCP supports the Fast-track resource consent application for the urban subdivision (and associated bulk earthworks) of 169-171 Peka Peka Road, Waikanae North.

It demonstrates that the proposed earthworks can be carried out in accordance with the GWRC Erosion and Sediment Control Guide for Land Disturbing Activities (2021) and the Kāpiti Coast District Council Land Development Minimum Requirements (2022).

This ESCP provides a consent-stage framework only. Final certification of stage-specific ESCPs (including detailed design, methodology, and device sizing) will occur post-consent, prior to construction. Certification will be progressive and staged, aligning with the construction programme, observed site conditions, and monitoring results.

The preparation of final ESCPs, for certification prior to construction, also benefits from the appointment of a contractor and provides for their input into the process.

Each construction stage, regardless of scale or area, will be supported by a stage-specific certified ESCP consistent with this framework, in line with established GWRC practice for multi-stage earthworks. This ensures every element of the works, including temporary or minor earthworks, is implemented under approved erosion and sediment controls.

3.0 BACKGROUND AND CONTEXT

3.1 Site and Development Overview

The application site lies immediately north of Waikanae's existing urban boundary. The proposed development provides approximately 1,200 private residential dwellings across the site. This is primarily comprised of standard residential lots, with a smaller component of medium-density housing, terrace housing, apartment units, and some commercial areas.

The proposal will be supported by the provision of requisite infrastructure, including pedestrian and cycle facilities (including a connection to the neighbouring State Highway cycleway, walkway and bridleway) and open space areas.

In addition, significant ecological restoration is proposed through the restoration of, and creation of new, wetland areas, and stream realignment and re-naturalisation.

The site includes existing drains, wetlands, modified watercourses and low-lying peat areas.

3.2 Key Site Features

Feature	Description
Topography	Flat to gently undulating in the east, rising to coastal dunes (RL ≈ 40 m) in the west.
Geology	Shallow peat and sand deposits in low areas; clean sand and dune soils in west.
Hydrology	Existing constructed drains converge to a tributary of the Waimeha Stream that has been highly modified (channelled); shallow groundwater in peat zones.
Ecology	Natural wetlands and localised areas of regenerating vegetation. Refer to Ecological Assessment for a detailed description.
Access	Initial access via Peka Peka Road; future east–west connections are provided for.

3.3 Integrated Design Approach

The ESCP has been prepared in coordination with:

- Stormwater Impact Assessment (AWA Environmental): Macro modelling assessment.
- Ecological Assessments (RMA Ecology): integrates wetland restoration, wetland construction and wider ecological restoration.
- Geotechnical Assessment (CGW): defines peat extent, soakage rates, and groundwater levels.
- Earthworks & Overall Scheme (Landlink): sets staging, material balance, and clean-fill areas.
- Infrastructure Report (OCDL/Landlink): outlines the overall servicing strategy and provides a an overview description of development staging and sequencing of works.

This integrated approach ensures erosion and sediment control measures are feasible, environmentally appropriate, and aligned with the stormwater and ecological objectives for the development.

4.0 GWRC PRE-APPLICATION ENGAGEMENT SUMMARY

4.1 Site Meeting and Walk-Over (30 July 2025)

Attendees: Gregor McLean (GWRC), Joseph Harris & Sushil Timsina (Landlink), Ray O'Callaghan (Hydrology).

Key discussion points:

1. Large, multi-year earthworks – importance of staging and rapid stabilisation.
2. Soil-type sensitivity – peat vs sand requires tailored controls.
3. Adaptive management – link staging, flood storage, and monitoring.
4. Iron oxide potential – floc or lamella treatment for peat water.
5. Monitoring – consider telemetered turbidity.
6. Wetland protection – super silt fence + bund combination preferred.
7. Winter works – require dedicated management and prior approval.

4.2 Responses in This ESCP

- Staged framework with open-ground limits.
- Sensitive-edge protection using super silt fences and bunds.
- Integrated flood storage modelling and stage-based monitoring and trigger controls.
- Provision for flocculation and iron-oxide management.
- Risk-based monitoring with rainfall triggers, including temporary telemetry at key outlets during higher-risk phases.
- Separate Winter Works ESCP commitment.

Section 12.0 summarises the matters within this ESCP that are relevant for consideration when preparing draft consent conditions.

5.0 PRINCIPLES FOR MINIMISING SEDIMENT DISCHARGES

This plan adopts the GWRC's fundamental principles (2021 Guide) with project-specific interpretation:

- Minimise disturbance and stage construction.
- Protect slopes and separate clean and dirty water.

- Maintain buffers to wetlands and drains and protect watercourses during works.
- Rapidly stabilise exposed areas (≤ 5 days, sooner if rain is forecast).
- Size and operate SRPs/DEBs per guideline and use flocculation where needed.
- Train and supervise site staff in ESC practices.
- Inspect, maintain and adapt controls before/after storms.
- Review performance and adjust the ESC Plan as the project progresses.
- Earthworks materials, placement and compaction will comply with KCDC Land Development Minimum Requirements (LDMR22), including requirements for engineered fill, cleanfill suitability, and protection of downstream infrastructure and drainage networks.

6.0 EROSION AND SEDIMENT CONTROL STRATEGY

6.1 Staging Framework

Earthworks will be completed in discrete sub-catchments draining to temporary SRPs or DEBs. Large SRPs are co-located with permanent basins for later reuse. Open ground limits are set to match available treatment capacity. Progressive stabilisation is mandatory before each new stage is opened.

Key risks associated with staging, soil type, and sensitivity are summarised in the Risk Register (Annex A).

6.2 Sensitive-Edge Protection

- Super silt fence + compacted bund (300–500 mm) combination downslope of wetlands, drains and watercourses.
- Silt socks or hay bales at concentrated inflows.
- Geotextile lining for temporary channels where gradients exceed 2 %.
- Vegetated buffers and hydroseeding to stabilise edges following works.
- Edge controls will be inspected weekly and after rain ≥ 10 mm, with maintenance triggered when sediment reaches roughly 20 % of fabric height.
- Site-wide erosion and sediment controls are implemented to manage off-site effects, including clean water diversion, dirty water containment, and protection of downstream receiving environments. These controls are integrated with the staging approach and ESC layouts.

6.3 Hill Zone – Clean Fill and Peat Replacement

A designated Hill Zone (as identified on the Earthworks Plans, Sheets 200–299) will remain available throughout each construction phase as a source of clean fill for same-day peat replacement and as a designated area for the placement of dried peat and temporary overburden. This area will be managed in accordance with the same erosion and sediment control principles, including perimeter drains, bunding, and rapid stabilisation.

Peat excavation, stockpiling, dewatering and reuse will be managed in accordance with the staging plans and ESC layouts, which identify stockpile areas, setbacks, bunding and treatment pathways.

Peat will be reused on site where practicable, with temporary stockpiling undertaken in controlled areas with appropriate bunding and runoff management. Detailed methodologies, including dewatering and stabilisation approaches, will be confirmed at the detailed design and certification stage.

6.4 Cut to waste

Where unsuitable material is encountered, it will be managed as cut-to-waste. Such material will be isolated from clean fill, temporarily contained to prevent sediment discharge, and either reused in appropriate locations or disposed of in accordance with approved earthworks practices. All cut-to-waste areas will be stabilised or managed under active erosion and sediment controls.

6.5 Traffic and Material Movement

The earthworks strategy is intended to achieve a near-balanced cut-to-fill outcome using site-won material. Peat will be managed on site where practicable, with any off-site disposal occurring progressively.

Construction traffic associated with infrastructure works (e.g. aggregates, pipe bedding) will occur progressively as works advance, rather than being concentrated within the bulk earthworks phase.

Stabilised site entrances, haul routes, and tracking controls will be implemented to minimise sediment tracking onto public roads.

6.6 Transition to Lot Works

As bulk earthworks transition to lot-level works, erosion and sediment controls will transition from site-wide devices to localised controls appropriate to the scale of disturbance.

Bulk earthworks controls will remain in place until contributing areas are stabilised or appropriate downstream controls are established for lot-level works.

6.7 Haul Roads

Haul roads will be stabilised and maintained to minimise sediment generation and tracking. Cross-drainage and runoff controls will be implemented where required, with detailed design confirmed at certification in accordance with GWRC ESC guidelines.

6.8 Slope Controls

Selection of erosion and sediment controls for slopes will be undertaken in accordance with GWRC guidelines, taking into account slope length, gradient, and contributing catchment area. Final control selection will be confirmed at detailed design.

6.9 Stream and Drain Works

6.9.1 Overview and Consent Framework

The application includes all stream-realignment, culvert, and drainage-modification works across the application site. Construction and certification of ESCPs will occur progressively under the monitoring, triggers, and response framework described in Section 8, ensuring each stage is refined and certified prior to commencement and informed by monitoring and detailed design.

All culvert, temporary crossing, dewatering and realignment activities shown on the Earthworks and Drainage Plans (refer to Earthworks Plans (Sheets 200–299) and Stormwater Plans (Sheets 400–499)) are included within the application to provide comprehensive authorisation under the fast-track pathway. Detailed ESCP certification will occur prior to each work package commencing.

The proposed stream crossings comprise both culvert and bridge structures, including temporary and permanent crossings, as shown on Earthworks Plan EW205. These structures are included within the application to provide for construction access, drainage continuity, and permanent connectivity across the site. They have been developed in coordination with the stormwater, ecological, and earthworks design packages.

6.9.2 Construction Methodology – Phase 1B Works

The Phase 1B earthworks plans are included to illustrate a representative example of how the site-wide erosion and sediment control framework will be applied in practice. They are not submitted for construction approval at this stage but provide a realistic sample area to confirm that the proposed controls, staging logic, and sediment-retention capacities are feasible. This example aligns with GWRC pre-application discussions to provide a representative stage for demonstrating feasibility within the overall Fast-Track framework (refer to Earthworks Plans (Sheets 200–299)).

Phase 1B works include the bulk earthworks and establishment of temporary access (haul-road) crossings required to maintain construction access. No permanent in-stream works within Ngarara Stream are proposed at this phase.

It is anticipated that existing culverts and farm crossings will be used for construction-vehicle movements and to provide access to future superlots in accordance with subdivision standards.

Where required for construction access, existing crossings may be temporarily strengthened using surface plating or similar measures that do not involve bed disturbance, undertaken in accordance with the general conditions for activities in the beds of lakes and rivers under Section 5.4.4 of the NRP.

No new culvert placement or widening is proposed for Phase 1B. As required, where existing crossings are retained or maintained, the relevant provisions of Rules R125 and R126 will be used as a benchmark where applicable, noting that both rules reference the general conditions for activities in the beds of lakes and rivers (Section 5.4.4).

Where temporary dewatering is required, works will comply with Rule R159 (permitted). If any condition cannot be met, the activity defaults to Rule R160 (restricted discretionary). Refer to Section 6.10 (Dewatering and Temporary Water Management) for additional commentary.

Final plant-access arrangements will be confirmed at detailed design and ESCP certification. All temporary crossings are expected to be removed or upgraded when permanent roads are constructed.

Refer to the Earthworks Plans (Sheets 200 – 299) for the extent of Phase 1B works, including bulk-earthworks areas and temporary-access routes.

6.9.3 Future Stream-Realignment Works

Subsequent phases of development will include the permanent realignment of sections of the Waimeha Stream tributary and associated surface drains within the site, as shown on the Earthworks and Stormwater Plans (Sheets 200–299 and 400-499). Stream realignment works are anticipated to commence during Phase 2 of the bulk earthworks programme. Commencement of stream realignment will be subject to upstream earthworks being sufficiently stabilised and appropriate flow diversion and erosion and sediment controls being in place to manage construction effects.

The conceptual sequencing of stream realignment works is outlined in the Infrastructure Report, which describes the broader staging and coordination of earthworks and servicing across the site.

Consent is sought for the stream-realignment activity in principle, with detailed design to be confirmed through certification prior to commencement of works. This certification process will operate under the monitoring, triggers, and response framework described in Section 8.0, allowing refinement of the final alignment, longitudinal grading, habitat features, and riparian planting design to support the required outcomes before implementation.

This approach provides flexibility to:

- verify updated hydrological and stormwater modelling, including any revised model runs or extended site monitoring;
- confirm that downstream effects remain acceptable; and
- optimise ecological restoration and mitigation measures in coordination with the RMA Ecology Ecological Restoration Management Plan.

Streamworks Plans will be prepared at the detailed design stage for certification prior to construction. These plans will confirm that:

- realigned channels replicate natural stream morphology, incorporating riffle–pool sequences, woody habitat, and riparian buffers;
- works are consistent with the Ecological Management and Wetland Restoration Plans; and
- flood storage areas, stream realignments, and constructed wetlands operate as an integrated stormwater management system consistent with the overall masterplan.

Certified Streamworks Plans will confirm final alignment, longitudinal grading, habitat features, and riparian planting prior to works.

All stream and wetland works will be undertaken under the supervision of suitably qualified ecologists and engineers, following certified Erosion and Sediment Control Plans (ESCPs) and streamworks methodologies.

Certification of the Earthworks Plans, including stream-realignment components, provides the formal mechanism to verify detailed design prior to works commencing. This certification framework, and the ability to refine details within consent parameters, will be secured through consent conditions.

6.9.4 Culverts and Associated Structures

The Earthworks and Stormwater Plans (Sheets 200–499) identify all proposed permanent and temporary crossings, haul-road culverts, and short drain diversions required to maintain drainage and construction access across the development.

Regulatory Context

Works in and adjacent to watercourses will be undertaken in accordance with the GWRC Erosion and Sediment Control Guide (2021) and the relevant provisions of the Natural Resources Plan for the Wellington Region, including the general conditions for activities in the beds of lakes and rivers (Section 5.4.4). At consent stage, culvert structures have been reviewed against Rule R126 as a benchmark only. A number of culverts exceed the dimensional thresholds in Rule R126. Detailed design of culverts and other stream crossing structures will have regard to the New Zealand Fish Passage Guidelines

(NIWA, 2018) and the intent of Clause 70 of the National Environmental Standards for Freshwater.

Culvert Inventory Summary

Table 6-1 summarises the culvert structures identified on EW205. Table 6-2 separately identifies bridge and slab crossing structures, which are included for completeness but are not assessed against the same R126 dimensional thresholds as culverts. At consent stage, the culvert inventory has been reviewed against the dimensional thresholds in Rule R126 based on size, form, and installed length. Detailed design will confirm final hydraulic performance, fish passage provisions, and constructability.

Table 6-1 Culvert Structures

Culvert Ref	Nominal Size	Length (m)	Type	Permitted Status (R126)
CULVERT C3	1.8 m Dia	12	Drain	✗ Exceeds size
CULVERT C5	2.1 m Dia	12	Drain	✗ Exceeds size
CULVERT C2	1.5 m Dia	13	Drain	✗ Exceeds size
CULVERT C1	1.5 m Dia	12	Drain	✗ Exceeds size
CULVERT S2	0.9 m Dia	22	Drain	✗ Exceeds length
CULVERT W1	0.525 m Dia	12	Drain	✓ Within limits
CULVERT W2	0.525 m Dia	12	Drain	✓ Within limits
CULVERT W3	0.525 m Dia	18	Drain	✓ Within limits

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CULVERT X1	***0.45 m Dia***	***12***	***Drain***	***✓Within limits***
CULVERT S3 (Ped)	***0.9 m Dia***	***8***	***Drain***	***✓Within limits***
CULVERT S1 (Ped)	***0.9 m Dia***	***9***	***Drain***	***✓Within limits***
CULVERT E1	***1.8 m Dia***	***38***	***Drain***	***✗Exceeds size & length***
CULVERT 05	***0.375 m Dia***	***14***	***Drain***	***✓Within limits***
CULVERT C4 (Ped)	***1.8 m Dia***	***11***	***Drain***	***✗Exceeds size***
CULVERT N1	***2.4 m Dia***	***21***	***Stream***	***✗Exceeds size & length***
CULVERT N5	***2.7 m Dia***	***17***	***Stream***	***✗Exceeds size***
CULVERT N8	***3.0 m Dia***	***12***	***Stream***	***✗Exceeds size***
CULVERT N3	***2.4 m Dia***	***12***	***Stream***	***✗Exceeds size***

CULVERT N11	***Twin box (2×2.0×0.8 m)***	***14***	***Stream***	***✗ Exceeds size***

Bridge and pedestrian crossing structures are identified separately in Table 6-2. They are included for completeness and are not assessed against the same dimensional thresholds as culverts under Rule R126. Further detail on these structures, including their role within the overall infrastructure and staging approach, is provided in the Infrastructure Report.

Table 6-2 Bridge and Slab Crossing Structures

Ref	*Type*	*Span*
BRIDGE N4 (Ped)	***Ped bridge***	***6 m***
BRIDGE N9 (Ped)	***Ped bridge***	***6 m***
BRIDGE N7 (Ped)	***Ped bridge***	***6 m***
BRIDGE N2 (Ped)	***Ped bridge***	***6 m***
BRIDGE N6 (Ped)	***Ped bridge***	***6 m***
B SLAB N10	***(Haul Rd bridge Slab)***	***4m***

The crossing inventory shown on EW205 includes 20 culvert structures and 5 bridge or slab crossing structures. At consent stage, the culvert structures have been reviewed against the dimensional thresholds in Rule R126 as a benchmark only. Of the 20 culvert structures identified, 8 are within the principal size and length thresholds in Rule R126 and 12 exceed one or more of those thresholds.

For avoidance of doubt, all culvert and crossing structures shown on EW205 are included within the Fast-track application, whether or not they fall within the Rule R126 dimensional thresholds.

Design Notes

- Detailed design of culverts and other stream crossing structures will be undertaken at the engineering design stage.
- Detailed design will have regard to the New Zealand Fish Passage Guidelines (NIWA, 2018) and the intent of Clause 70 of the National Environmental Standards for Freshwater.
- Final embedment, invert treatment, gradient, hydraulic performance, scour protection, and maintenance access will be confirmed through detailed design and certification.
- Culvert alignment and configuration will be refined to respond to site levels, channel conditions, ecological requirements, and constructability.
- Erosion and sediment controls for installation works will be implemented in accordance with this ESCP and the relevant certified stage plans.
- Detailed design will confirm final structure configuration, fish passage treatment, and hydraulic performance prior to construction.

6.10 Dewatering and Temporary Water Management

Regulatory Context

Compliance with the permitted-activity standards of Rule R159 (Dewatering – Permitted Activity) of the *Natural Resources Plan for the Wellington Region* has been assessed for typical construction and trench-dewatering activities associated with the proposed works.

Under Rule R159, the take, diversion and discharge of groundwater for dewatering is permitted provided all of the following key criteria are met:

- Each individual dewatering operation is short-term (≤ 1 month) and only for the duration required to complete the work.
- The discharge point is more than 20 m from any potable-water or stock-water bore.
- The activity does not occur on SLUR Category III land (*Selected Land-Use Register* – confirmed contaminated sites), within a Community Drinking-Water Protection Area (CDWPA), or on any HAIL site (*Hazardous Activities and Industries List*).
- The take and discharge cause no ground subsidence, flooding beyond the site boundary, or depletion of surface-water bodies.
- Where water is discharged to surface water, suspended-solids and clarity thresholds comply with R159 (g)(i)–(ii).

Activities that cannot meet all these criteria default to Rule R160 (Dewatering – Restricted Discretionary), where consent is required. Discretion is limited to the duration, location and rate of take, discharge quality, potential subsidence, interference with other takes, effects on surface water, contamination, and monitoring / reporting.

Assessment of Dewatering Activities

Four representative dewatering activities have been assessed against the R159 conditions: deep pump-station excavations, gravity-main trenching, peat-removal areas, and minor localised works. Most activities exceed the one-month duration limit under R159 (a) and therefore fall to R160 for approval within the Fast-Track pathway. Minor localised dewatering associated with shallow service trenches remains a permitted activity.

Table 6-3 Dewatering Check R159

Activity ID	Dewatering Activity Description	Key Features (duration, depth, discharge / treatment)	R159 Conditions Met (Summary)	R159 Conditions Not Met / Uncertain	Overall R159 Outcome
D1	Deep wastewater pump-station excavations	Localised but deep excavations; dewatering expected for several months. Water pumped to temporary sumps then to a Sediment Retention Pond (SRP) for settlement prior to controlled discharge / infiltration.	Discharge via SRP manages total suspended solids (TSS) and meets water-quality limits. > 20 m from KCDC (Kāpiti Coast District Council) bore. Not on SLUR III / HAIL land or within CDWPA. No off-site flooding or surface-water drawdown.	Duration > 1 month (R159 a).	**Not permitted – defaults to R160.**
D2	Gravity wastewater pipeline trenching	Sequential trench dewatering for deep mains; overall programme > 1 month. Discharge to SRP then land / drains.	Quality managed via SRP. > 20 m from KCDC bore (screen > 20 m depth). No SLUR III / HAIL land.	Aggregate duration > 1 month. Temporary groundwater-level change along alignment.	**Not permitted – defaults to R160.**

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D3	Peat removal and associated earthworks dewatering	Intermittent pumping to enable peat excavation / replacement; aggregate > 1 month. Discharge to shared SRP.	Integrated with earthworks SRP system. Natural soils, low contamination risk. Off-site flooding avoided.	Duration limit exceeded (R159 a). Potential short-term wetland drawdown uncertainty.	**Not permitted – defaults to R160.**
D4	Minor localised dewatering (manholes / services)	Small, shallow excavations; duration days – weeks. Discharge via silt bags or sumps to SRP / grassed areas.	Short duration and low volume. Quality managed by existing Erosion and Sediment Control (ESC) devices. > 20 m from bores. No subsidence or surface-water depletion.	None anticipated if short-term.	**Complies – permitted activity.**

Table 6-4 Dewatering Check R160

Activity ID	R159 Outcome	R160 Condition (depth in protection zones)	Key Matters of Discretion Engaged	Proposed Management / Consent Condition Themes

D1 – Pump station dewatering	Not permitted (duration / effects)	Not within CDWPA or Hutt Valley Aquifer Protection Zone.	Duration / location / rate of take. Discharge quality. Subsidence risk. Interference with bores / surface water. Monitoring.	Limit take to defined construction envelopes. Operate SRP for all flows with energy dissipation at outlets. Daily visual checks for iron / sheen / odour; pause and sample if observed. Settlement monitoring near deep excavations. Maintain pumping log.
D2 – Gravity main trench dewatering	Not permitted (duration > 1 month)	As above.	Duration and shifting location. Discharge quality. Shallow bore interference. Wetland fringe effects.	Manage in short reaches. Pump to SRP or use portable settling tanks. Apply same visual trigger for iron / odour response. Confirm bore setbacks and rate limits.
D3 – Peat removal dewatering	Not permitted (duration / wetland effects)	As above.	• Duration / volume. • Groundwater changes at wetlands. • High TSS and iron risk.	Route flows through SRP. Stage excavation to minimise drawdown area. Visual trigger for iron / sheen / odour with confirmatory sampling. Observe wetland levels and report unexpected changes.
D4 – Minor localised dewatering	Permitted under R159	N/A	Minor discharge quality / flooding risk.	Manage under Construction Environmental Management Plan (CEMP) / ESCP standard controls; notify Engineer if additional pumping required.

Integration with Earthworks and Sediment Retention Ponds

Consistent with the GWRC Erosion and Sediment Control Guide (2021), dewatering flows will be treated through on-site sediment retention ponds (SRPs) or temporary tanks before discharge. Dewatering activities in *Table 6-3* and *Table 6-4* will use the same SRPs and ESC devices as bulk earthworks, providing detention and settlement prior to release. The management measures, water-quality triggers, and response procedures in these tables form part of the integrated monitoring, trigger, and response framework outlined in Sections 8 and 9.

KCDC Production Bore – Non-Interference Statement

A Kāpiti Coast District Council (KCDC) production bore is understood to be located within the wider site. Based on information provided by Council, the bore abstracts from a confined aquifer more than 20 metres below ground level, whereas construction dewatering will target shallow groundwater within the upper alluvial and peat deposits. All dewatering discharge points will maintain a minimum horizontal separation of 20 metres from the production bore as part of the proposed works. This separation, together with the vertical confinement of the production aquifer, means the proposed dewatering activities are not expected to interfere with the KCDC potable-water supply or cause measurable drawdown within the screened interval, consistent with the intent of Rule R159(c) and the matters of discretion under Rule R160 relating to bore interference.

7.0 EROSION AND SEDIMENT CONTROL DESIGN AND SIZING

Indicative erosion and sediment control device sizing has been developed in accordance with GWRC Erosion and Sediment Control Guidelines (2021). For the purposes of this ESCP, device selection and application are based on maximum contributing catchment areas and control types appropriate to each stage.

Detailed device sizing, including sediment retention pond volumes, decant configurations, and diversion capacities, will be confirmed at the detailed design stage and certified prior to construction of each stage.

The criteria below provide the key design parameters applied to the sizing and layout of all controls shown on the Earthworks Plans (Sheets 200–299).

These values represent benchmark design assumptions for the Fast-Track application and will be confirmed or refined during detailed design and ESCP certification to reflect site-specific conditions and construction sequencing. Final device sizing will be confirmed at ESCP certification using device-specific design sheets.

Table 7-1 - Erosion and Sediment Control Design Criteria

Device	Key Design Criteria
Dirty-Water Diversions	Dirty-Water Diversions Grade ≤ 2 %; ≥ 300 mm freeboard; stabilise if > 2 %; provide drop-out pits on steeper sections.
Clean-Water Diversions	Convey up-slope runoff to stabilised outlet; line if velocity > 1 m/s.
Contour Drains	250 mm bank; 500 mm depth; ≤ 0.5 ha catchment.
Stabilised Entrances	15–20 m long × ≥ 4 m wide AP65 aggregate over geotextile.
Silt / Super Silt Fences	On contour; super type for > 0.3 ha or steeper catchments.
DEBs	≤ 0.3 ha catchment; volume ≈ 2 % of catchment; live storage 70 %.
SRPs	0.3–5 ha catchment; volume ≈ 3 % of catchment area; max depth 2.6 m; live:dead = 70:30; forebay + floating decant.

Flocculation	Bench-tested reagent; rainfall-activated or batch system; monitored.
Stabilisation	Hydroseed > 25 % slopes; mulch/blanket critical areas; stabilise within 5 days.

8.0 MONITORING, TRIGGERS AND RESPONSES FRAMEWORK

This ESCP adopts a monitoring and response framework to confirm that erosion and sediment controls are functioning effectively and that off-site effects are appropriately managed.

8.1 Monitoring Approach

Monitoring will be undertaken through a combination of:

- routine site inspections,
- rainfall-triggered inspections,
- visual assessment of discharge points, and
- targeted monitoring of high-risk discharge locations.

Monitoring will occur:

- during active earthworks,
- during and following rainfall events (≥10 mm in 24 hours), and
- at any time when discharges appear sediment-laden.

8.2 High-Risk Discharge Locations

High-risk discharge locations include:

- discharges from large contributing catchments,
- peat excavation and stockpile areas,
- discharge points to sensitive receiving environments, including the Ngarara Stream.

These locations will be subject to increased inspection frequency and monitoring.

8.3 Performance Triggers

The following performance triggers will be used to guide response actions:

Table 8-1 - Performance Triggers and Responses

Trigger	Response
Visible sediment discharge beyond expected levels	Inspect contributing area and controls; implement corrective measures
Sediment controls not functioning as intended	Repair, upgrade, or supplement controls
Tracking of sediment onto public roads	Clean affected areas and improve site access controls
Rainfall event ≥10 mm / 24 hrs	Undertake post-event inspection of all active controls

The triggers also form the performance basis for the consent-condition framework outlined in Section 12.

8.4 Response Actions

Where monitoring identifies that controls are not performing as intended:

- works in the contributing area will be reduced or temporarily ceased if required,
- erosion and sediment controls will be repaired, upgraded or supplemented,
- discharge pathways will be reviewed and stabilised,
- additional controls will be implemented where necessary.

Works will not progress into subsequent stages until controls are functioning effectively.

8.5 Certification and Stage Progression

Progression between stages will be subject to confirmation that:

- erosion and sediment controls are installed and operational,
- stabilisation has been achieved where required, and
- no unmanaged discharge pathways are present.

Detailed monitoring requirements and any additional conditions will be confirmed at the detailed design and certification stage.

9.0 MONITORING, MAINTENANCE AND CONTINGENCY

Section 8 sets out the trigger and response framework. This section addresses the routine inspection, maintenance, and contingency actions required to keep erosion and sediment controls functioning throughout construction.

The monitoring regime is risk-based, with inspection frequency increasing during higher-risk phases such as peat excavation or large exposed areas. Routine site inspections, rainfall-based checks, and corrective actions are summarised in Table 9-1, which are to be confirmed at ESCP certification. Monitoring intensity will scale with receiving-environment sensitivity, with telemetered turbidity at outlets draining to wetlands or streams during higher-risk phases.

Table 9-1 - Monitoring Frequency

Condition	Frequency / Action
Routine inspection	Weekly (dry conditions).
Forecast rain ≥ 10 mm / 24 h	Pre-event check, reinforce controls.
Post-rain ≥ 10 mm	Inspect ≤ 24 h; photo log; repair.
SRP sediment > 20 % volume	Remove sediment, restore capacity.
Heavy-rain alert	Secure bunds; add sandbags/socks.
Breach event	Contain, repair, notify Engineer & GWRC.

Continuous turbidity monitoring will be installed at up to two main discharge outlets during higher-risk phases (e.g. peat works or large open areas). At other times, post-event manual checks will be used. Monitoring frequency and locations will be proportionate to risk and confirmed during ESCP certification.

Monitoring priorities and trigger points correspond to the risk categories outlined in Annex A, which will be reviewed monthly during construction.

10.0 WINTER-WORKS PROTOCOL (JUNE–SEPTEMBER)

Although winter months (1 June – 30 September) typically present higher erosion and sediment risks, for this site it may be desirable to undertake certain earthworks during

winter. The sandy dune soils across much of the development area have high infiltration rates (as identified by CGW investigations), meaning sediment mobilisation can be lower in winter than during the drier months when soils are loose and friable. Undertaking some earthworks during winter may also better align with ecological timing constraints, including periods where nesting bird restrictions limit the practical construction window.

To manage residual risks, winter works will proceed only under a certified Winter Works ESCP, prepared and submitted each May. The Winter Works ESCP will define the specific staging, stabilisation methods, and monitoring arrangements applicable to that season. Any additional monitoring requirements—such as temporary telemetry or increased inspection frequency—will be detailed within the approved Winter Works ESCP and limited to the authorised winter-work areas. Winter works shall follow Section G6 of the GWRC ESC Guide (2021) and the certified Winter Works ESCP.

Winter earthworks may be required to respond to ecological constraints, including potential nesting bird restrictions that limit the available construction window. Enabling controlled winter works reduces the risk of prolonged site exposure and extended disturbance periods.

The site soils are predominantly sandy and free-draining, which reduces the risk of prolonged saturation compared to cohesive soils. However, recognising increased rainfall risk during winter, a conservative approach will be adopted.

Winter works will:

- be limited to smaller active disturbance areas (generally ≤ 3 ha at any one time);
- incorporate enhanced erosion and sediment controls;
- include increased sediment retention capacity where required; and
- be subject to increased monitoring and inspection.

A Winter Works ESCP will be prepared and certified prior to undertaking winter earthworks.

11.0 REVIEW, QUALITY AND CHANGE MANAGEMENT

The Erosion and Sediment Control Plan (ESCP) will be reviewed monthly and at each stage transition. The contractor will maintain a record of control performance, inspections, and maintenance activities to support ongoing compliance tracking.

It is proposed that the typical certification and oversight roles normally applied by GWRC and KCDC will be replicated through consent conditions. These conditions will mirror the intent of the GWRC Erosion and Sediment Control Guide (2021) for ESCP certification and the KCDC Land Development and Management Requirements (LDMR, 2022) for infrastructure design and reinstatement standards, providing a coordinated mechanism for certification, monitoring, and change management within a single approval framework.

All works will be undertaken in accordance with the following standards and approvals:

- *GWRC Erosion and Sediment Control Guide (2021)*;
- *KCDC LDMR (2022)*;
- *NZS 4404:2010 Land Development and Subdivision Infrastructure*, and
- *NZS 4431:1989 Code of Practice for Earth Fill for Residential Development*.

The consent conditions identified in Section 12 (Matters for Consideration in Consent Conditions) are intended to support and give effect to the monitoring, trigger, and response framework described in Sections 8 and 9. They establish the triggers, hold points, and review obligations that link monitoring results to construction staging and certification, ensuring environmental performance is verified before progression to subsequent stages.

Any material changes to controls or staging that alter certified designs will require GWRC re-certification prior to implementation.

12.0 MATTERS FOR CONSIDERATION IN CONSENT CONDITIONS

The following matters should be reflected in consent conditions to give effect to the erosion- and sediment-control framework described in this ESCP. They summarise the key commitments, triggers, and management controls intended for implementation through certified stage-specific plans.

Governance and Certification
Stage-specific ESCPs to be certified before each stage of works. Any material change to certified designs to require re-certification. Contractor to maintain inspection and performance records. Council may review or amend monitoring requirements where warranted.

Staging and Stabilisation
Construction to proceed in defined sub-catchments with progressive stabilisation. Open-ground limits tied to available sediment-retention capacity. Hold-points between stages until previous areas are stabilised.

Edge Protection and Sensitive Receivers
Use of super silt fence + bund systems downslope of wetlands and drains. Ecologist oversight for in-stream and wetland-edge works. Routine inspections and targeted telemetry at higher-risk outlets.

Sediment Retention and Flocculation
SRPs and DEBs designed and operated per guideline ratios. Flocculation Management Plan to be certified before use.

Dewatering and Temporary Water Management
Managed via SRPs or approved settlement devices. Maintain ≥ 20 m discharge setback from the KCDC production bore.

Works in and Adjacent to Watercourses
In-stream activities to follow NRP Section 5.4.4 general conditions. Certification of plans to confirm alignment, habitat features, and planting. Culverts to be detailed-designed having regard to fish passage guidance, hydraulic performance, and the Rule R126 benchmark assessment included in this ESCP.

Monitoring, Triggers and Stage Progression
Apply monitoring, trigger, and hold-point requirements focused on verifying performance before progression to new stages, including:

- Flood-storage capacity: maintain net 1 % AEP storage; no filling until verified by updated design surface or model snapshot.
- Hydraulic connectivity: maintain temporary overland-flow paths and restore drainage links where isolation occurs.
- Ecological readiness: align construction sequencing with restoration or planting dependencies.
- Slope stability: review and stabilise exposed surfaces before opening new sub-catchments.
- Peat and landscape-fill management: Manage settlement and stability in peat zones and confirm earth-fill methods are geotechnically appropriate.

Winter Works
Separate Winter Works ESCP required each May. Limit open areas; use sealed haul routes; stabilise progressively. Recognise potential benefits of winter earthworks in sandy soils subject to additional controls.

Documentation and Close-Out
Keep certified plans, logs, and monitoring records on-site. Provide stage close-out reporting confirming stabilisation and device condition. Submit as-built information for culverts, streamworks, and control devices.

13.0 ANNEXURES – RISK REGISTER

Purpose of this Register

This register identifies key construction-phase and environmental risks for the Waikanae North Developments Ltd project and summarises the rationale for their corresponding control measures.

The register focuses on the risk context and proportionate controls, avoiding duplication of detailed procedures.

Table 13-1 Risk Register

Area / Feature	Key Risk	Likelihood / Consequence	Risk Rating	Controls / Monitoring / Hold points (refer Section 8)	Engineering Judgement / Notes
Peat Zones	Mobilisation of iron oxides; groundwater drawdown during excavation	L: Medium / C: High	**High**	Same-day excavation & backfill; potential lamella clarifier for dewatering; turbidity & iron monitoring; controlled dewatering through sediment bags or flocculation-assisted treatment if required. Works paused if groundwater drawdown or batter distress observed (see Section 8).	Controlled dewatering under NRP R159–R160; environmental engineer / ecologist supervision if fish habitat present.

Western Wetland	Sediment discharge & ecological disturbance	L: Low / C: High	**Medium–High**	10 m buffer; super silt fence + bund; staged clearing after bird-nesting season (see Section 8 for hold point before clearing).	Super silt fence + bund selected per GWRC pre-app advice as highest practicable standard for wetland edge protection.
Dune Soils	Wind erosion & slope instability	L: Medium / C: Medium	**Medium**	Track-rolling; hydroseeding; erosion blankets; stabilise ≤ 5 days; inspect after rainfall ≥ 10 mm.	Short stabilisation window achievable due to rapid drying and available sand source.
Constructed Channels	Erosion of bed/banks during diversion	L: Low / C: High	**Medium–High**	Use natural bed materials (sand, clean topsoil, or inert fill) over peat base to reduce mobilisation of organic acids; stabilise with coir matting or fibre rolls; staged flow diversion and post-event inspection.	Peat substrates may release dissolved iron and organics when exposed to oxygen. A sand or inert capping layer isolates peat and promotes ecological activation. Roughened base incorporated to maintain fish passage and reduce velocities. Final material confirmed jointly with ecology and geotechnical specialists.
Haul-Road Culverts	Blockage or failure during wet weather	L: Medium / C: High	**High**	≥ 5 % AEP sizing; embedded 25 % depth with roughened base to maintain fish passage; inspection after rainfall > 10 mm (see Section 8 for method	Temporary works reviewed under ESC supervision; dewatering in isolated cells to avoid downstream

				confirmation before installation).	turbidity; fish passage maintained through roughened bed profile.
Hill-Zone Fill Source	Excessive open area; uncontrolled runoff	L: Medium / C: Medium	**Medium**	Limit exposed area; internal haul roads; progressive stabilisation; inspect after rainfall ≥ 10 mm.	Activated only when staging or material demand requires; part of same-day peat-replacement strategy.
Cut Batters – Temporary & Permanent	Localised slumping or surface erosion on exposed slopes; prolonged exposure leading to instability in peat or saturated sand	L: Medium / C: High	**High**	Maintain temporary batter heights ≤ 3 m unless specifically designed; limit exposed length < 20 m; contour drains at crest; compact & track-roll; apply hydroseed or blanket within 5 days; inspect after rainfall ≥ 10 mm and post-stage cut. If instability observed, works paused pending remedial stabilisation (see Section 8).	Batter geometry selected for temporary stability in variable soils; permanent cut slopes confirmed by geotechnical design. Stabilisation timing tied to weather forecasts; adaptive approach allows flattening / benching when monitoring identifies distress.