

Suggested consent conditions dated 22 April 2016

Water permit [33621]

Water permit to divert the flow of Duck Creek in the following manner:

- The permanent diversion of the full flow of two reaches of Duck Creek into newly constructed stream channels, being approximately 185 metres and 40 metres in length
- The permanent diversion of Duck Creek flood flows via modification of the contours of the existing floodplain in association with bulk earthworks
- The temporary diversion of the full flow of Duck Creek associated with the installation of structures in, under and over the bed of Duck Creek

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the activity shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira, at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:
 - a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent
 - b) The commencement date and expected duration of each stage of the works subject to this consent
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Field Code Changed

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments.
 - b) Statutory, consenting and contractual requirements
 - c) Responsibilities and contact details of all parties involved
 - d) Details of environmental site induction
 - e) Inspections, monitoring and reporting
 - f) Complaints and feedback procedures
 - g) Process for amending the Environmental Management Plan for Construction
 - h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the

Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.

Note: This condition does not restrict any planting works undertaken in accordance with the conditions of this consent.

Temporary diversions

12. The consent holder shall ensure that the construction activities are separated from flowing water by diverting the flow of Duck Creek around or away from the construction works area prior to the commencement of works.
13. Where temporary diversion pipes are used for any section of works, the discharge from the temporary diversions pipes shall be controlled so as to prevent scour at the outlets and shall be subject to erosion and sediment control measures.

Ecological Remediation and Compensation Plan

14. The consent holder shall prepare and submit an Ecological Remediation and Compensation Plan (EcoRCP) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** for approval prior to the proposed commencement date for the works authorised under this consent.

The EcoRCP shall be prepared by a person suitably qualified and experienced in Stream Ecological Valuation, in consultation with the engineer responsible for erosion control and the landscape designer. The environmental remediation and compensation shall as a minimum provide for 776 metres of riparian mitigation planting, and non-SEV compensatory measures, including the provision of approximately 210 metres of inanga spawning habitat from the northern site boundary up to but not including the remnant bush located adjacent to the property Lot 1444 DP 54453 at 24 Observatory Close.

The EcoRCP shall include, but not be limited to, the following:

- a) Updated SEV, including ECR calculations
- b) Details and plans of the location and width of riparian planting, and stream channel design including run, riffle, pool sequencing.
- c) Details and plans of the location of any non-compensative requirements within the identified riparian mitigation planting zone, including but not limited to any stormwater outlets, retention areas and other infrastructure, pathways, and maintenance

accessways, ~~and~~ as well as bank stabilisation measures in general accordance with those shown in Plan 251, as attached to the Joint Statement of the Flood and Erosion experts, dated 6 April 2016.

- d) Details of other non-SEV compensatory measures, including inanga spawning habitat enhancement.

The EcoRCP shall be the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to any works authorised by this consent commencing.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991. The provision of inanga spawning habitat may require further resource consent from Wellington Regional Council.

Permanent Diversions

15. The consent holder shall ensure that the construction of each permanent diversion, and each stage of the permanent diversions, is undertaken with input from a suitably qualified and experienced ecologist, and in general accordance with the guideline design parameters in the Urban Design and Landscape Plan submitted as Appendix 2 (Volume 2) of the application documents, and the following minimum requirements:

Design Element	Design Parameters
Width of wet bed <i>(between banks & including gravel bars to match as closely as possible with existing, normal flow conditions)</i>	<ul style="list-style-type: none"> • Mean = 2.25 m • Min = 1.8 m • Max = 3.1 m
Water Depth <i>(to match as closely as possible with existing, normal flow conditions)</i>	<ul style="list-style-type: none"> • Mean depth = 15 cm • Maximum depth = 60cm Depth to be determined by flow and type of habitat desired
Velocity <i>(to match as closely as possible with existing, normal flow conditions).</i>	<ul style="list-style-type: none"> • Run / Pool = between 0.2 m/s to 0.4 m/s • Riffles = between 0.4 m/s to 0.6 m/s
Bed Material <i>(to match as closely as possible with existing conditions)</i>	<ul style="list-style-type: none"> • 10% sand • 25% gravel • 35% small cobble • 30% large cobble
Hyporheic Zone	The bed shall have a hyporheic zone to a minimum depth of 1m below final bed level which shall be comprised of coarse material to form a deep gravel/cobble bed and functioning hyporheic zone.

<p>Channel Complexity <i>(3 key habitats to match as closely as possible with existing conditions)</i></p>	<ul style="list-style-type: none"> • 20% riffle • 20% pool • 60% run
<p>Channel Habitat Diversity <i>(the objective for this element is that channel habitat will increase over time to include all of these types)</i></p>	<ul style="list-style-type: none"> • Cobble riffle • Run – Pool • Root mat (from riparian vegetation)
<p>Shading <i>(Currently the creek's area is shaded approximately 30% based on overhanging banks, weedlands, and weedy aquatic macrophyte)</i></p>	<ul style="list-style-type: none"> • To attain a minimum (with re-vegetation) of 80% based on a canopy of native trees and shrub species, excluding the area set aside for inanga spawning. .
<p>Planting</p>	<p>Planting to achieve the following:</p> <ul style="list-style-type: none"> • Erosion control immediately following earthworks – hydro-seed with inter-planting • Riparian cover and stream shading • Weed control - elimination <p>A minimum of 80% of the riparian margin shall be planted, excluding the area set aside for inanga spawning.</p>

16. The constructed permanent diversion sections of Duck Creek shall achieve a total minimum length of 134 metres.

As-built Plans

17. At least 10 working days prior to diverting water through each new section of stream channel, the consent holder shall provide to the Manager, Environmental Regulation, Wellington Regional Council, as-built plans and information to confirm that the new stream channel has been constructed and stabilised in accordance with the conditions of this consent. This information shall include the location and length of the new section of stream channel, and the location and dimensions of structures constructed on the bed or banks of the stream.

Undertaking diversion works

18. The consent holder shall take all practicable steps to minimise sedimentation and increased turbidity of Duck Creek and Pauatahanui Inlet during the works, including:
- a) Completing each stage of the works in the minimum time practicable
 - b) Avoiding placement of construction material or excavated matter in the flowing channel
 - c) Separating construction activities from flowing water

- d) Stabilisation of the new sections of stream channel prior to diversion.

Inanga spawning

19. No in-stream works relating to the permanent diversion shall be carried out in the active channel (i.e. flowing water in the stream bed) between 1 March and 31 May, to provide for inanga spawning.
20. No other in-stream works, including temporary diversions, shall be carried out in the active channel (i.e. flowing water in the stream bed) during a spring tide between 1 March and 31 May, within 1.5 hours of high tide, being a three hour period in total, to provide for inanga spawning.

Fish passage and relocation

21. No in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) during the key recruitment migration period for native fish species of 1 September to 30 November inclusive, unless otherwise approved in writing by the Manager, Environmental Regulation, Wellington Regional Council.
22. During the diversion of water into a temporary channel or new channel, or following diversion of the stream back to its original course, the consent holder shall take all practicable steps to find, capture and relocate fish from the affected reach. This shall include checking the affected stream channel, wetted banks and vegetation during dewatering and then regular checks for a period of 2 hours following diversion of the stream. The consent holder shall ensure that any fish found stranded as a result of the works are collected with a soft meshed net or wet hands, and placed in an oxygenated container for no longer than one hour before being transferred as soon as possible and within one hour at least two hundred metres upstream of the works site into a clear flowing section of Duck Creek.

A detailed fish relocation methodology shall be set out in the Environmental Monitoring and Adaptive Management Plan, in general accordance with the draft EMAMP.

23. The consent holder shall undertake the construction works in a manner that ensures that fish passage in Duck Creek, and through any temporary diversions pipes or channels, is maintained at all times. Immediately following formation of the new stream channel and prior to water being diverted into the new stream channel, an inspection of all structures or deposits within the diversion channel shall be undertaken to assess if they will provide fish passage for all native species currently known to occur or reasonably likely to occur within the stream. The consent holder shall submit an advisory note to confirm fish passage, or recommend work to ensure fish passage, to the Manager, Environmental Regulation, Wellington Regional Council, at least 5 working days prior to water being diverted into the new stream channel.

Inspection of Stream Channel

24. Between 12 and 24 months following the diversion of water through each new section of stream channel, the consent holder shall carry out an inspection of the runs, riffles and pools, and meanders and rip rap within the new section

of stream channel to determine whether these elements are reducing the velocity of flow as proposed in the application and whether any bed level adjustment and/or stream channel erosion has occurred during flood flows. The inspection shall be carried out by a suitably qualified and experienced environmental engineer.

25. An inspection report shall be provided to the Manager, Environmental Regulation, Wellington Regional Council within one month of completing the inspection required under condition 24. The report shall provide a description of the state of the stream channel and the grade control structures, and any recommendations for improvements or additional works to reduce the flow velocity or likelihood of flooding. The consent holder shall implement any improvements authorised by the Manager, Environmental Regulation, Wellington Regional Council within timeframes to be agreed with the Manager, Environmental Regulation, Wellington Regional Council.

Baseline Monitoring Report

26. The consent holder shall engage a suitably qualified and experienced person to undertake baseline data measurements of deposited sediment, invertebrates, and surface water quality parameters (pH, turbidity suspended sediment concentration and total suspended solids), at sites DCN-01 to DCN-05 as a minimum. The water quality and deposited sediment sampling shall be undertaken for each of the following scenarios:
 - a) following a rainfall event of more than 4mm in one hour and/or 20mm in 24 hours, and
 - b) following a minimum of two weeks of no rainfall.

The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods are appropriate for the purpose of the baseline monitoring and wherever available use national protocols or guidelines. Five working days prior to undertaking the baseline monitoring, the consent holder shall provide to the Manager, Environmental Regulation, Wellington Regional Council, a Baseline Monitoring Plan which details the number of measurements to be taken, the monitoring locations, approximate sampling dates, and sampling and analysis methodologies to be used.

Note: Data derived for invertebrates should be quantitative, not semi-quantitative.

27. The consent holder shall provide a baseline monitoring report for Duck Creek at least **20 working days** prior to any works commencing under this consent, to the Manager, Environmental Regulation, Wellington Regional Council. The Baseline Monitoring Report shall include:
 - a) Historic data measurements of deposited sediment, invertebrates, fish and surface water quality parameters (pH, turbidity suspended sediment concentration and total suspended solids) for Duck Creek; and
 - b) Data measurements taken in accordance with condition 26 for deposited sediment, invertebrates, surface water quality parameters (pH, turbidity, suspended sediment concentration and total suspended solids)
 - c) The number of measurements taken, the monitoring locations, sampling

dates, flow conditions prior to sampling, and sampling and analysis methodologies used for the baseline data.

Water Quality and Sediment Monitoring

28. The consent holder shall engage a suitably qualified and experienced person to inspect the entire length of each new reach of stream channel, and sample and record the following parameters, at the downstream end of the new section of stream channel each day for a period of three days following the diversion of water through that stage of the stream channel. The first day of sampling shall commence within 24 hours of diverting water through the new channel. In addition, sampling and recording of the following parameters shall be undertaken at the same location, on at least two occasions, within 24 hours of a rainfall event over 4 mm in a one hour period, and/or 20 mm in a 24 hour period:
- a) pH
 - b) Temperature
 - c) Turbidity (NTU)
 - d) Total suspended solids
 - e) Suspended sediment concentration
29. For each monitored event undertaken in accordance with condition 28, photographs of the watercourse at, and up and downstream of the sampling point shall be taken and a monitoring report shall be completed, which shall include the following information:
- a) Date and time of the monitoring
 - b) Details of the person undertaking the monitoring
 - c) Nature of flow in Duck Creek
 - d) Weather conditions
 - e) Observed length of sediment plume
 - f) Presence of any effects listed in s107(1), (c) to (g) of the Resource Management Act 1991:
 - i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials
 - ii) any conspicuous change in the colour or visual clarity
 - iii) any emission of objectionable odour
 - iv) the rendering of fresh water unsuitable for consumption by farm animals
 - v) any significant adverse effects on aquatic life.

- g) Observations of sediment control devices
 - h) Recommendations for additional water quality investigations and timeframes for undertaking these.
30. The monitoring report required under condition 29 shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council within one month of each sampling event.
31. The recommendations of the monitoring report required by condition 29 shall be implemented by the consent holder to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council within the timeframes agreed to by the Manager, Environmental Regulation, Wellington Regional Council.

Environmental Monitoring and Adaptive Management Plan

32. The consent holder shall submit an **Environmental Monitoring and Adaptive Management Plan (EMAMP)** to the Manager, Environmental Regulation, Wellington Regional Council at least **20 working days** prior to the commencement date of any earthworks.

Each section of the EMAMP shall be prepared by a person suitably qualified and experienced in the subject addressed in that section.

The purpose of the EMAMP is to establish and implement a scientifically robust monitoring plan to monitor the health of Duck Creek and indirectly the Pauatahanui Inlet in terms of water quality, and aquatic habitat and fish passage, as it is realigned and collects treated discharges from the surrounding earthworks activities.

The EMAMP shall detail the methods for monitoring stream water quality, monitoring the health of the aquatic environment, fish relocation, [recolonisation of bed material](#), and monitoring fish passage, and provide an adaptive management framework whereby the results of water quality monitoring trigger appropriate responses. The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

The EMAMP shall include the following:

- a) The scope and environmental objectives of the monitoring encompassed by the EMAMP
- b) Identification of suitably qualified and experienced person(s) to undertake the monitoring
- c) The adaptive management process
- d) The location of all monitoring sites as shown on the plan attached to the draft EMAMP submitted with the application and contained in Appendix 8 (Volume 2) including a scaled aerial map, NZTM map references, and descriptions of all sites

- e) An overview of the sampling regimes and timing of sampling, for the site
- f) A description of the methodologies to be used for [fish relocation, recolonisation of bed material, and](#) each type of monitoring, including sample sizes and analysis methods, where relevant.
- g) Trigger levels for rainfall, pH, temperature, turbidity, suspended sediment concentration, total suspended solids, deposited sediment, and invertebrates
- h) The process to be followed in the event of an exceedence of any of these trigger levels
- i) Details on how each of the following monitoring regimes will be undertaken:
 - i) Rainfall event monitoring – Water quality
 - ii) Event triggered monitoring – Deposited sediment and Invertebrates
 - iii) Diversion monitoring – Design guidelines, Structures and Fish relocation
 - iv) Twice yearly monitoring – Water quality and Deposited sediment
 - v) Annual monitoring – Fish passage, Invertebrates, Marine sediment monitoring data and Riparian restoration () (SEV) and inanga habitat monitoring
- j) Reporting requirements
- k) Process for amending the EMAMP.

No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council, has certified in writing that the EMAMP is in general accordance with the draft EMAMP, submitted as Appendix 8 (Volume 2) of the application, and meets the requirements of all conditions of this consent.

33. The EMAMP shall be implemented by suitably qualified and experienced persons in accordance with the authorised plan (under condition 32 of this consent). Any amendment proposed by the consent holder to the authorised EMAMP shall be submitted in writing to the Manager, Environmental Regulation, Wellington Regional Council. The consent holder shall not implement any amendment to the EMAMP until that amendment has been authorised in writing by the Manager, Environmental Regulation, Wellington Regional Council.

General Monitoring Conditions

34. For each monitored event undertaken in accordance with the authorised EMAMP, a photograph of the watercourse at the sampling point shall be taken and a site record sheet shall be completed, which shall include the following information:
- a) Date and time of the monitoring
 - b) Details of the person undertaking the monitoring
 - c) Nature of flow in Duck Creek
 - d) Weather conditions

- e) The presence of:
 - i) any conspicuous oil or grease films, scums or foams, or floatable or suspended materials
 - ii) any conspicuous change in colour or visual clarity
 - iii) any emission of objectionable odour
 - iv) the rendering of fresh water unsuitable for consumption by farm animals
 - v) any significant adverse effects on aquatic life.
 - f) Observations of any sediment control devices directly, or indirectly treating discharges to Duck Creek and any recommendations for maintenance or additions to these controls; and
 - g) Recommendations for additional ecological investigations to determine the effects of the diversion and/or discharges on Duck Creek.
35. The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods to be included in the EMAMP, and used for the monitoring undertaken in accordance with the EMAMP, are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

Rainfall Monitoring

36. Rainfall monitoring shall be undertaken using the most appropriately located weather station(s) to determine whether the trigger level of 4 mm in one hour, and/or 20 mm in 24 hours has been reached. The data to support the selection of the weather station shall be provided in the EMAMP.

Water Quality Monitoring

37. Water quality monitoring of Duck Creek shall be undertaken following the exceedence of a rainfall event trigger for the following water quality parameters:
- a) pH
 - b) Temperature
 - c) Dissolved oxygen
 - d) Turbidity;
 - e) Total Suspended Solids and
 - f) Suspended Sediment Concentration.

The consent holder shall ensure that all water quality monitoring occurs as soon as practicable once the rainfall trigger level is reached and within a 12 hour time period. Water quality monitoring will be undertaken at the control site (located at the southern site boundary), and then all sites downstream of any areas where works are in progress, including areas where the site has not been stabilised in accordance with the conditions of discharge permit [33622]. Water quality monitoring shall occur at least three times a day while the rainfall event continues, and then 24 hours later.

38. The trigger levels for water quality monitoring shall be as follows:
- a) pH – An exceedence is deemed to have occurred if the pH is less than 5.5 or greater than 7.5
 - b) Turbidity – An exceedence is deemed to have occurred if the difference in NTU levels between the control site and the monitoring location is greater than 20%
 - c) Total Suspended Solids – An exceedence is deemed to have occurred if the difference in TSS concentrations between the control site and the monitoring location is greater than 20%, or a level of more than 150g/m³ is recorded
 - d) Suspended sediment concentration - An exceedence is deemed to have occurred if the difference in suspended sediment concentrations between the control site and the monitoring location is greater than 20%.
39. Each time any water quality trigger level is exceeded at any of the monitoring locations other than the control site, the consent holder shall:
- a) notify the Manager, Environmental Regulation, Wellington Regional Council in writing within 24 hours,
 - b) undertake an audit as set out in condition 40, and
 - c) undertake actions to minimise further exceedences, which may include temporary stabilisation of disturbed surfaces, installation of additional devices and batch dosing with flocculants.

Event triggered monitoring

40. A complete site audit shall be undertaken each time water quality monitoring indicates an exceedence of the water quality trigger levels. The site audit shall be undertaken as soon as practicable and within 24 hours of the trigger being exceeded. The site audit shall be additional to the weekly site audit required by discharge permit [33622]. The audit shall include, but not be limited to, the following information:
- a) Date
 - b) Name of auditor
 - c) Site condition
 - d) Weather conditions
 - e) Sediment management (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas)
 - f) Runoff control (check of diversion channels and check sediment retention ponds)
 - g) Condition of sediment control measures, including silt fences, contour

- drains and sediment retention ponds
- h) Check of operation of flocculation method; and
 - i) General comments.
41. Deposited sediment monitoring, using the method of visually estimating the percentage cover of fine sediments, shall be undertaken each time water quality monitoring indicates an exceedance of turbidity and/or total suspended solids trigger levels and the source of the exceedance is likely to be due to the on-site construction works. Deposited sediment monitoring will be undertaken at the control site DCN-01 (located at the southern site boundary), and all monitoring sites identified in the EMAMP downstream of any works authorised by this consent.
42. Invertebrate sampling shall be undertaken if:
- a) water quality monitoring; and/or
 - b) deposited sediment monitoring; and/or
 - c) other sources of information,

indicate a major sediment discharge has occurred that may have resulted in adverse effects on stream ecology. Invertebrate monitoring shall be undertaken following a minimum of two weeks of no rainfall. Invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring, with the exception of sites DCN-05, DCN-06 and DCN-07.

Note: Data derived should be quantitative, not semi-quantitative.

43. The results of the event triggered monitoring shall be provided in an **Event Triggered Monitoring Report**. In addition to the requirements of condition 56, the report shall include:
- a) The levels of exceedance
 - b) Monitoring results for the duration of the rainfall event until the discharges cease
 - c) The results of the trigger level site audit required by condition 40
 - d) Identification of probable causes of the exceedance and any measures that could have been taken to prevent it
 - e) Analysis of the performance of the erosion and sediment control device(s)
 - f) Immediate actions taken to minimise further exceedances.

Diversion monitoring – Design guidelines, fish passage and fish relocation

44. Prior to the diversion of water into each stage of the new stream channel, and within 5 working days following the diversion of water for each stage, an inspection of the new stream channel shall be undertaken of the design principles set out in condition 15 of this consent for:

- a) Width of wet bed;
- b) Water depth;
- c) Velocity of runs, pools, and riffles;
- d) Bed material; and
- e) Channel complexity.

The consent holder shall provide recommendations, where necessary, on any work to be undertaken to ensure compliance with the design principles set out in condition 15, and timeframes for implementing these recommendations, in the **Diversion Monitoring Report** required under condition 55.

Twice yearly monitoring – Water Quality and Deposited Sediment

45. Water quality and deposited sediment sampling shall be undertaken twice a year, in autumn (1 March – 31 May) and spring (1 September – 30 November), on a mid-ebb tide, following a minimum of two weeks of no rainfall, while the works authorised by this consent are being undertaken, and for two occasions following the completion of the earthworks and stabilisation of the entire site. The monitoring shall be undertaken at the control site DCN-01 (located at the southern site boundary) and downstream of the site (at monitoring locations DCN-02 to DCN-07). The results of this monitoring shall be provided in the **Progress Monitoring Reports** due by 15 July (for the autumn monitoring) and 15 January (for the spring monitoring) following each monitoring occasion, as required by condition 55 of this consent.

Annual Monitoring – Fish passage

46. Following the diversion of water through the first new stream channel, fish passage monitoring of all of the sites upstream of, and including, site DCN-05 shall be undertaken once between 1 December and 30 April. The fish passage monitoring shall include but not be limited to:
- a) a survey of the number of all fish species present upstream and downstream of the new channel diversion at monitoring sites DCN-03B including specific reference to the location of whitebait, elver, and inanga, and the size class distribution of banded kokopu, koura, and giant kokopu using national protocols for fish monitoring;
 - b) identification of any actual or potential impediments to fish passage.

This monitoring shall be undertaken annually for five years following the livening of the stream diversion.

Note: It is recommended that the fish monitoring data be uploaded to the New Zealand Freshwater Fish Database, currently administered by NIWA.

47. The results of the fish passage monitoring shall be provided in the **Progress Monitoring Report**. The results shall assess the performance of the diversion into the new stream channel section, in achieving fish passage. In addition to the requirements of condition 56, the report shall include:

- a) The results of the fish passage monitoring;
- b) Details of any modifications to the channel which may affect fish passage including the location and date of the modifications;
- c) An analysis of the results for all fish species present, including comparison with the baseline fish data, and data from any previous fish passage monitoring under this consent;
- d) Identification of any actual or potential impediments to fish passage;
- e) Recommendations for any remedial measures required to ensure fish passage; and
- f) The timeframe for implementing these recommendations.

Note: Works in the stream bed to enable fish passage may require additional resource consent.

Annual Monitoring – Invertebrates

48. Following the diversion of water into new stream channel, invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring or have occurred, with the exception of sites DCN-05, DCN-06 and DCN-07. Invertebrate monitoring shall be undertaken between 1 March and 31 May, each year. This monitoring shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of the invertebrate monitoring shall be provided in the **Progress Monitoring Report**.

Note: Data derived should be quantitative, not semi-quantitative.

Annual Monitoring review - Marine sediment monitoring data

49. A review of any available marine sediment monitoring data and deposited sediment data for the Duck Creek Saltmarsh and the Pauatahanui Inlet adjacent to the saltmarsh shall be undertaken once a year including a comparison of the data with the baseline monitoring results. This monitoring review shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of this analysis shall be provided in the **Progress Monitoring Reports** due on the 15 July as required by condition 55 of this consent.

Annual monitoring - Riparian Restoration (SEV) and Inanga Habitat Monitoring

50. The consent holder shall record all inanga habitat restoration works and riparian planting, monitoring and maintenance undertaken and submit this in the **Progress Monitoring Report** due on the 15 July.

The report shall include, but not be limited to, the following:

- a) A map showing the areas which have been planted compared to the agreed

mitigation areas, and the areas where inanga habitat restoration works have occurred

- b) Details of inanga habitat restoration works undertaken
 - c) Details of plants, including species, number and date planted
 - d) An assessment of overall plant success rates
 - e) An assessment of the quality of the inanga spawning habitat area
 - f) A representative measure of canopy cover at least every year until 80% canopy cover within and over the planted areas has been reached, excluding the area for inanga spawning habitat restoration
 - g) Photo points of representative planted areas and restored inanga habitat, taken annually
 - h) Details of any maintenance work undertaken
 - i) Details of any further works required to be undertaken
 - j) Recommendations for any on-going maintenance works.
51. The consent holder shall undertake an SEV analysis, between 1 September and 1 December, two years and five years following the permanent diversion of the flow into the new stream channel, or the initial landscaping and planting, whichever occurs later. The SEV analysis shall be carried out at the same sites as the SEV assessment reported in Appendix 3 (Volume 2) of the application including at least two monitoring sites within the new channel section, and at least two monitoring sites within the mitigation planting section of the existing stream channel, and at least two monitoring sites within the off site mitigation planting section.
52. The purpose of the SEV monitoring is to determine whether aquatic habitat and stream functions within the diversion and mitigation reaches have improved and either meet or are likely to meet the mitigation requirements established by the ECR analysis (predicted SEV scores in the SEV assessment reported in the Ecological Remediation and Compensation Plan).
53. The consent holder shall provide the results of the SEV analysis in the **Progress Monitoring Report** of the following year. The results shall include the numerical variables and values used to determine the SEV scores for each monitoring location.
54. The results of the monitoring set out in conditions 45-50, and any riparian restoration monitoring undertaken during the same period 1 September to 1 December shall be provided in a **Progress Monitoring Report**, of the following year (due either 15 January or 15 July).
- Reporting Requirements**
55. The consent holder shall engage a suitably qualified and experienced ecologist to prepare and submit to the Manger, Environmental Regulation,

Comment [MC1]: Just spotted this reference to off-site mitigation which needs to be deleted.

Wellington Regional Council and Ngāti Toa Rangatira, **Environmental Monitoring Reports (EMRs)** which detail the results of the monitoring set out in the EMAMP, with the exception of the baseline monitoring. EMRs shall be prepared and submitted within the stated timeframes as follows:

	Type of EMR	Purpose	Timeframe for submission
1	Water Quality Monitoring Report	Water quality results for each rainfall triggered event.	Within 5 working days of sampling.
2	Event Triggered Monitoring Report	Following the exceedence of a water quality trigger level.	Within 5 working days of undertaking the site audit and deposited sediment monitoring, and a final report within 3 months of undertaking any invertebrate sampling.
3	Diversion Monitoring Report	Following the completion of each diversion of Duck Creek.	Within 10 working days of completing the inspection.
4	Progress Monitoring Report	Annual and Twice yearly monitoring.	By 15 July and the 15 January, each year for the timeframe stipulated for each applicable monitoring activity.

56. Each EMR shall include, but not be limited to:
- a) The results of the monitoring undertaken;
 - b) An analysis of the results, as assessed by a suitably qualified and independent ecologist, and including an assessment of the effects that the works authorised under this consent are having on the aquatic ecosystems and ecological values at each monitoring location and on the stream as a whole;
 - c) Recommendations for amendments to the EMAMP, ECP, FMP and/or consent conditions, including, but not limited to:
 - i) Changes to flocculation method, dosing or material
 - ii) Changes in the management or implementation of erosion and sediment control measures or site management, and
 - iii) Adjustment of the water quality trigger levels

- iv) Changes to the water quality monitoring programme.

The person that the consent holder engages to prepare each EMR shall be suitably qualified and experienced to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

57. The approved recommendations of the EMR under condition 56 of this consent shall be undertaken by the consent holder to the satisfaction of, and within the timeframe specified by, the Manager, Environmental Regulation, Wellington Regional Council.

Note: Any amendments proposed to the approved EMAMP, ECP and/or FMP must be confirmed in writing by the consent holder and be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of the proposed amendments. Any amendments recommended to the conditions will require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

Complaints

58. The consent holder shall maintain a permanent record of any complaints received alleging adverse effects from or related to the works. This record shall include:
- a) The name and address of the complainant (if provided)
 - b) The date and time that the complaint was received
 - c) Details of the alleged event
 - d) Weather conditions at the time of the complaint, and
 - e) Any measures taken to mitigate/remedy the cause of the complaint

This record shall be made available to the Manager, Environmental Regulation, Wellington Regional Council, on request.

Discovery of artefacts

59. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under

[the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.](#)

Maintenance of works

~~5960~~. The works shall remain the responsibility of the consent holder and shall be maintained to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council so that:

- a) Any erosion, scour or instability of the stream bed or banks that is attributable to the works carried out as part of this consent is remedied by the consent holder, and
- b) Any adverse effects caused by the diversion that limits or restrict fish passage shall be rectified by the consent holder.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.

Review condition

~~6061~~. The Wellington Regional Council may review any or all conditions of this consent by giving notice of its intention to do so pursuant to Section 128 of the Resource Management Act 1991, within one month of each anniversary of the commencement of this consent, for the following purposes:

- a) To review the adequacy of any report and/or monitoring requirements, and if necessary, amend these requirements outlined in this consent
- b) To deal with any adverse effects on the environment that may arise from the exercise of this consent; and which are appropriate to deal with at a later stage
- c) To require the implementation of Best Practicable Options, in respect of new methodologies for the undertaking of the works to avoid, remedy or mitigate any significant adverse effect on the environment arising from the works
- d) To enable consistency with any relevant Regional Plans or any National Environmental Standards or Regulations.

The review of conditions shall allow for the deletion or amendment of

conditions of this consent; and the addition of such new conditions as are shown to be necessary to avoid, remedy or mitigate any significant adverse effects on the environment.

Note: For the purposes of this condition the “commencement of the consent” is deemed to be once the works authorised by this consent have commenced.

- 6+62. The Wellington Regional Council shall be entitled to recover from the consent holder the costs of any review, calculated in accordance with and limited to the Council’s scale of charges in force and applicable at that time pursuant to section 36 of the Resource Management Act 1991.

Discharge permit [33622]

Discharge permit to discharge sediment and chemical flocculants within treated stormwater runoff to Duck Creek, and to land where it may enter Duck Creek, in association with bulk earthworks for a residential subdivision

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the activity shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental

Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:

- a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent
 - b) The commencement date and expected duration of each stage of the works subject to this consent
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

Field Code Changed

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
- b) Statutory, consenting and contractual requirements
- c) Responsibilities and contact details of all parties involved
- d) Details of environmental site induction
- e) Inspections, monitoring and reporting
- f) Complaints and feedback procedures

- g) Process for amending the Environmental Management Plan for Construction
 - h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Baseline Monitoring

10. The consent holder shall engage a suitably qualified and experienced person to undertake baseline data measurements of deposited sediment, invertebrates, and surface water quality parameters (pH, turbidity, suspended sediment concentration and total suspended solids), at sites DCN-01 to DCN-05 as a minimum. The water quality and deposited sediment sampling shall be undertaken for each of the following scenarios:
- a) following a rainfall event of more than 4mm in one hour and/or 20mm in 24 hours, and
 - b) following a minimum of two weeks of no rainfall.

The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods are appropriate for the purpose of the baseline monitoring and wherever available use national protocols or guidelines. Five working days prior to undertaking the baseline monitoring, the consent holder shall provide to the Manager, Environmental Regulation, Wellington Regional Council, a Baseline Monitoring Plan which details the number of measurements to be taken, the monitoring locations, approximate sampling dates, and sampling and analysis methodologies to be used.

Note: Data derived for invertebrates should be quantitative, not semi-quantitative.

11. The consent holder shall provide a baseline monitoring report for Duck Creek at least **20 working days** prior to any works commencing under this consent,

to the Manager, Environmental Regulation, Wellington Regional Council. The Baseline Monitoring Report shall include:

- a) Historic data measurements of deposited sediment, invertebrates, fish and surface water quality parameters (pH, turbidity, suspended sediment concentration and total suspended solids) for Duck Creek; and
- b) Data measurements taken in accordance with condition 10 for deposited sediment, invertebrates, surface water quality parameters (pH, turbidity, suspended sediment concentration and total suspended solids)
- c) The number of measurements taken, the monitoring locations, sampling dates, flow conditions prior to sampling, and sampling and analysis methodologies used for the baseline data.

Pre-construction meeting

12. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

13. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
14. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. The stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Earthworks Construction Plan

15. The consent holder shall prepare, in consultation with the contractor undertaking the works, a final **Earthworks Construction Plan** (incorporating an Erosion and Sediment Control Plan) (ECP). The ECP shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council for approval at least **20 working days** prior to the works commencing.

The final ECP shall as a minimum be prepared in general accordance with the *Erosion and Sediment Control Guidelines for the Wellington Region (2002)*. The ECP shall reflect the measures outlined in the Environmental Management Plan (Construction), and the draft Earthworks Construction Plan - Stage 1 submitted as Appendix 7 of the application, as relevant to the stage of works, and shall include, but not be limited to, the following:

- a) Responsibilities and contact details of all parties responsible for the operation and maintenance of all key erosion and sediment control structures
- b) A detailed description of the works proposed and construction methodology and timetable
- c) Details of all principles, procedures and practices that will be implemented to undertake erosion and sediment control and minimise the potential for sediment discharge from the site
- d) The design criteria and dimensions of all key erosion and sediment control measures
- e) Plan(s) of an appropriate scale clearly identifying:
 - i) The location of all existing and proposed stream channels
 - ii) Staging sequence of erosion and sediment control measures
 - iii) Areas and cross sections of cut and fill
 - iv) The extent of soil disturbance and vegetation removal
 - v) Any “no go” and/or buffer areas to be maintained undisturbed
 - vi) Locations of topsoil stockpiles and haul roads
 - vii) All key erosion and sediment control measures, including diversion channels
 - viii) The boundaries and area of catchments contributing to all stormwater impoundment structures
 - ix) The locations of all specific points of discharge to the environment
 - x) Civil infrastructure to be constructed in relation to completed bulk earthworks areas, and
 - xi) Any other relevant site information
- f) Timetable and nature of progressive site rehabilitation and re-vegetation proposed, taking into account the requirements of the Ecological Remediation and Compensation Mitigation Plan.
- g) Maintenance, monitoring and reporting procedures and frequency
- h) Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control structures, and measures to ensure overland flow or flood waters are isolated from opened earthworks areas
- i) Procedures and timing for review and/or amendment to the ECP
- j) Decommissioning methodology for all erosion and sediment control measures
- k) Procedures for re-instating erosion and sediment control measures at the end of each working day, where applicable.

The ECP shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to any works authorised by this consent commencing.

16. Any amendments proposed to the approved ECP shall be confirmed in writing by the consent holder and be to the satisfaction of the Manager, Environmental

Regulation, Wellington Regional Council, **prior** to the implementation of any amendments proposed.

Flocculation Management Plan

17. The consent holder shall prepare, in consultation with a person suitably qualified and experienced in flocculant use, plan preparation and implementation a final Flocculation Management Plan (FMP). The FMP shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council for approval at least **10 working days** prior to the use of flocculant.

The FMP shall include, but not be limited to:

- a) Confirmation of the flocculant to be used and the method of flocculation to be used
- b) Alternative flocculant or method of flocculation to be used if the above method is found to be ineffective after use on site, including triggers and timeframes for making the change between methods
- c) Details of how the flocculation dosage will be triggered
- d) Details of optimum dosage rate calculated from the soils in the ponds catchment including details of the calculation including bench testing results
- e) Procedures to be undertaken if pH, turbidity or total suspended solids trigger levels are exceeded
- f) Procedures for the storage of flocculation chemical(s)
- onsite g) A flocculation chemical spill contingency plan
- h) Details of the monitoring programme including frequency of monitoring and reporting of results and testing of the following parameters:
 - i) pH
 - ii) Temperature (°C)
 - iii) Turbidity (NTU)
 - iv) Dissolved aluminium (g/m^3)
 - v) Total suspended solids (g/m^3)
 - vi) Suspended sediment concentration (g/m^3)
- i) Details of the water quality monitoring points for the above parameters. j) Details of rainfall event based monitoring
- k) Methods and responsibilities for monitoring and maintenance of the system
- l) Identification of a suitably qualified and experienced person and their specific responsibilities for ensuring the operation, monitoring and maintenance of the chemical flocculation system to ensure that it is operating as outlined in the FMP, and
- m) A plan for the decommissioning of flocculated sediment retention ponds.

Use of flocculant on site shall not commence prior to receiving written confirmation that the FMP is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Certification of the Erosion and Sediment Controls

18. Prior to the works commencing for each stage (as defined in the approved ESCP), the consent holder shall provide to the Manager, Environmental Regulation, Wellington Regional Council a certificate signed by an appropriately qualified and experienced engineer to certify that the erosion and sediment controls have been constructed in accordance with the **Earthworks Construction Plan** and **Flocculant Management Plan** approved under conditions 15 and 17 of this consent, and the *Erosion and Sediment Control Guidelines for the Wellington Region (2002)* as a minimum standard.

Certification shall include, but not be limited to, the following:

- a) Confirmation of contributing catchments, dimensions and storage volumes of sediment retention ponds, decanting earth bunds, silt fences and diversion channels/bunds as applicable
- b) As-built plans and photos of the key erosion and sediment controls measures, and
- c) Any other details that will facilitate assessment of compliance with the approved ESCP, approved FMP and the current Erosion and Sediment Control Guidelines for the Wellington Region

Certification shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and shall be submitted within **5 working days** of completing the assessment.

Note: The consent holder is advised to complete the sediment control device as-built check sheets available on the Greater Wellington Regional Council's website and to submit these with the certification required under this condition.

Permanent reclamation of Duck Creek

19. Sediment control and treatment measures shall be installed and maintained around the perimeter of the reclaimed area, to prevent the runoff of sediment laden water into the remaining stream channel. These measures shall remain in place, and shall be maintained until the reclaimed area is stabilised and re-vegetated to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Erosion and sediment control treatment requirements

20. The consent holder shall ensure that all stormwater contaminated with sediment from the site is treated by erosion and sediment control measures as detailed in the approved ESCP. The consent holder shall install, operate and maintain all erosion and sediment control measures to ensure that they operate

and perform as intended in accordance with the approved ESCP and as a minimum the *Erosion and Sediment Control Guidelines for the Wellington Region (2002)*.

21. The consent holder shall ensure that the maximum exposed area within the site is 3 hectares.
22. The consent holder shall ensure that the minimum size of the sediment retention ponds is 3.7% of the contributing catchment area.
23. The consent holder shall ensure that prior to the completion of operations each working day that all necessary erosion and sediment control measures are reinstated.
24. All erosion and sediment control measures shall remain the responsibility of the consent holder and no erosion or sediment control measures shall be removed prior to receiving written confirmation that the relevant stage is stabilised to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Site auditing requirements

25. The consent holder shall ensure that the site is audited by a suitably qualified and experienced person on a minimum of
 - a weekly basis, and
 - after a rainfall event of greater than 20 mm in a 24 hour period, or 7.4 mm in a one hour period, as measured at the rainfall monitoring site identified in the Environmental Monitoring and Adaptive Management Plan, or
 - at a frequency to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council

to ensure that the erosion and sediment control methods, including flocculation, are being maintained in accordance with the approved **Earthworks Construction Plan** and the **Flocculation Management Plan** required by conditions 15 and 17 of this permit.

The audits shall include, but not be limited to, the following information:

- a) Date
- b) Name of auditor
- c) Site condition
- d) Weather conditions
- e) Sediment management (including identification of problem areas that are

not being treated by sediment control measures, and any measures put in place to treat these areas)

- f) Runoff control (check of diversion channels and check sediment retention ponds)
- g) Condition of sediment control measures, including silt fences, contour drains and sediment retention ponds
- h) Check of operation of flocculation method
- i) Maintenance required and the date this will be completed by
- j) Contractor responsible for the maintenance; and
- k) General comments

Note: Audits will be required while any area is being cleared of vegetation and soil, or earthworked. Once an area has been stabilised or if there are no works occurring on site, audits may be undertaken at a lesser frequency.

- 26. The results of the audits as required by condition 25 shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council, no later than **10 working days following the audit.**

Rainfall and water quality monitoring

- 27. The consent holder shall sample and record the following parameters within any operative Sediment Retention Ponds (SRP), as soon as practicable within daylight hours after a rainfall event of greater than 4 mm in 1 hour or 20 mm in a 24 hour period as measured at the rainfall monitoring site identified in the EMAMP.

Parameter	Location			
	Inflow	Forebay	Pond	Outlet
pH	✓	✓	✓	✓
Temperature (°C)			✓	
Turbidity (NTU)	✓	✓	✓	✓
Total suspended solids (g/m ³)	✓	✓	✓	✓
Suspended sediment conc (g/m ³)	✓	✓	✓	✓

Note: The consent holder is only required to undertake outlet monitoring if the SRP is discharging.

- 28. When flocculation of any SRPs is occurring, and the SRP is discharging, in addition to the monitoring undertaken in accordance with condition 27, the

consent holder shall arrange for **weekly** site visits to be undertaken by a suitably qualified practitioner who shall sample and record the following parameters for each treated sediment retention ponds at the stated locations:

Parameter	Location			
	Inflow	Forebay	Pond	Outlet
pH		✓	✓	✓
Temperature (°C)			✓	
Turbidity (NTU)	✓			✓
Total suspended solids (g/m ³)	✓			✓
Suspended sediment conc (g/m ³)	✓			✓

29. The results of the monitoring undertaken in accordance with condition 27 and 28, except for suspended sediment concentration, shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council, within 2 working days of the date the sampling is undertaken. The results for suspended sediment concentration shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council, within 10 working days of the date the sampling is undertaken.

Batch dosing with Polyaluminium Chloride flocculant

30. If manual batch dosing of Polyaluminium Chloride flocculant of any SRP occurs, and the SRP is discharging, in addition to the monitoring undertaken in accordance with conditions 27 and 28, the consent holder shall obtain a water quality sample and analyse it for dissolved aluminium at the following monitoring sites:

- a) DCN-01 (control site)
- b) within the Sediment Retention Pond (SRP),
and
- c) water quality monitoring sites downstream of the discharging SRP.

Note: If flocculation using a different type of flocculant or method is proposed to be used which differs from that described in the application, this may require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

31. The results of the dissolved aluminium monitoring undertaken in accordance with condition 30 shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council, within 15 working days of the date the sampling is undertaken.

Cease dosing with Polyaluminium Chloride flocculant

32. When dosing any SRP with Polyaluminium Chloride flocculant and the

monitoring results under condition 27 or 28 indicate that the pH of any chemically-treated sediment retention pond outflow is at or below 5.5, and/or NTU values increase above 170, the dosing of that pond with Polyaluminium Chloride flocculant shall cease immediately. In this event the Manager, Environmental Regulation, Wellington Regional Council shall be notified immediately.

The consent holder shall liaise with the Manager, Environmental Regulation, Wellington Regional Council on an appropriate course of action.

Analysis and report on the effects of flocculation and Polyaluminium Chloride

33. Following 10 occurrences of dissolved aluminium water quality sampling, the consent holder shall undertake an analysis of the water quality results and the effect that the batch dosing of Polyaluminium Chloride flocculant is having on the aquatic ecosystems as assessed by a suitably qualified and independent flocculation specialist, with input from a suitably qualified and independent aquatic ecologist. The assessment shall include:

- a) The frequency of batch dosing with Polyaluminium Chloride flocculant, and the reasons for the frequency
- b) The results of all water quality testing while using Polyaluminium Chloride flocculant
- c) The effects of using Polyaluminium Chloride flocculant on the water quality and aquatic ecosystem of Duck Creek
- d) Any recommendations for changes to the process or procedures of flocculation of the SRPs; and
- e) Any recommended changes to the water quality monitoring regime (including monitoring locations, parameters) for batch dosing with Polyaluminium Chloride flocculant

A report of the assessment shall be provided to the Manager, Environmental Regulation, Wellington Regional Council within three months of receiving the results of the 10th occurrence of dissolved aluminium water quality sampling. Implementation of any amendments to the flocculation processes or procedures or water quality monitoring regime shall be to the satisfaction of, and within the timeframe specified by the Manager, Environmental Regulation, Wellington Regional Council.

Note: Any changes to the flocculation processes or procedures or water quality monitoring regime may also require the Earthworks Construction Plan and/or the Flocculation Management Plan to be updated, and may require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

Ceasing dosing with flocculant

34. The consent holder's requirements under condition 27 to 31 shall cease when the site has been completely stabilised and the pond(s) decommissioned or

with the written authorisation of the Manager, Environmental Regulation, Wellington Regional Council.

Progressive stabilisation

35. The consent holder shall progressively stabilise any disturbed areas as they complete each earthworks stage to minimise sediment runoff. Road surfaces shall be covered with rotor millings or road metal. The progressive stabilisation shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.
36. The consent holder shall ensure that a method of stabilisation (eg, hydroseeding) is applied to each open area at least within 2 weeks of completion of the cut or fill works for the stage. All stabilisation methods shall be effective within **two months** of being applied or after a longer period if approved in writing by the Manager, Environmental Regulation, Wellington Regional Council.
37. Each stage of works shall be stabilised before any further stages are undertaken, unless otherwise authorised in writing by the Manager, Environmental Regulation, Wellington Regional Council.

Environmental Monitoring and Adaptive Management Plan

38. The consent holder shall submit an **Environmental Monitoring and Adaptive Management Plan (EMAMP)** to the Manager, Environmental Regulation, Wellington Regional Council at least 20 working days prior to the commencement date of any earthworks.

Each section of the EMAMP shall be prepared by a person suitably qualified and experienced in the subject addressed in that section.

The purpose of the EMAMP is to establish and implement a scientifically robust monitoring plan to monitor the health of Duck Creek and indirectly the Pauatahanui Inlet in terms of water quality, and aquatic habitat and fish passage, as it is realigned and collects treated discharges from the surrounding earthworks activities.

The EMAMP shall detail the methods for monitoring stream water quality, monitoring the health of the aquatic environment, fish relocation, [recolonisation of bed material](#), and monitoring fish passage, and provide an adaptive management framework whereby the results of water quality monitoring trigger appropriate responses. The consent holder shall ensure that the monitoring locations, sample sizes, methodologies and analysis methods are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

The EMAMP shall include the following:

- a) The scope and environmental objectives of the monitoring encompassed by the EMAMP;
- b) Identification of suitably qualified and experienced person(s) to undertake the monitoring;
- c) The adaptive management process;

- d) The location of all monitoring sites as shown on the plan attached to the draft EMAMP submitted with the application and contained in Appendix 8 (Volume 2) including a scaled aerial map, NZTM map references, and descriptions of all sites;
- e) An overview of the sampling regimes and timing of sampling, for the site;
- f) A description of the methodologies to be used for fish relocation, recolonisation of bed material, and each type of monitoring, including sample sizes and analysis methods, where relevant;
- g) Trigger levels for rainfall, pH, temperature, turbidity, suspended sediment concentration, total suspended solids, deposited sediment, and invertebrates;
- h) The process to be followed in the event of an exceedence of any of these trigger levels;
- i) Details on how each of the following monitoring regimes will be undertaken:
 - i) Rainfall event monitoring – Water quality;
 - ii) Event triggered monitoring – Deposited sediment and Invertebrates;
 - iii) Diversion monitoring – Design guidelines, Structures and Fish relocation;
 - iv) Twice yearly monitoring – Water quality and Deposited sediment;
 - v) Annual monitoring – Fish passage, Invertebrates, Marine sediment monitoring data and Riparian restoration (SEV) and inanga habitat monitoring
- j) Reporting requirements;
- k) Process for amending the EMAMP; and
- l) All available results of the Baseline Monitoring.

No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council, has certified in writing that the EMAMP is in general accordance with the draft EMAMP, submitted as Appendix 8 (Volume 2) of the application, and meets the requirements of all conditions of this consent.

39. The EMAMP shall be implemented by suitably qualified and experienced persons in accordance with the authorised plan (under condition 38 of this consent). Any amendment proposed by the consent holder to the authorised EMAMP shall be submitted in writing to the Manager, Environmental Regulation, Wellington Regional Council. The consent holder shall not implement any amendment to the EMAMP until that amendment has been authorised in writing by the Manager, Environmental Regulation, Wellington Regional Council.

General Monitoring Conditions

40. For each monitored event undertaken in accordance with the authorised EMAMP, a photograph of the watercourse at the sampling point shall be taken and a site record sheet shall be completed, which shall include the following information:
- a) Date and time of the monitoring;
 - b) Details of the person undertaking the monitoring;
 - c) flow in Duck Creek;
 - d) Weather conditions;
 - e) The presence of:
 - i) any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - ii) any conspicuous change in colour or visual clarity;
 - iii) any emission of objectionable odour;
 - iv) the rendering of fresh water unsuitable for consumption by farm animals
 - v) any significant adverse effects on aquatic life.
 - f) Observations of any sediment control devices directly, or indirectly treating discharges to Duck Creek and any recommendations for maintenance or additions to these controls; and
 - g) Recommendations for additional ecological investigations to determine the effects of the diversion and/or discharges on Duck Creek.
41. The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods to be included in the EMAMP, and used for the monitoring undertaken in accordance with the EMAMP, are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

Rainfall Monitoring

42. Rainfall monitoring shall be undertaken using the most appropriately located weather station(s) to determine whether the trigger level of ~~7~~ 4 mm in one hour, and/or 20 mm in 24 hours has been reached. The data to support the selection of the weather station shall be provided in the EMAMP.

Water Quality Monitoring

43. Water quality monitoring of Duck Creek shall be undertaken following the exceedence of a rainfall event trigger for the following water quality parameters:

- a) pH;
- b) Temperature;
- c) Dissolved oxygen;
- d) Turbidity;
- e) Total Suspended Solids
- f) .Suspended solid concentration

The consent holder shall ensure that all water quality monitoring occurs as soon as practicable once the rainfall trigger level is reached and within a 12 hour time period. Water quality monitoring will be undertaken at the control site (located at the southern site boundary), and then all sites downstream of any areas where works are in progress, including areas where the site has not been stabilised in accordance with the conditions 35 to 37 of this consent. Water quality monitoring shall occur at least three times a day while the rainfall event continues, and then 24 hours after.

44. The trigger levels for water quality monitoring shall be as follows:
- a) pH – An exceedence is deemed to have occurred if the pH is less than 5.5 or greater than 7.5
 - b) Turbidity – An exceedence is deemed to have occurred if the difference in NTU levels between the control site and the monitoring location is greater than 20%
 - c) Total Suspended Solids – An exceedence is deemed to have occurred if the difference in TSS concentrations between the control site and the monitoring location is greater than 20%, or a level of more than 150g/m³ is recorded
 - d) Suspended sediment concentration – An exceedence is deemed to have occurred if the difference in suspended sediment concentrations between the control site and the monitoring location is greater than 20%.
45. Each time any water quality trigger level is exceeded at any of the monitoring locations other than the control site, the consent holder shall:
- a) notify the Manager, Environmental Regulation, Wellington Regional Council in writing within 24 hours,
 - b) undertake an audit as set out in condition 46, and
 - c) undertake actions to minimise further exceedences, which may include temporary stabilisation of disturbed surfaces, installation of additional devices and batch dosing with flocculants.

Event triggered monitoring

46. A complete site audit shall be undertaken each time water quality monitoring indicates an exceedence of the water quality trigger levels. The site audit shall be undertaken as soon as practicable and within 24 hours of the trigger being exceeded. The site audit shall be additional to the weekly site audit required by condition 25 of this consent. The audit shall include, but not be limited to, the following information:

- a) Date

- b) Name of auditor
- c) Site condition
- d) Weather conditions
- e) Sediment management (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas)
- f) Runoff control (check of diversion channels and check sediment retention ponds)
- g) Condition of sediment control measures, including silt fences, contour drains and sediment retention ponds
- h) Check of operation of flocculation method; and
- i) General comments.

47. Deposited sediment monitoring, using the method of visually estimating the percentage cover of fine sediments, shall be undertaken each time water quality monitoring indicates an exceedance of turbidity and/or total suspended solids trigger levels and the source of the exceedance is likely to be due to the on-site construction works. Deposited sediment monitoring will be undertaken at the control site DCN-01 (located at the southern site boundary), and all monitoring sites identified in the EMAMP downstream of any works authorised by this consent.

48. Invertebrate sampling shall be undertaken if:

- a) water quality monitoring; and/or
- b) deposited sediment monitoring; and/or
- c) other sources of information,

indicate a major sediment discharge has occurred that may have resulted in adverse effects on stream ecology. Invertebrate monitoring shall be undertaken following a minimum of two weeks of no rainfall. Invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring, with the exception of sites DCN-05, DCN-06 and DCN-07.

Note: Data derived should be quantitative, not semi-quantitative.

49. The results of the event triggered monitoring shall be provided in an **Event Triggered Monitoring Report**. In addition to the requirements of condition 62, the report shall include:

- a) The levels of exceedance

- b) Monitoring results for the duration of the rainfall event until the discharges cease
- c) The results of the trigger level site audit required by condition 46
- d) Identification of probable causes of the exceedance and any measures that could have been taken to prevent it
- e) Analysis of the performance of the erosion and sediment control device(s)
- f) Immediate actions taken to minimise further exceedances.

Diversion monitoring – Design guidelines, fish passage and fish relocation

50. Prior to the diversion of water into each stage of the new stream channel, and within 5 working days following the diversion of water for each stage, an inspection of the new stream channel shall be undertaken of the design principles set out in condition 15 of Water Permit [33621] for:

- a) Width of wet bed;
- b) Water depth;
- c) Velocity of runs, pools, and riffles;;
- d) Bed material; and
- e) Channel complexity.

The consent holder shall provide recommendations, where necessary, on any work to be undertaken to ensure compliance with the design principles set out in condition 15, and timeframes for implementing these recommendations, in the **Diversion Monitoring Report** required under condition 61.

Twice yearly monitoring – Water Quality and Deposited Sediment

51. Water quality and deposited sediment sampling shall be undertaken twice a year, in autumn (1 March – 31 May) and spring (1 September – 30 November), on a mid-ebb tide, following a minimum of two weeks of no rainfall, while the works authorised by this consent are being undertaken, and for two occasions following the completion of the earthworks and stabilisation of the entire site. The monitoring shall be undertaken at the control site DCN-01 (located at the southern site boundary) and downstream of the site at monitoring locations DCN-02 to DCN-07. The results of this monitoring shall be provided in the **Progress Monitoring Reports** due by 15 July (for the autumn monitoring) and 15 January (for the spring monitoring) following each monitoring occasion, as required by condition 61 of this consent.

Annual Monitoring – Fish passage

52. Following the diversion of water through the new stream channel, fish passage monitoring of all of the sites upstream of, and including, site DCN-05 shall be undertaken once between 1 December and 30 April. The fish passage monitoring shall include but not be limited to:

- a) a survey of the number of all fish species present upstream and downstream of the new channel diversion at monitoring sites DCN-03B including specific reference to the location of whitebait, elver, and inanga, and the size class distribution of banded kokopu, koura, and giant kokopu using national protocols for fish monitoring;
- b) identification of any actual or potential impediments to fish passage.

This monitoring shall be undertaken annually for five years following the livening of the stream diversion.

Note: It is recommended that the fish monitoring data be uploaded to the New Zealand Freshwater Fish Database, currently administered by NIWA.

53. The results of the fish passage monitoring shall be provided in the **Progress Monitoring Report**. The results shall assess the performance of the diversion into the new stream channel section, in achieving fish passage. In addition to the requirements of condition 62, the report shall include:

- a) The results of the fish passage monitoring;
- b) Details of any modifications to the channel which may affect fish passage including the location and date of the modifications;
- c) An analysis of the results for all fish species present, including comparison with the baseline fish data, and data from any previous fish passage monitoring under this consent;
- d) Identification of any actual or potential impediments to fish passage;
- e) Recommendations for any remedial measures required to ensure fish passage; and
- f) The timeframe for implementing these recommendations.

Note: Works in the stream bed to enable fish passage may require additional resource consent.

Annual Monitoring – Invertebrates

54. Following the diversion of water into new stream channel, invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring or have occurred, with the exception of sites DCN-05, DCN-06 and DCN-07. Invertebrate monitoring shall be undertaken between 1 March and 31 May, each year. This monitoring shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of the invertebrate monitoring shall be provided in the **Progress Monitoring Report**.

Annual Monitoring review - Marine sediment monitoring data

55. A review of any available marine sediment monitoring data and deposited sediment data for the Duck Creek Saltmarsh and the Pauatahanui Inlet adjacent to the saltmarsh shall be undertaken once a year including a comparison of the data with the baseline monitoring results. This monitoring review shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of this analysis shall be provided in the **Progress Monitoring Reports** due on the 15 July as required by condition 61 of this consent.

Annual monitoring - Riparian Restoration (SEV) and Inanga Habitat Monitoring (SEV)

56. The consent holder shall record all inanga habitat restoration works riparian planting, monitoring and maintenance undertaken and submit this in the **Progress Monitoring Report** due on the 15 July.

The report shall include, but not be limited to, the following:

- a) A map showing the areas which have been planted compared to the agreed mitigation areas, and the areas where inanga habitat restoration works have occurred
 - b) Details of inanga habitat restoration works undertaken
 - c) Details of plants, including species, number and date planted
 - d) An assessment of overall plant success rates
 - e) An assessment of the quality of the inanga spawning habitat area
 - f) A representative measure of canopy cover at least every year until 80% canopy cover has been reached, excluding the area for inanga spawning habitat restoration
 - g) Photo points of representative planted areas and restored inanga habitat, taken annually
 - h) Details of any maintenance work undertaken
 - i) Details of any further works required to be undertaken
 - j) Recommendations for any on-going maintenance works.
57. The consent holder shall undertake an SEV analysis, between 1 September and 1 December, two years and five years following the permanent diversion of the flow into the new stream channel, or the initial landscaping and planting, whichever occurs later. The SEV analysis shall be carried out at the same sites as the SEV assessment reported in Appendix 3 (Volume 2) of the application including at least two monitoring sites within the new channel section, and at least two monitoring sites within the mitigation planting section of the existing stream channel, and at least two monitoring sites within the off site mitigation planting section.

58. The purpose of the SEV monitoring is to determine whether aquatic habitat and stream functions within the diversion and mitigation reaches have improved and either meet or are likely to meet the mitigation requirements established by the ECR analysis (predicted SEV scores in the SEV assessment reported in the Ecological Remediation and Compensation Plan).
59. The consent holder shall provide the results of the SEV analysis in the **Progress Monitoring Report** of the following year. The results shall include the numerical variables and values used to determine the SEV scores for each monitoring location.
60. The results of the monitoring set out in conditions 51-56, and any SEV analysis undertaken during the same period 1 September to 1 December shall be provided in a **Progress Monitoring Report**, of the following year (due either 15 January or 15 July).

Reporting Requirements

61. The consent holder shall engage a suitably qualified and experienced ecologist to prepare and submit to the Manger, Environmental Regulation, Wellington Regional Council and Ngāti Toa Rangatira, **Environmental Monitoring Reports (EMRs)** which detail the results of the monitoring set out in the EMAMP, with the exception of the baseline monitoring. EMRs shall be prepared and submitted within the stated timeframes as follows:

	Type of EMR	Purpose	Timeframe for submission
1	Water Quality Monitoring Report	Water quality results for each rainfall triggered event.	Within 5 working days of sampling.
2	Event Triggered Monitoring Report	Following the exceedence of a water quality trigger level.	Within 5 working days of undertaking the site audit and deposited sediment monitoring, and a final report within 3 months of undertaking any invertebrate sampling.
3	Diversion Monitoring Report	Following the completion of the diversion of Duck Creek.	Within 10 working days of completing the inspection.
4	Progress Monitoring Report	Annual and Twice yearly monitoring.	By 15 July and the 15 January, each year for the timeframe stipulated for each applicable monitoring activity.

62. Each EMR shall include, but not be limited to:
- a) The results of the monitoring undertaken;
 - b) An analysis of the results, as assessed by a suitably qualified and independent ecologist, and including an assessment of the effects that the works authorised under this consent are having on the aquatic ecosystems and ecological values at each monitoring location and on the stream as a whole;
 - c) Recommendations for amendments to the EMAMP, ESCP, FMP and/or consent conditions, including, but not limited to:
 - i) Changes to flocculation method, dosing or material
 - ii) Changes in the management or implementation of erosion and sediment control measures or site management, and
 - iii) Adjustment of the water quality trigger levels
 - iv) Changes to the water quality monitoring programme.

The person that the consent holder engages to prepare each EMR shall be suitably qualified and experienced to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

63. The approved recommendations of the EMR under condition 62 of this consent shall be undertaken by the consent holder to the satisfaction of, and within the timeframe specified by, the Manager, Environmental Regulation, Wellington Regional Council.

Note: Any amendments proposed to the approved EMAMP, ESCP and/or FMP must be confirmed in writing by the consent holder and be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of the proposed amendments. Any amendments recommended to the conditions will require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

Culvert Management

64. a) Prior to any construction commencing, the consent holder shall inspect the culvert beneath State Highway 58 (culvert 119 - Duck Creek Culvert) and provide a **Culvert Silting Report** within 48 hours of the inspection being undertaken to the Manager, Environmental Regulation, Wellington Regional Council for certification, in consultation with the NZ Transport Agency, containing the following information:
- i) Date of inspection;
 - ii) Photographs of the culvert and any silt build-up;
 - iii) Existing silt levels taken as a current cross section measurement of

the culvert capacity which are to be maintained by a comparable measurement, in the same locations for every inspection;

- b) The inspections shall be carried out by a suitably qualified person during the following times:
 - i) Prior to the commencement of construction to set baseline silt levels;
 - ii) Within 24 hours of every significant rainfall event during the construction period (A significant rainfall event means any rainfall event that is predicted to meet or exceed 20mm in one 24 hour period); and
 - iii) A final inspection within 1 month following the construction works being completed.
- c) If the depth of silt within culvert 119 increases over and above the levels established as a result of the pre-construction baseline inspection, and is attributable to the activities authorised by this consent, then the consent holder shall be responsible for removing the build-up of silt from within the culvert to provide the same baseline performance as reported in condition 64 (b)(i) within 48 hours of the report being submitted to the Manager, Environmental Regulation, Wellington Regional Council, except that if the report is submitted during the period 1 March to 31 May, the works shall be undertaken between 1 and 3 April inclusive.

Reasonable mixing zone

65. Notwithstanding the requirements of any other conditions of this consent the discharge shall not give rise to any of the following effects in Duck Creek after a reasonable mixing zone of 30 m from any discharge point to the stream:
- a) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or
 - b) Any conspicuous change in the colour or visual clarity; or
 - c) Any emission of objectionable odour; or
 - d) The rendering of fresh water unsuitable for consumption by farm animals; or
 - e) Any significant adverse effects on aquatic life

Fill material

66. All fill material used on site shall:
- a) Be restricted to natural material, such as clay, soil and rock and other inert materials as detailed in the definition of cleanfill material in section 2.2 of the Ministry for the Environment publication 'A guide to the Management

of Cleanfills, 2002'; and

- b) Be restricted to those materials listed as acceptable in table 4.1 of the Ministry for the Environment publication 'A guide to the Management of Cleanfills, 2002'
67. All fill material shall be placed and compacted so as to avoid erosion and instability. Any erosion of soil including failure of cut and fill batters that is attributable to the works shall be contained, remedied and mitigated by the consent holder to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.
68. The consent holder shall notify the Manager, Environmental Regulation, Wellington Regional Council within 24 hours or the next working day if any contaminants (including sediment) are released from the site and enter any watercourse, due to any of the following:
- a) Discharges from unstabilised areas that are not treated by sediment control measures required under this consent
 - b) Failure of any erosion and sediment control measure; or
 - c) Any other incident which either directly or indirectly causes or is likely to cause adverse ecological effects in Duck Creek and/or Pauatahanui Inlet.

Complaints

69. The consent holder shall maintain a written record of any complaints received alleging adverse effects from or related to the exercise of this consent, for the duration of works authorised by this consent. This record shall include:
- a) The name and address of the complainant
 - b) The date and time that the complaint was received
 - c) Details of the alleged event
 - d) Weather conditions at the time of the complaint; and
 - e) Any measures taken to mitigate the complaint

Complaints received shall be forwarded to the Manager, Environmental Regulation, Wellington Regional Council within 24 hours of receiving the complaint.

Discovery of artefacts

70. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the

above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Review condition

71. Wellington Regional Council may review any or all conditions of this consent by giving notice of its intention to do so pursuant to section 128 of the Resource Management Act 1991, within one month of each anniversary of the commencement of this consent, for any of the following reasons:
- a) To review the adequacy of any plan and/or monitoring requirements, and if necessary, amend these requirements outlined in this consent
 - b) To deal with any adverse effects on the environment that may arise from the exercise of this consent; and which are appropriate to deal with at a later stage
 - c) To require the implementation of Best Practicable Options, in respect to new methodologies for the undertaking of the works to avoid, remedy or mitigate any significant adverse effect on the environment arising from the works
 - d) To enable consistency with any relevant Regional Plans or any National Environmental Standards or Regulations

The review of conditions shall allow for the deletion or amendment of conditions of this consent; and the addition of such new conditions as are shown to be necessary to avoid, remedy or mitigate any significant adverse effects on the environment.

Note: For the purposes of this condition the “commencement of the consent” is deemed to be once the works authorised by this consent have commenced.

72. The Wellington Regional Council shall be entitled to recover from the consent holder the costs of any review, calculated in accordance with and limited to the Council's scale of charges in force and applicable at that time pursuant to section 36 of the Resource Management Act 1991.

Land use consent [33623]

To construct three permanent bridges over the bed of Duck Creek, including any associated disturbance, discharge and deposition of material in the bed of that stream, and

Place 11 stormwater outlet structures and associated erosion protection works in the bed of Duck Creek at various locations, including any associated disturbance, discharge and deposition of material in the bed of that stream.

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the structures and associated activities shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:
 - a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent
 - b) The commencement date and expected duration of each stage of the works subject to this consent
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
- b) Statutory, consenting and contractual requirements
- c) Responsibilities and contact details of all parties involved

Field Code Changed

- d) Details of environmental site induction
 - e) Inspections, monitoring and reporting
 - f) Complaints and feedback procedures
 - g) Process for amending the Environmental Management Plan for Construction
 - h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
12. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. The stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Inanga spawning

13. No in-stream bridge works shall be carried out in the active channel (i.e. flowing water in the stream bed) between 1 March and 31 May to provide for inanga spawning.
14. No other in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) during a spring tide between 1 March and 31 May, within 1.5 hours of high tide, being a 3 hour period in total, to provide for inanga spawning.

Freshwater fish

15. The consent holder shall ensure that fish passage is maintained at all times during and after construction.
16. No in stream works shall be carried out in the active channel (ie, flowing water in the stream bed) during the key recruitment migration period for native fish species between 1 September to 30 November inclusive.

Final Construction Plans (pre-works requirement)

17. Prior to commencing construction of each bridge, the consent holder shall submit a final Construction Plan that has been prepared in consultation with the contractor undertaking the works, which includes, but is not limited to, details of:
 - a) The design and location of the bridge,
 - b) The methodology to be used for the construction of the bridge,
 - c) The specific sediment and erosion controls to be used during the construction of the bridge,
 - d) The methodology to be used to temporarily divert the stream during the construction of the bridge.
18. Prior to placing the stormwater pipes, the consent holder shall submit a final Construction Plan which includes, but is not limited to, details of:
 - a) The size, type and location of the stormwater pipes,
 - b) The methodology to be used for the placement of the stormwater pipes,
 - c) The specific sediment and erosion controls to be used during the placement of the stormwater pipes.

The final construction plans for each bridge and the stormwater pipes shall be submitted at least **10 working days** prior to the proposed works commencement date for the bridge or stormwater pipes respectively to the Manager, Environmental Regulation, Wellington Regional Council. No works authorised under this consent shall commence until the final construction plans for the structures is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council. All works shall be undertaken in accordance with the approved construction plan.

Reducing effects on water quality

19. The consent holder shall take all steps to minimise sedimentation and increased turbidity of Duck Creek and the Pauatahanui Inlet during the works, including but not limited to:
 - a) Completing all works in the minimum time practicable
 - b) Undertaking works in dry weather conditions, as far as practicable
 - c) Avoiding the placement of construction or excavated material in the wetted channel
 - d) Separating all construction activities from flowing water, and
 - e) Installing appropriate sediment control and treatment measures

20. If heavy rain is expected, the consent holder shall:
 - a) Clean out behind any silt fences in use and remove excess material; and
 - b) Lay A14 filter cloth over any open areas and pin down securely.

21. Any areas of the stream banks that are cut or disturbed as a result of the works shall be stabilised and grassed/replanted as soon as practicable, following completion of the works, to prevent erosion and scour. The consent holder shall ensure that a method of stabilisation (eg, hydroseeding) is applied within 2 weeks of completion of the works. All stabilisation methods shall be effective within **two months** of being applied or after a longer period if approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. These works shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

22. The consent holder shall ensure that:
 - a) All machinery is thoroughly cleaned of vegetation (eg, weeds), seeds or contaminants at least 10 metres away from any watercourse, water flow channel or stormwater system, prior to entering the site
 - b) All machinery shall be regularly maintained in such a manner to ensure no contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water, or to land where it may enter water, from equipment being used for the works
 - c) All contaminant storage or re-fuelling areas are bunded or contained in such a manner so as to prevent the discharge of contaminants to water or to land where it may enter water
 - d) No machinery is cleaned, stored or refuelled within 10 metres of any waterbody, water flow channel or stormwater system

23. The consent holder shall ensure that prior to entering the river that all vehicles, mobile plant, or machinery is inspected for the presence of invasive or pest aquatic plants including 'didymo'. In the event that an invasive or pest aquatic plant or 'didymo' is discovered upon the vehicle, mobile plant, or machinery it shall be cleaned, to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Note: The machinery shall be cleaned in accordance with the Ministry for Primary Industries cleaning methods which can be found at <http://www.biosecurity.govt.nz/pests/didymo/cleaning>.

24. In the event of a spill of fuel, hydraulic fluid, or other potential liquid contaminants, immediate steps shall be taken to contain the spilt contaminant. The spilt contaminants and any material used to contain it shall be removed from the site and disposed of at authorised landfill. The consent holder shall also immediately notify the Manager, Environmental Regulation, Wellington Regional Council of the spill and actions to be taken.
25. The consent holder shall ensure that no dry cement product, unset concrete, concrete wash water or any water contaminated with concrete enters the flowing channel of Duck Creek or any water during, or as a result of, the placement or construction of the structures.
26. Upon completion of the works all unused material from the works shall be immediately removed from the bed and banks of the stream and disposed of in an appropriate manner that is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Discovery of artefacts

27. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted

Field Code Changed

under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Maintenance

2728. Following a rainfall event up to and including a 1 in 10 year rainfall event, the consent holder shall inspect the bridges to ensure that the integrity of the structures are maintained.
2829. The structures authorised by this consent shall remain the responsibility of the consent holder and be maintained so that:
- a) Any erosion or scour of the stream bed or banks that is attributable to the works carried out as part of this consent shall be remedied by the consent holder;
 - b) The structural integrity of the structure remains sound in the opinion of a Chartered Professional Engineer; and
 - c) The structures remain substantively clear of debris.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.

Land use consent [33624]

To reclaim the bed of Duck Creek in two reaches, being 185 metres and 40 metres in streambed length

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the activity shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least

20 working days prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:

- a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent
 - b) The commencement date and expected duration of each stage of the works subject to this consent
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
- b) Statutory, consenting and contractual requirements
- c) Responsibilities and contact details of all parties involved
- d) Details of environmental site induction
- e) Inspections, monitoring and reporting
- f) Complaints and feedback procedures
- g) Process for amending the Environmental Management Plan for

Field Code Changed

Construction

- h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
12. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Inanga spawning

13. No in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) between 1 March and 31 May, to provide for inanga spawning.

Ecological Remediation and Compensation Plan

14. The consent holder shall prepare and submit an Ecological Remediation and Compensation Plan (EcoRCP) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** for approval prior to the proposed commencement date for the works authorised under this consent.

The EcoRCP shall be prepared by a person suitably qualified and experienced in Stream Ecological Valuation, in consultation with the engineer responsible for erosion control and the landscape designer. The environmental compensation shall as a minimum provide for 776 metres of riparian mitigation planting, and non- SEV compensatory measures, including the provision of approximately 210 metres of inanga spawning habitat from the northern site boundary up to but not including the remnant bush located adjacent to the property Lot 1444 DP 54453 at 24 Observatory Close.

The EcoRCP shall include, but not be limited to, the following:

- a) Updated SEV, including ECR calculations
- b) Details and plans of the location and width of riparian planting, and stream channel design including run, riffle, pool sequencing
- c) Details and plans of the location of any non-compensative requirements within the identified riparian mitigation planting zone, including but not limited to any stormwater outlets, retention areas and other infrastructure, pathways, and maintenance accessways, ~~and~~ as well as bank stabilisation measures in general accordance with those shown in Plan 251, as attached to the Joint Statement of the Flood and Erosion experts, dated 6 April 2016.
- d) Details of other non-SEV compensatory measures, including inanga spawning habitat enhancement.

The EcoRCP shall be the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to any works authorised by this consent commencing.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991. The provision of inanga spawning habitat may require further resource consent from Wellington Regional Council.

Earthworks Construction Plan

15. The consent holder shall prepare, in consultation with the contractor undertaking the works, a final **Earthworks Construction Plan** (incorporating an Erosion and Sediment Control Plan) (ECP). The ECP shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council for approval at least **20 working days** prior to the works commencing.

The final ECP shall as a minimum be prepared in general accordance with the *Erosion and Sediment Control Guidelines for the Wellington Region (2002)*. The ECP shall reflect the measures outlined in the Environmental Management Plan (Construction), and the draft Earthworks Construction Plan - Stage 1 submitted as Appendix 7 of the application, as relevant to the stage of works, and shall include, but not be limited to, the following:

- a) Responsibilities and contact details of all parties responsible for the operation and maintenance of all key erosion and sediment control structures
- b) A detailed description of the works proposed and construction methodology and timetable
- c) Details of all principles, procedures and practices that will be implemented to undertake erosion and sediment control and minimise the potential for sediment discharge from the site
- d) The design criteria and dimensions of all key erosion and sediment control measures
- e) Plan(s) of an appropriate scale clearly identifying:
 - i) The location of all existing and proposed stream channels
 - ii) Staging sequence of erosion and sediment control measures
 - iii) Areas and cross sections of cut and fill
 - iv) The extent of soil disturbance and vegetation removal
 - v) Any “no go” and/or buffer areas to be maintained undisturbed
 - vi) Locations of topsoil stockpiles and haul roads
 - vii) All key erosion and sediment control measures, including diversion channels
 - viii) The boundaries and area of catchments contributing to all stormwater impoundment structures
 - ix) The locations of all specific points of discharge to the environment
 - x) Civil infrastructure to be constructed in relation to completed bulk earthworks areas, and
 - xi) Any other relevant site information
- f) Timetable and nature of progressive site rehabilitation and re-vegetation proposed, taking into account the requirements of the Ecological Remediation and Compensation Mitigation Plan.
- g) Maintenance, monitoring and reporting procedures and frequency
- h) Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control structures, and measures to ensure overland flow or flood waters are isolated from opened earthworks areas
- i) Procedures and timing for review and/or amendment to the ECP
- j) Decommissioning methodology for all erosion and sediment control measures
- k) Procedures for re-instating erosion and sediment control measures at the end of each working day, where applicable.

The ECP shall be the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to any works authorised by this consent commencing.

16. Any amendments proposed to the approved ECP shall be confirmed in writing by the consent holder and be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to the implementation of any amendments proposed.

Recolonisation of bed material

17. To provide for the recolonisation of bed material with algae, periphyton and invertebrates in the constructed stream channel, bed material from the original stream bed shall be transferred to the new stream reach. The flow of Duck Creek shall be diverted around the reaches to be reclaimed and constructed using a suitable flexible pipe or similar method for temporarily diverting Duck Creek. The methodology to be used shall be set out in the Environmental Monitoring and Adaptive Management Plan. Following the draining of the existing stream channel and prior to any reclamation, suitable material, as determined by a suitably qualified and experience ecologist and in accordance with condition 15 of Water Permit [33621] from the original stream bed shall be removed and deposited into at least the upper half of the new reach. Once the material has been deposited into the new reach of stream, the flow can be permanently diverted into this section of stream channel.

Fill material

1718. All fill material used on site shall:

- a) Be restricted to natural material, such as clay, soil and rock and other inert materials as detailed in the definition of cleanfill material in section 2.2 of the Ministry for the Environment publication 'A guide to the Management of Cleanfills, 2002'; and
- b) Be restricted to those materials listed as acceptable in table 4.1 of the Ministry for the Environment publication 'A guide to the Management of Cleanfills, 2002'

189. All fill material shall be placed and compacted so as to minimise the potential for erosion and instability. Any erosion of soil including failure of cut and fill batters that is attributable to the works shall be contained, remedied and mitigated by the consent holder to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

1920. The consent holder shall ensure that water is unable to flow through the 'wall' between the old channel and the new channel.

Riparian Mitigation Planting Plan

- 20-21 The consent holder shall submit a **Planting Plan** to the Manager,

Environmental Regulation, Wellington Regional Council for certification at least **20 working days** prior to the works commencing.

The planting plan shall be in accordance with the Ecological Compensation Plan and in general accordance with the Urban Design and Landscape Plan submitted as Appendix 2 (Vol 2) of the application and shall include, but not be limited to:

- a) Plan(s) to scale showing the location of all proposed areas to be planted and proposed species mix
- b) The native species that are proposed to be planted, the size of the plants and the density of planting; all plant species shall be eco-sourced and appropriate to the locality
- c) A detailed timeline for proposed planting
- d) The results of soil testing, and the details of any soil conditioning to be implemented
- e) Details of pre-planting site preparation (clearing, mulching, fertilising)
- f) Details of the on-going maintenance of the planting including, but not limited to, the replacement of plants, future management, and eradication of pest plants
- g) Details of enrichment and replacement planting, including timeframes to ensure a plant success rate of at least 80% canopy cover defined in condition [25-26](#) is achieved within 5 years
- h) Details of how plants will be protected from pest animals
- i) Details of the proposed monitoring regime

[2422.](#) The Planting Plan shall be developed in accordance with Wellington Regional Council's *'Restoration Planting: A guide to restoration planting projects in the Wellington Region, 2004'* All planting shall be undertaken in accordance with the approved planting plan.

[2223.](#) The Planting Plan shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, **prior** to any works authorised by this consent commencing.

[2324.](#) Any proposed amendments made to the approved Planting Plan shall be submitted in writing and be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council prior to the implementation of those amendments.

[2425.](#) The consent holder shall complete the planting as required in the approved Planting Plan as soon as practicable, and within 18 months of commencement of the reclamation works approved by this consent, or other timeframe approved by the Manager, Environmental Regulation, Wellington Regional Council.

- [2526](#). All on-site restoration planting must be maintained for 5 years, or until canopy 80% canopy cover over the entire mitigation area is achieved to the satisfaction of the Manager, Environmental Regulation.

Note: Canopy cover is defined as the percentage of ground area covered by native vegetation as viewed from vertically above the planted area. It includes all plant tiers (that is, it may be a mix of low growing species plus tree and shrub species).

- [2627](#). The consent holder shall notify the Manager, Environmental Regulation, Wellington Regional Council, when the planting as required by the approved Planting Plan in condition [20-21](#) is complete.

- [2728](#). The consent holder shall provide, within 1 month ~~on~~of completing the planting required by the approved planting plan, the Manager, Environmental Regulation, Wellington Regional Council with the geographic location coordinates of the boundary of the planting areas

Legal protection

- [2829](#). The consent holder shall ensure that all riparian mitigation planting undertaken in accordance with the approved Planting Plan required by condition [20-21](#) of this consent is legally protected in perpetuity.

- [2930](#). The consent holder shall provide documentation which demonstrates that all areas of mitigation as detailed in the Ecological Compensation Plan required by condition 14 of this permit have been legally protected in perpetuity

Environmental Monitoring and Adaptive Management Plan

- [3031](#). The consent holder shall submit an **Environmental Monitoring and Adaptive Management Plan (EMAMP)** to the Manager, Environmental Regulation, Wellington Regional Council at least 20 working days prior to the commencement date of any earthworks.

Each section of the EMAMP shall be prepared by a person suitably qualified and experienced in the subject addressed in that section.

The purpose of the EMAMP is to establish and implement a scientifically robust monitoring plan to monitor the health of Duck Creek and indirectly the Pauatahanui Inlet in terms of water quality, and aquatic habitat and fish passage, as it is realigned and collects treated discharges from the surrounding earthworks activities.

The EMAMP shall detail the methods for monitoring stream water quality, monitoring the health of the aquatic environment, fish relocation, [relocation of bed material](#), and monitoring fish passage, and provide an adaptive management framework whereby the results of water quality monitoring trigger appropriate responses. The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

The EMAMP shall include the following:

- a) The scope and environmental objectives of the monitoring encompassed by the EMAMP;
- b) Identification of suitably qualified and experienced person(s) to undertake the monitoring;
- c) The adaptive management process;
- d) The location of all monitoring sites as shown on the plan attached to the draft EMAMP submitted with the application and contained in Appendix 8 (Volume 2) including a scaled aerial map, NZTM map references, and descriptions of all sites;
- e) An overview of the sampling regimes and timing of sampling, for the site;
- f) A description of the methodologies to be used for [fish relocation, recolonisation of bed material, and](#) each type of monitoring, including sample sizes and analysis methods, where relevant;
- g) Trigger levels for rainfall, pH, temperature, turbidity, suspended sediment concentration, total suspended solids, deposited sediment, and invertebrates;
- h) The process to be followed in the event of an exceedence of any of these trigger levels;
- i) Details on how each of the following monitoring regimes will be undertaken:
 - i) Rainfall event monitoring – Water quality;
 - ii) Event triggered monitoring – Deposited sediment and Invertebrates;
 - iii) Diversion monitoring – Design guidelines, Structures and Fish relocation;
 - iv) Twice yearly monitoring – Water quality and Deposited sediment;
 - v) Annual monitoring – Fish passage, Invertebrates, Marine sediment monitoring data and Riparian restoration (SEV) and Inanga habitat monitoring;
- j) Reporting requirements;
- k) Process for amending the EMAMP; and
- l) All available results of the Baseline Monitoring.

No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council, has certified in writing that the EMAMP is in general accordance with the draft EMAMP, submitted as Appendix 8 (Volume 2) of the application, and meets the requirements of all conditions of this consent.

- [3132](#). The EMAMP shall be implemented by suitably qualified and experienced persons in accordance with the authorised plan (under condition [30-31](#) of this consent). Any amendment proposed by the consent holder to the authorised EMAMP shall be submitted in writing to the Manager, Environmental Regulation, Wellington Regional Council. The consent holder shall not implement any amendment to the EMAMP until that amendment has been authorised in writing by the Manager, Environmental Regulation, Wellington Regional Council.

General Monitoring Conditions

- 3233.** For each monitored event undertaken in accordance with the authorised EMAMP, a photograph of the watercourse at the sampling point shall be taken and a site record sheet shall be completed, which shall include the following information:
- a) Date and time of the monitoring
 - b) Details of the person undertaking the monitoring
 - c) Nature of flow in Duck Creek
 - d) Weather conditions
 - e) The presence of:
 - i) any conspicuous oil or grease films, scums or foams, or floatable or suspended materials
 - ii) any conspicuous change in colour or visual clarity
 - iii) any emission of objectionable odour
 - iv) the rendering of fresh water unsuitable for consumption by farm animals
 - v) any significant adverse effects on aquatic life.
 - f) Observations of any sediment control devices directly, or indirectly treating discharges to Duck Creek and any recommendations for maintenance or additions to these controls; and
 - g) Recommendations for additional ecological investigations to determine the effects of the diversion and/or discharges on Duck Creek.

- 3334.** The consent holder shall ensure that the monitoring locations, sample sizes, methodologies, and analysis methods to be included in the EMAMP, and used for the monitoring undertaken in accordance with the EMAMP, are appropriate for the purpose of the monitoring and wherever available use national protocols or guidelines.

Rainfall Monitoring

- 3435.** Rainfall monitoring shall be undertaken using the most appropriately located weather station(s) to determine whether the trigger level of $7 \frac{4}{4}$ mm in one hour, and/or 20 mm in 24 hours has been reached. The data to support the selection of the weather station shall be provided in the EMAMP.

Water Quality Monitoring

- 3536.** Water quality monitoring of Duck Creek shall be undertaken following the exceedence of a rainfall event trigger for the following water quality parameters:
- a) pH
 - b) Temperature
 - c) Dissolved oxygen
 - d) Turbidity,

- e) Total Suspended Solids, and.
- f) Suspended Sediment Concentration.

The consent holder shall ensure that all water quality monitoring occurs as soon as practicable once the rainfall trigger level is reached. Water quality monitoring will be undertaken at the control site (located at the southern site boundary), and then all sites downstream of any areas where works are in progress, including areas where the site has not been stabilised in accordance with the conditions of discharge permit [33622]. Water quality monitoring shall occur at least three times a day while the rainfall event continues.

[3637](#). The trigger levels for water quality monitoring shall be as follows:

- a) pH – An exceedence is deemed to have occurred if the pH is less than 5.5 or greater than 7.5
- b) Turbidity – An exceedence is deemed to have occurred if the difference in NTU levels between the control site and the monitoring location is greater than 20%
- c) Total Suspended Solids – An exceedence is deemed to have occurred if the difference in TSS concentrations between the control site and the monitoring location is greater than 20%, or a level of more than 150g/m³ is recorded
- d) Suspended sediment concentration - An exceedence is deemed to have occurred if the difference in suspended sediment concentrations between the control site and the monitoring location is greater than 20%.

[3738](#). Each time any water quality trigger level is exceeded at any of the monitoring locations other than the control site, the consent holder shall:

- a) notify the Manager, Environmental Regulation, Wellington Regional Council in writing within 24 hours,
- b) undertake an audit as set out in condition [3839](#), and
- c) undertake actions to minimise further exceedences, which may include temporary stabilisation of disturbed surfaces, installation of additional devices and batch dosing with flocculants.

Event triggered monitoring

[3839](#). A complete site audit shall be undertaken each time water quality monitoring indicates an exceedence of the water quality trigger levels. The site audit shall be undertaken as soon as practicable and within 24 hours of the trigger being exceeded. The site audit shall be additional to the weekly site audit required by discharge permit [33622]. The audit shall include, but not be limited to, the following information:

- a) Date
- b) Name of auditor

- c) Site condition
- d) Weather conditions
- e) Sediment management (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas)
- f) Runoff control (check of diversion channels and check sediment retention ponds)
- g) Condition of sediment control measures, including silt fences, contour drains and sediment retention ponds
- h) Check of operation of flocculation method; and
- i) General comments.

[3940](#). Deposited sediment monitoring, using the method of visually estimating the percentage cover of fine sediments, shall be undertaken each time water quality monitoring indicates an exceedence of turbidity and/or total suspended solids trigger levels and the source of the exceedence is likely to be due to the on-site construction works. Deposited sediment monitoring will be undertaken at the control site DCN-01 (located at the southern site boundary), and all monitoring sites identified in the EMAMP downstream of any works authorised by this consent.

[4041](#). Invertebrate sampling shall be undertaken if:

- a) water quality monitoring; and/or
- b) deposited sediment monitoring; and/or
- c) other sources of information,

indicate a major sediment discharge has occurred that may have resulted in adverse effects on stream ecology. Invertebrate monitoring shall be undertaken following a minimum of two weeks of no rainfall. Invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring, with the exception of sites DCN-05, DCN-06 and DCN-07.

Note: Data derived should be quantitative, not semi-quantitative.

[4142](#). The results of the event triggered monitoring shall be provided in an **Event Triggered Monitoring Report**. In addition to the requirements of condition [5455](#), the report shall include:

- a) The levels of exceedance
- b) Monitoring results for the duration of the rainfall event until the discharges cease

- c) The results of the trigger level site audit required by condition [3839](#)
- d) Identification of probable causes of the exceedance and any measures that could have been taken to prevent it
- e) Analysis of the performance of the erosion and sediment control device(s)
- f) Immediate actions taken to minimise further exceedances.

Diversion monitoring – Design guidelines, fish passage and fish relocation

[4243](#). Prior to the diversion of water into each stage of the new stream channel, and within 5 working days following the diversion of water for each stage, an inspection of the new stream channel shall be undertaken of the design principles set out in condition 15 of Water Permit [33621] for:

- a) Width of wet bed;
- b) Water depth;
- c) Velocity of runs, pools, riffles and cascades;
- d) Bed material; and
- e) Channel complexity.

The consent holder shall provide recommendations, where necessary, on any work to be undertaken to ensure compliance with the design principles, and timeframes for implementing these recommendations, in the **Diversion Monitoring Report** required under condition [5354](#).

Twice yearly monitoring – Water Quality and Deposited Sediment

[4344](#). Water quality and deposited sediment sampling shall be undertaken twice a year, in autumn (1 March – 31 May) and spring (1 September – 30 November), on a mid-ebb tide, following a minimum of two weeks of no rainfall, while the works authorised by this consent are being undertaken, and for two occasions following the completion of the earthworks and stabilisation of the entire site. The monitoring shall be undertaken at the control site DCN-01 (located at the southern site boundary) and downstream of the site (at monitoring locations DCN-02 to DCN-07). The results of this monitoring shall be provided in the **Progress Monitoring Reports** due by 15 July (for the autumn monitoring) and 15 January (for the spring monitoring) following each monitoring occasion, as required by condition [53-54](#) of this consent.

Annual Monitoring – Fish passage

[4445](#). Following the diversion of water through the new stream channel, fish passage monitoring of all of the sites upstream of, and including, site DCN-05 shall be undertaken once between 1 December and 30 April. The fish passage monitoring shall include but not be limited to:

- a) a survey of the number of all fish species present upstream and downstream of the new channel diversion at monitoring sites DCN-03B including specific reference to the location of whitebait, elver, and inanga, and the size class distribution of banded kokopu, koura, and giant kokopu using national protocols for fish monitoring;

- b) identification of any actual or potential impediments to fish passage.

This monitoring shall be undertaken annually for five years following the livening of the stream diversion.

Note: It is recommended that the fish monitoring data be uploaded to the New Zealand Freshwater Fish Database, currently administered by NIWA.

4546. The results of the fish passage monitoring shall be provided in the **Progress Monitoring Report**. The results shall assess the performance of the diversion into the new stream channel section, in achieving fish passage. In addition to the requirements of condition 5455, the report shall include:

- a) The results of the fish passage monitoring;
- b) Details of any modifications to the channel which may affect fish passage including the location and date of the modifications;
- c) An analysis of the results for all fish species present, including comparison with the baseline fish data, and data from any previous fish passage monitoring under this consent;
- d) Identification of any actual or potential impediments to fish passage;
- e) Recommendations for any remedial measures required to ensure fish passage; and
- f) The timeframe for implementing these recommendations.

Note: Works in the stream bed to enable fish passage may require additional resource consent.

Annual Monitoring – Invertebrates

4647. Following the diversion of water into new stream channel, invertebrate monitoring shall be undertaken at the control site DCN-01 and all monitoring sites within the section of stream channel where the works authorised by this consent are occurring or have occurred, with the exception of sites DCN-05, DCN-06 and DCN-07. Invertebrate monitoring shall be undertaken between 1 March and 31 May, each year. This monitoring shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of the invertebrate monitoring shall be provided in the **Progress Monitoring Report**.

Annual Monitoring review - Marine sediment monitoring data

4748. A review of any available marine sediment monitoring data and deposited sediment data for the Duck Creek Saltmarsh and the Pauatahanui Inlet adjacent to the saltmarsh shall be undertaken once a year including a comparison of the data with the baseline monitoring results. This monitoring review shall be undertaken annually for five years following the livening of the last stream diversion, unless a shorter time period is agreed, to the satisfaction of the Manager, Environmental Regulation. The results of this analysis shall be

provided in the **Progress Monitoring Reports** due on the 15 July as required by condition 53-54 of this consent.

Annual monitoring - Riparian Restoration (SEV) and Inanga Habitat Monitoring (SEV)

4849. The consent holder shall record all inanga habitat restoration works and riparian planting, monitoring and maintenance undertaken and submit this in the **Progress Monitoring Report** due on the 15 July.

The report shall include, but not be limited to, the following:

- a) A map showing the areas which have been planted compared to the agreed mitigation areas, and the areas where inanga habitat restoration works have occurred
- b) Details of inanga habitat restoration works undertaken
- c) Details of plants, including species, number and date planted
- d) An assessment of overall plant success rates
- e) An assessment of the quality of the inanga spawning habitat area
- f) A representative measure of canopy cover at least every year until 80% canopy cover has been reached, excluding the area for inanga spawning habitat restoration
- g) Photo points of representative planted areas, taken annually
- h) Details of any maintenance work undertaken
- i) Details of any further works required to be undertaken
- j) Recommendations for any on-going maintenance works.

4950. The consent holder shall undertake an SEV analysis, between 1 September and 1 December, two years and five years following the permanent diversion of the flow into the new stream channel, or the initial landscaping and planting, whichever occurs later. The SEV analysis shall be carried out at the same sites as the SEV assessment reported in Appendix 3 (Volume 2) of the application including at least two monitoring sites within the new channel section, and at least two monitoring sites within the mitigation planting section of the existing stream channel, ~~and at least two monitoring sites within the off site mitigation planting section.~~

5051. The purpose of the SEV monitoring is to determine whether aquatic habitat and stream functions within the diversion and mitigation reaches have improved and either meet or are likely to meet the mitigation requirements established by the ECR analysis (predicted SEV

scores in the SEV assessment reported the Ecological Remediation and Compensation Plan).

5452. The consent holder shall provide the results of the SEV analysis in the **Progress Monitoring Report** of the following year. The results shall include the numerical variables and values used to determine the SEV scores for each monitoring location.

5253. The results of the monitoring set out in conditions 4344-4849, and any riparian restoration monitoring undertaken during the same period 1 September to 1 December shall be provided in a **Progress Monitoring Report**, of the following year (due either 15 January or 15 July).

Reporting Requirements

5354. The consent holder shall engage a suitably qualified and experienced ecologist to prepare and submit to the Manager, Environmental Regulation, Wellington Regional Council and Ngāti Toa Rangatira, **Environmental Monitoring Reports (EMRs)** which detail the results of the monitoring set out in the EMAMP, with the exception of the baseline monitoring. EMRs shall be prepared and submitted within the stated timeframes as follows:

	Type of EMR	Purpose	Timeframe for submission
1	Water Quality Monitoring Report	Water quality results for each rainfall triggered event.	Within 5 working days of sampling.
2	Event Triggered Monitoring Report	Following the exceedence of a water quality trigger level.	Within 5 working days of undertaking the site audit and deposited sediment monitoring, and a final report within 3 months of undertaking any invertebrate sampling.
3	Diversion Monitoring Report	Following the completion of the diversion of Duck Creek.	Within 10 working days of completing the inspection.
4	Progress Monitoring Report	Annual and Twice yearly monitoring.	By 15 July and the 15 January, each year for the timeframe stipulated for each applicable monitoring activity.

5455. Each EMR shall include, but not be limited to:

- a) The results of the monitoring

undertaken;

- b) An analysis of the results, as assessed by a suitably qualified and independent ecologist, and including an assessment of the effects that the works authorised under this consent are having on the aquatic ecosystems and ecological values at each monitoring location and on the stream as a whole;
- c) Recommendations for amendments to the EMAMP, ECP, FMP and/or consent conditions, including, but not limited to:
 - i) Changes to flocculation method, dosing or material
 - ii) Changes in the management or implementation of erosion and sediment control measures or site management, and
 - iii) Adjustment of the water quality trigger levels
 - iv) Changes to the water quality monitoring programme.

The person that the consent holder engages to prepare each EMR shall be suitably qualified and experienced to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

[5556](#). The approved recommendations of the EMR under condition [54-55](#) of this consent shall be undertaken by the consent holder to the satisfaction of, and within the timeframe specified by, the Manager, Environmental Regulation, Wellington Regional Council.

Note: Any amendments proposed to the approved EMAMP, ECP and/or FMP must be confirmed in writing by the consent holder and be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of the proposed amendments. Any amendments recommended to the conditions will require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

Complaints

[5657](#). The consent holder shall maintain a permanent record of any complaints received alleging adverse effects from or related to the works. This record shall include:

- a) The name and address of the complainant (if provided)
- b) The date and time that the complaint was received
- c) Details of the alleged event
- d) Weather conditions at the time of the complaint, and
- e) Any measures taken to mitigate/remedy the cause of the complaint

This record shall be made available to the Manager, Environmental Regulation, Wellington Regional Council, on request.

Discovery of artefacts

58. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Maintenance of works

5759. The works shall remain the responsibility of the consent holder and shall be maintained to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council so that any erosion, scour or instability of the stream bed or banks that is attributable to the works carried out as part of this consent is remedied by the consent holder.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.

Review condition

5860. The Wellington Regional Council may review any or all conditions of this consent by giving notice of its intention to do so pursuant to Section 128 of the Resource Management Act 1991, within one month of the first, second, fifth, 7th and 10th anniversaries of the commencement of this consent, for the following purposes:

- a) To review the adequacy of any report and/or monitoring requirements, and if necessary, amend these requirements outlined in this consent
- b) To deal with any adverse effects on the environment that may arise from the exercise of this consent; and which are appropriate to deal with at a later stage
- c) To require the implementation of Best Practicable Options, in respect of new methodologies for the undertaking of the works to avoid, remedy or mitigate any significant adverse effect on the environment arising from the works
- d) To enable consistency with any relevant Regional Plans or any National Environmental Standards or Regulations.

The review of conditions shall allow for the deletion or amendment of conditions of this consent; and the addition of such new conditions as are shown to be necessary to avoid, remedy or mitigate any significant adverse effects on the environment.

Note: For the purposes of this condition the “commencement of the consent” is deemed to be once the works authorised by this consent have commenced.

- [5961](#). The Wellington Regional Council shall be entitled to recover from the consent holder the costs of any review, calculated in accordance with and limited to the Council’s scale of charges in force and applicable at that time pursuant to section 36 of the Resource Management Act 1991.

Land use consent [33647]

To place a stormwater pipe under the bed of Duck Creek including any associated disturbance, discharge and deposition of material in the bed of that stream

Standards from Rule 46 of the Regional Freshwater Plan - Pipelines (controlled activity)

- (1) No contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) shall be released to water from equipment being used for the operation, and no refuelling of equipment shall take place on any area of river or lake bed.
- (2) Any excess material from the construction operation, shall be removed from the river or lake bed and disposed of in an appropriate manner.
- (3) *Not relevant.*

Terms from Rule 46 of the Regional Freshwater Plan - Pipelines (controlled activity)

- (1) The consent holder shall notify the Manager, Consents Management, Wellington, at least two working days before any work commences.
- (2) A charge, set in accordance with section 36(2) of the Act, shall be paid to the Wellington Regional Council for carrying out its functions in relation to the administration, monitoring, and supervision of the activity, and for carrying out its functions under section 35 (duty to gather information, monitor and keep records) of the Act 1991.

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the structure and associated activities shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)

- 28 September 2015 (further information and amendments to the application)
- 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
- 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:
 - a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent.
 - b) The commencement date and expected duration of each stage of the works subject to this consent;
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents

Field Code Changed

and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
 - b) Statutory, consenting and contractual requirements
 - c) Responsibilities and contact details of all parties involved
 - d) Details of environmental site induction
 - e) Inspections, monitoring and reporting
 - f) Complaints and feedback procedures
 - g) Process for amending the Environmental Management Plan for Construction
 - h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the

Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
12. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. The stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Inanga spawning

13. No in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) during a spring tide between 1 March and 31 May, within 1.5 hours of high tide, being a three hour period in total, to provide for inanga spawning.

Freshwater fish

14. The consent holder shall ensure that fish passage is maintained at all times during and after construction.
15. No in stream works shall be carried out in the active channel (ie, flowing water in the stream bed) during the key recruitment migration period for native fish species between 1 September to 30 November inclusive.

Design details

16. The consent holder shall ensure that the stormwater pipe is installed at least 0.5m below the stream bed level.

Final Construction Plans (pre-works requirement)

17. Prior to commencing placement of the stormwater pipe, the consent holder shall submit a final Construction Plan that has been prepared in consultation with the contractor undertaking the works, which includes, but is not limited to, details of:
 - a) The size, type and location of the stormwater pipe,
 - b) The methodology to be used for the placement of the stormwater pipe,
 - c) The specific sediment and erosion controls to be used during the placement

of the stormwater pipe.

The final construction plans for the stormwater pipe shall be submitted at least **10 working days** prior to the proposed works commencement date for the stormwater pipe to the Manager, Environmental Regulation, Wellington Regional Council. No works authorised under this consent shall commence on until the final construction plans for the stormwater pipe is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council. All works shall be undertaken in accordance with the approved construction plan.

Reducing effects on water quality

18. The consent holder shall take all steps to minimise sedimentation and increased turbidity of the Duck Creek during the works, including but not limited to:
 - a) Completing all works in the minimum time practicable
 - b) Undertaking works in dry weather conditions, as far as practicable
 - c) Avoiding the placement of construction or excavated material in the wetted channel
 - d) Separating all construction activities from flowing water, and
 - e) Installing appropriate sediment control and treatment measures

19. If heavy rain is expected, the consent holder shall:
 - a) Clean out behind any silt fences in use and remove excess material; and
 - b) Lay A14 filter cloth over any open areas and pin down securely.

20. Any areas of the stream banks that are cut or disturbed as a result of the works shall be stabilised and grassed/replanted as soon as practicable, following completion of the works, to prevent erosion and scour. . The consent holder shall ensure that a method of stabilisation (eg, hydroseeding) is applied within 2 weeks of completion of the works. All stabilisation methods shall be effective within **two months** of being applied or after a longer period if approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. These works shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

21. The consent holder shall ensure that:
 - a) All machinery is thoroughly cleaned of vegetation (eg, weeds), seeds or contaminants at least 10 metres away from any watercourse, water flow channel or stormwater system, prior to entering the site
 - b) All machinery shall be regularly maintained in such a manner to ensure no contaminants (including but not limited to oil, petrol, diesel,

hydraulic fluid) shall be released into water, or to land where it may enter water, from equipment being used for the works

- c) All contaminant storage or re-fuelling areas are bunded or contained in such a manner so as to prevent the discharge of contaminants to water or to land where it may enter water
 - d) No machinery is cleaned, stored or refuelled within 10 metres of any waterbody, water flow channel or stormwater system
22. The consent holder shall ensure that prior to entering the river that all vehicles, mobile plant, or machinery is inspected for the presence of invasive or pest aquatic plants including 'didymo'. In the event that an invasive or pest aquatic plant or 'didymo' is discovered upon the vehicle, mobile plant, or machinery it shall be cleaned, to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.
- Note: The machinery shall be cleaned in accordance with the Ministry for Primary Industries cleaning methods which can be found at <http://www.biosecurity.govt.nz/pests/didymo/cleaning>.*
23. In the event of a spill of fuel, hydraulic fluid, or other potential liquid contaminants, immediate steps shall be taken to contain the spilt contaminant. The spilt contaminants and any material used to contain it shall be removed from the site and disposed of at authorised landfill. The consent holder shall also immediately notify the Manager, Environmental Regulation, Wellington Regional Council of the spill and actions to be taken.
24. The consent holder shall ensure that no dry cement product, unset concrete, concrete wash water or any water contaminated with concrete enters the flowing channel of Duck Creek or any water during, or as a result of, the placement or construction of the structures.
25. Upon completion of the works all unused material from the works shall be immediately removed from the bed and banks of the stream and disposed of in an appropriate manner that is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Discovery of artefacts

26. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate

the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Maintenance

2627. The stormwater pipe authorised by this consent shall remain the responsibility of the consent holder and be maintained so that:
- a) Any erosion or scour of the stream bed or banks that is attributable to the works carried out as part of this consent shall be remedied by the consent holder;
 - b) The structural integrity of the structure remains sound in the opinion of a Chartered Professional Engineer; and
 - c) The structures remain substantively clear of debris.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.

Land use consent [33648]

Land use consent to construct three temporary bridges and a temporary stormwater pipe over the bed of Duck Creek, including any associated disturbance, discharge and deposition of material in the bed of that stream.

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the structures and associated activities shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information).

Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities, management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the

details of:

- a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent.
 - b) The commencement date and expected duration of each stage of the works subject to this consent;
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days'** (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

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5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
- b) Statutory, consenting and contractual requirements
- c) Responsibilities and contact details of all parties involved
- d) Details of environmental site induction
- e) Inspections, monitoring and reporting
- f) Complaints and feedback procedures
- g) Process for amending the Environmental Management Plan for Construction
- h) Contingency measures – procedures to be followed in the event of an

environmental incident

- i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
 9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
12. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. The stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Inanga spawning

13. No in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) during a spring tide between 1 March and 31 May, within 1.5 hours of high tide, being a three hour period in total, to provide for inanga spawning.

Freshwater fish

14. The consent holder shall ensure that fish passage is maintained at all times during and after construction.
15. No in stream works shall be carried out in the active channel (ie, flowing water in the stream bed) during the key recruitment migration period for native fish species between 1 September to 30 November inclusive.

Final Construction Plans (pre-works requirement)

16. Prior to commencing construction of the bridges, the consent holder shall submit a final Construction Plan that has been prepared in consultation with the contractor undertaking the works, which includes, but is not limited to, details of:
 - a) The design and location of the bridges, and
 - b) The methodology to be used for the construction of the bridge.
17. Prior to placing the stormwater pipe, the consent holder shall submit a final Construction Plan which includes, but is not limited to, details of:
 - a) The size, type and location of the stormwater pipe, and
 - b) The methodology to be used for the placement of the stormwater pipe.

The final construction plans for the bridges and the pipe shall be submitted at least **10 working days** prior to the proposed works commencement date for the bridges or pipe to the Manager, Environmental Regulation, Wellington Regional Council. No works authorised under this consent shall commence on until the final construction plans for the structures is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council. All works shall be undertaken in accordance with the approved construction plan.

Reducing effects on water quality

18. The consent holder shall take all steps to minimise sedimentation and increased turbidity of the Duck Creek during the works, including but not limited to:
 - a) Completing all works in the minimum time practicable
 - b) Undertaking works in dry weather conditions, as far as practicable
 - c) Avoiding the placement of construction or excavated material in the wetted channel
 - d) Separating all construction activities from flowing water, and
 - e) Installing appropriate sediment control and treatment measures
19. If heavy rain is expected, the consent holder shall:
 - a) Clean out behind any silt fences in use and remove excess material; and
 - b) Lay A14 filter cloth over any open areas and pin down securely.

20. Any areas of the stream banks that are cut or disturbed as a result of the works shall be stabilised and grassed/replanted as soon as practicable, following completion of the works, to prevent erosion and scour. . The consent holder shall ensure that a method of stabilisation (eg, hydroseeding) is applied within 2 weeks of completion of the works. All stabilisation methods shall be effective within **two months** of being applied or after a longer period if approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. These works shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.
21. The consent holder shall ensure that:
- a) All machinery is thoroughly cleaned of vegetation (eg, weeds), seeds or contaminants at least 10 metres away from any watercourse, water flow channel or stormwater system, prior to entering the site
 - b) All machinery shall be regularly maintained in such a manner to ensure no contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water, or to land where it may enter water, from equipment being used for the works
 - c) All contaminant storage or re-fuelling areas are bunded or contained in such a manner so as to prevent the discharge of contaminants to water or to land where it may enter water
 - d) No machinery is cleaned, stored or refuelled within 10 metres of any waterbody, water flow channel or stormwater system.
22. The consent holder shall ensure that prior to entering the river that all vehicles, mobile plant, or machinery is inspected for the presence of invasive or pest aquatic plants including 'didymo'. In the event that an invasive or pest aquatic plant or 'didymo' is discovered upon the vehicle, mobile plant, or machinery it shall be cleaned, to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Note: The machinery shall be cleaned in accordance with the Ministry for Primary Industries cleaning methods which can be found at <http://www.biosecurity.govt.nz/pests/didymo/cleaning>.

23. In the event of a spill of fuel, hydraulic fluid, or other potential liquid contaminants, immediate steps shall be taken to contain the spilt contaminant. The spilt contaminants and any material used to contain it shall be removed from the site and disposed of at authorised landfill. The consent holder shall also immediately notify the Manager, Environmental Regulation, Wellington Regional Council of the spill and actions to be taken.
24. The consent holder shall ensure that no dry cement product, unset concrete, concrete wash water or any water contaminated with concrete enters the flowing channel of Duck Creek or any water during, or as a result of, the placement or construction of the structures.
25. Upon completion of the works all unused material from the works shall be

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immediately removed from the bed and banks of the stream and disposed of in an appropriate manner that is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Discovery of artefacts

26. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

Note 1: Evidence of archaeological material may include burnt stones, charcoal, rubbish heaps, shell, bone, old building foundations, artefacts and human burials.

Note 2: Recorded archaeological sites in the vicinity of the subdivision indicate the possibility of further unrecorded archaeological sites that may be disturbed by soil disturbance associated with development of the new lots. An application for an Archaeological Authority must be made to Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site or if there is reasonable cause to suspect that an archaeological site may be modified or destroyed. It is an offence to modify or destroy a site for any purpose without an authority and the Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage. These provisions apply irrespective of whether the works are permitted under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Maintenance

2627. The structures authorised by this consent shall remain the responsibility of the consent holder and be maintained so that:

- a) Any erosion or scour of the stream bed or banks that is attributable to the works carried out as part of this consent shall be remedied by the consent holder;
- b) The structural integrity of the structures remain sound in the opinion of a Chartered Professional Engineer; and
- c) The structures remain substantively clear of debris.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.

Land use consent [33649]

Land use consent to undertake bank stabilisation works within Duck Creek, including any associated disturbance, discharge and deposition of material in the bed of that stream

INTERPRETATION

Wherever used in the conditions below, the following terms shall have the prescribed meaning:

Stabilised means inherently resistant to erosion or rendered resistant, such as by using indurated rock or by the application of basecourse, colluvium, hydroseeding, grassing, mulch, or another method to the reasonable satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and as specified in Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region, September 2002. Where seeding or grassing is used on a surface that is not otherwise resistant to erosion, the surface is considered stabilised once, on reasonable visual inspection by the Manager, Environmental Regulation, Wellington Regional Council, an 80% vegetative cover has been established.

General conditions

1. The location, design, implementation and operation of the bank stabilisation works and associated activities shall be in general accordance with the consent application and its associated plans and documents, and further information, received by the Wellington Regional Council on:
 - 27 July 2015 (Original application)
 - 28 September 2015 (further information and amendments to the application)
 - 29 February 2016 (Memo from Kyle Christensen on flooding and erosion)
 - 3 March 2016 (Memo from Dean Miller with additional ecology information)
 - [6 April 2016 \(Joint Statement of the Flood and Erosion experts, dated 6 April 2016, including updated Plan 251.\)](#) *Plan showing the agreed bank stabilisation works.*

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Where there may be contradiction or inconsistencies between the application and further information provided by the applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the applicant and conditions of the consent, the conditions apply.

Note: Any change from the location, design concepts and parameters, implementation and/or operation may require a new resource consent or a change of consent conditions pursuant to Section 127 of the Resource Management Act 1991.

2. For the purposes of section 125(1) of the Resource Management Act 1991, this consent shall lapse if not given effect to within 10 years after the date of commencement of the consents.
3. The consent holder shall provide a detailed schedule of construction activities,

management plans and monitoring plans, to the Manager, Environmental Regulation, Wellington Regional Council, and Ngāti Toa Rangatira at least **20 working days** prior to the commencement of works. This schedule shall be updated at monthly intervals during the works. The schedule shall include the details of:

- a) The timing all pre-construction plans to be submitted to the Manager, Environmental Regulation, Wellington Regional Council, in accordance with the conditions of this consent.
 - b) The commencement date and expected duration of each stage of the works subject to this consent;
 - c) The timing of monitoring reports necessary to fulfil the conditions of this consent.
4. The Manager, Environmental Regulation, Wellington Regional Council, shall be given a minimum of **two working days**' (48 hours) notice prior to the works commencing for each stage of the works.

Note: Notifications must be emailed to notifications@gw.govt.nz. Please include the consent reference (WGN160028) and the name and phone number of a contact person responsible for the proposed works.

5. The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking works authorised by this consent, prior to the works commencing.

Note: It is recommended that the contractors be verbally briefed on the requirements of the conditions of this consent prior to works commencing.

6. The consent holder shall ensure that a copy of this consent and all documents and plans referred to in this consent, are kept on site at all times and presented to any Wellington Regional Council officer on request.

Environmental Management Plan for Construction

7. The consent holder shall prepare and submit an Environmental Management Plan for Construction (EMPC) to the Manager, Environmental Regulation, Wellington Regional Council, at least **20 working days** prior to the proposed commencement date for the works authorised under this consent.

The EMPC shall include, but not be limited to, the following:

- a) Environmental objectives, including specific reference to avoiding or mitigating adverse effects including sedimentation on the Duck Creek and Pauatahanui Inlet receiving environments
- b) Statutory, consenting and contractual requirements
- c) Responsibilities and contact details of all parties involved
- d) Details of environmental site induction
- e) Inspections, monitoring and reporting

- f) Complaints and feedback procedures
 - g) Process for amending the Environmental Management Plan for Construction
 - h) Contingency measures – procedures to be followed in the event of an environmental incident
 - i) Environmental impacts and risk assessment, including the site limitations, main construction activities and potential adverse effects due to the works
 - j) Provisions for archaeology, including whether an archaeological authority is required under the Heritage New Zealand Pouhere Taonga Act 2014 and/or procedures to be followed in the event that archaeological or cultural material is discovered.
8. No works authorised by this consent shall commence until the Manager, Environmental Regulation, Wellington Regional Council has certified in writing that the Environmental Management Plan for Construction is in general accordance with the draft Environmental Management Plan for Construction lodged as part of the application and meets the requirements of this condition.
9. Any amendment proposed to the authorised Environmental Management Plan for Construction shall be submitted in writing by the consent holder and shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council, prior to the implementation of any amendments proposed.

Pre-construction meeting

10. The consent holder shall arrange and conduct a pre-construction site meeting prior to any work authorised by this consent commencing for each stage of the works and must invite, with a minimum of **10 working days'** notice, the Wellington Regional Council and a representative from each key contractor undertaking the works.

Note: In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.

Winter works restrictions

11. No works authorised by this consent shall take place on site during the period of 1 June to 30 September unless otherwise approved by the Manager, Environmental Regulation, Wellington Regional Council in writing.
12. All earthworked areas shall be stabilised during the period between 1 June to 30 September inclusive each year unless a later date is approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. The stabilised surface shall be maintained to the satisfaction of the Manager, Environmental Regulation.

Inanga spawning

13. No in-stream works shall be carried out in the active channel (i.e. flowing water in the stream bed) during a spring tide between 1 March and 31 May, within 1.5 hours of high tide, being a three hour period in total, to provide for inanga spawning.

Freshwater fish

14. The consent holder shall ensure that fish passage is maintained at all times during and after construction.
15. No in stream works shall be carried out in the active channel (ie, flowing water in the stream bed) during the key recruitment migration period for native fish species between 1 September to 30 November inclusive.

Final Construction Plans (pre-works requirement)

16. Prior to commencing the works, the consent holder shall submit a final Construction Plan that has been prepared in consultation with the contractor undertaking the works, which includes, but is not limited to, details of:
 - a) The size, type and location of the bank stabilisation measures,
 - b) The methodology to be used for the placement of the bank stabilisation measures,
 - c) The specific sediment and erosion controls to be used during the placement of the bank stabilisation measures.
 - d) The methodology to be used to temporarily divert the stream during the placement of the bank stabilisation measures.

The final construction plans for the bank stabilisation measures shall be submitted at least **10 working days** prior to the proposed works commencement date for the placement of the first section of bank stabilisation measures to the Manager, Environmental Regulation, Wellington Regional Council. No works authorised under this consent shall commence on until the final construction plans for the bank stabilisation measures is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council. All works shall be undertaken in accordance with the approved construction plan and conditions of this consent.

Mitigation of effects of bank stabilisation structures

17. Rock armouring shall not impact on the proposed in-stream habitat and diversity of longitudinal stream form (i.e. pool/riffle sequences).
18. The extent of rock armouring should be minimised as much as possible and restricted only to particularly high risk localities. Wherever feasible, alternatives to the use of rock protection should be used, such as mass stabilised earth structures.
19. The rocks used for bank stabilisation shall be angular, hard (unweathered) rock and be placed manually to form interlocking matrix without the use of concrete or mortar.

2420. Rock shall be placed with soil well packed into voids and suitable riparian species planted within rock matrix during autumn/winter. Manual watering of planting must be undertaken by the consent holder until the plants are established.

2221. Where possible the upper banks shall be stabilised with appropriate riparian species to establish root mass over time and support shading of the stream in accordance with the EcoRCP intent. These plants shall be locally sourced and grown specimens and planted into a quality growing medium.

Reducing effects on water quality

2322. The consent holder shall take all steps to minimise sedimentation and increased turbidity of the Duck Creek during the works, including but not limited to:

- a) Completing all works in the minimum time practicable
- b) Staging the works so that no more than 50 metres of one bank is having bank stabilisation works installed at any one time.
- c) Undertaking the works in low flow and dry weather conditions, as far as practicable
- d) Avoiding the placement of construction or excavated material in the wetted channel
- e) Separating all construction activities from flowing water, and
- f) Installing appropriate sediment control and treatment measures

2423. If heavy rain is expected, the consent holder shall:

- a) Clean out behind any silt fences in use and remove excess material; and
- b) Lay A14 filter cloth over any open areas and pin down securely.

2524. Any areas of the stream banks that are cut or disturbed as a result of the works shall be stabilised and grassed/replanted as soon as practicable, following completion of the works, to prevent erosion and scour. . The consent holder shall ensure that a method of stabilisation (eg, hydroseeding) is applied within 2 weeks of completion of the works. All stabilisation methods shall be effective within **two months** of being applied or after a longer period if approved in writing by the Manager, Environmental Regulation, Wellington Regional Council. These works shall be to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

2625. The consent holder shall ensure that:

- a) All machinery is thoroughly cleaned of vegetation (eg, weeds), seeds or contaminants at least 10 metres away from any watercourse, water flow channel or stormwater system, prior to entering the site
- b) All machinery shall be regularly maintained in such a manner to ensure no contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water, or to land where it may enter water, from equipment being used for the works
- c) All contaminant storage or re-fuelling areas are bunded or contained

in such a manner so as to prevent the discharge of contaminants to water or to land where it may enter water

- d) No machinery is cleaned, stored or refuelled within 10 metres of any waterbody, water flow channel or stormwater system

2726. The consent holder shall ensure that prior to entering the river that all vehicles, mobile plant, or machinery is inspected for the presence of invasive or pest aquatic plants including 'didymo'. In the event that an invasive or pest aquatic plant or 'didymo' is discovered upon the vehicle, mobile plant, or machinery it shall be cleaned, to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Note: The machinery shall be cleaned in accordance with the Ministry for Primary Industries cleaning methods which can be found at <http://www.biosecurity.govt.nz/pests/didymo/cleaning>.

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2827. In the event of a spill of fuel, hydraulic fluid, or other potential liquid contaminants, immediate steps shall be taken to contain the spilt contaminant. The spilt contaminants and any material used to contain it shall be removed from the site and disposed of at authorised landfill. The consent holder shall also immediately notify the Manager, Environmental Regulation, Wellington Regional Council of the spill and actions to be taken.

2928. Upon completion of the works all unused material from the works shall be immediately removed from the bed and banks of the stream and disposed of in an appropriate manner that is to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

Discovery of artefacts

29. If koiwi, taonga or other archaeological material is discovered in any area during the works, work shall immediately cease and the consent holder shall contact Ngati Toa Rangatira, Heritage New Zealand and Wellington Regional Council within twenty-four hours. If human remains are found, the New Zealand Police shall also be contacted. The consent holder shall allow the above parties to inspect the site and in consultation with them, identify what needs to occur before work can resume.

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under the Resource Management Act 1991 by the provisions of a plan or resource consent. Seeking advice from Heritage New Zealand is recommended when planning for any soil disturbances, such as building platforms, fencing or landscaping.

Maintenance

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- a) Any erosion or scour of the stream bed or banks that is attributable to the works carried out as part of this consent shall be remedied by the consent holder;
 - b) The structural integrity of the stream banks remains sound in the opinion of a Chartered Professional Engineer; and
 - c) The bank stabilisation structures remain substantively clear of debris.

Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.