Dated 30 August 2013

FURTHER NORTH

Resource Consent Conditions

Definitions	
CESCP	Construction Erosion and Sediment Control Plan
Construction Works	Activities undertaken to construct the Project, excluding Enabling Works.
Control Site	A site within each of the Mahurangi and Pūhoi Harbours that will not be affected by construction
Council	Auckland Council
Enabling Works	Preliminary activities including such things as geotechnical investigations (including access roads), sealing roads, establishment of mitigation measures (such as earth bunds and planting).
Erosion Prone Stream	Streams with soft bottoms (not rock) that are predicted to be subject to flow changes of >15% to peak 2 year and 10 year ARI flows compared to predevelopment
Flat Country	That part of the Project to the north of the Perry Road Viaduct
Hill Country	That part of the Project to the south of the Perry Road Viaduct
Intermittent Stream	Any stream or part of a stream that is not a Permanent Stream
Manager	Manager Major Infrastructure Projects Team, Auckland Council
Permanent Stream	Downstream of the uppermost reach of a river or stream that meets either of the following criteria (a) Has continual flow; or (b) Has natural pools having a depth at their deepest point of not less than 150 millimetres and a total pool surface area that is 10m² or more per 100 metres of river or stream bed length. The boundary between Permanent and Intermittent river or stream reaches is the uppermost qualifying pool in the uppermost qualifying reach.
Project	The construction, maintenance and operation of the Ara Tūhono Pūhoi to Wellsford Road of National Significance: Pūhoi to Warkworth section
Project Area	The [XX designation] footprint.
Stage	Any area within the Project as nominated by the Consent Holder
TP10	Auckland Council Technical Publication 10 - Stormwater management devices: Design guidelines manual 2003

TP90	Auckland Council Technical Publication 90 - Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 1999 (updated 2007)
USLE	Universal Soil Loss Equation

General

Consent lapse and expiry

1 Pursuant to section 125(1) of the Act, the Consents 33/003 – 33/017 shall lapse 15 years from the date of their commencement unless they have been given effect, surrendered or been cancelled at an earlier date.

2 Pursuant to section 123(c) of the Act, the Consents 33/004 - 33/011 and 33/013 – 33/015 shall expire 35 years from the date of their commencement.

3 Pursuant to section 123(c) of the Act, the Consents 33/003, 33/012, 33/016 and 33/017 shall expire 15 years from the date of their commencement.

Review

4 These Conditions may be reviewed by the Manager under section 128 of the Act, by giving notice pursuant to section 129 of the Act, annually during construction and otherwise biannually at most, in order:

(a) To deal with any adverse effect on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or

(b) To review the adequacy of any monitoring.

Iwi Advisor

5 At least 12 months prior to commencement of Construction Works, the Consent Holder shall request that Hōkai Nuku (being comprised of the representatives for Ngāti Whatua, Ngāti Whatua o Kaipara, Te Uri o Hau, and Ngāti Manuhiri) appoint an iwi advisor or other nominated kaitiaki (together the Iwi Advisor) to undertake the roles and responsibilities set out in these conditions.

6 Where no Iwi Advisor is appointed by Hōkai Nuku within 6 months prior to commencement of Construction Works or where at any time the appointed Iwi Advisor is unavailable or unwilling to undertake their roles and responsibilities set out in these conditions, the Consent Holder shall seek the advice of Hōkai Nuku prior to commencing an activity where the Iwi Advisor's input would otherwise be required and shall have regard to any advice provided by Hōkai Nuku.

Construction Environmental Management Plan

7 The Consent Holder shall produce a Construction Environmental Management Plan (CEMP). The purpose of the CEMP is to assist with the implementation of the Project and shall include:

(a) The roles and responsibilities of construction management staff;

(b) A description of the training and education programme that will be implemented to ensure compliance with conditions;

(c) Methods for undertaking monitoring, maintenance, auditing and reporting required in the conditions;

(d) The details of emergency contacts and responses; and

(e) Methods for responding to queries and complaints.

Preconstruction monitoring

8 The Consent Holder shall undertake baseline monitoring of the Mahurangi and Pūhoi Harbours and of freshwater environments that are representative of the Project Area.

9 At least 20 working days prior to any baseline monitoring commencing, the Consent Holder shall submit a programme for the baseline monitoring to the Manager for approval. The programme shall include the methodology for undertaking the baseline monitoring, including the requirements set out in Conditions 10 to 12. If the Consent Holder has not received a response from the Manager within 20 working days, the Consent Holder will be deemed to have approval and can commence baseline monitoring.

10 The monitoring shall be undertaken to:

(a) Confirm baseline environmental conditions, represented by:

i. sediment quality and benthic invertebrate community compositions in the marine environment;

ii. fish distribution, macroinvertebrates, periphytes, stream survey and transects in freshwater environments; and

iii. water quality, limited to TSS, pH, turbidity, nitrogen and phosphorous.

(b) Identify the baseline condition of Erosion Prone Streams.

11 Baseline monitoring shall be undertaken:

(a) At:

i. Five (5) sites potentially affected by the Project and one (1) control site in each of the Mahurangi and Pūhoi Harbours; plus one site potentially affected by the Project in the Okahu Inlet; and

ii. Two (2) representative freshwater sites across each of the Hill Country and the Flat Country.

(b) For one summer and one winter period prior to commencement of Construction Works.

12 The baseline monitoring programme shall also include a single walkover of all Erosion Prone Streams, and recording of erosion areas, including photographs.

13 The Consent Holder shall provide to the Manager the results of the baseline monitoring within 60 working days of the final monitoring being undertaken.

Earthworks

Erosion and Sediment Control Plan

14 The Consent Holder shall prepare an Erosion and Sediment Control Plan (ESCP) for the Construction Works entire Project that shall advance the following objectives:

(a) To minimise the volume and area of the proposed earthworks required for the Project through the design of batter slopes and road alignments appropriate to expected soil types and geology;

(b) To maximise the effectiveness of erosion and sediment control measures associated with earthworks by minimising potential for sediment generation and sediment yield; and

(c) To ensure that earthworks authorised under this consent shall to the extent practical avoid, remedy or mitigate effects on surface water bodies within or beyond the Project boundary

The Consent Holder shall engage with the Iwi Advisor while preparing the ESCP.

15 At least 20 working days prior to commencement of Construction Works, the Consent Holder shall submit the ESCP to the Manager for approval. If the Consent Holder has not received a response from the Manager within 20 working days of submitting the ESCP, the Consent Holder will be deemed to have approval and can commence earthworks.

16 The ESCP shall include the following:

General

(a) Identification of appropriate structural and non-structural erosion and sediment control measures to be installed prior to and during all Construction Works for representative parts of the Project including earthworks, coastal and works within watercourse activities;

(b) The approach and procedures for ensuring sufficient advance warning of a heavy rainfall event; and

(c) The methods and procedures to be undertaken for decommissioning of erosion and sediment control measures.

Responsibilities

(d) Identification of:

i. Appropriately qualified and experienced staff to manage the erosion and sediment control devices, associated maintenance procedures and monitoring requirements;

ii. Staff directly responsible for supervising installation and maintenance of erosion and sediment control devices and the associated works;

iii. A chain of responsibility for managing erosion and sediment control issues;

iv. An erosion and sediment control management team (including representatives from the contractor, Council and the Consent Holder) to review erosion and sediment control practices and procedure; and

v. Proposed training requirements for staff.

Incident Management

(e) Identification of the process to identify, record and investigate incidents that result in the release of accidental discharge of contaminants or material into any watercourse due to any of the following:

i. discharges from non-stabilised areas that are not treated by erosion and sediment control measures required under this consent; and/or

ii. failure of any erosion and sediment control measures; and/or

iii. any other incident which either directly or indirectly causes, or is likely to cause, adverse ecological effects in any watercourse that is not authorised by a resource consent held by the Consent Holder.

Erosion and Sediment Control Criteria

Location

17 All erosion and sediment control devices should be located outside the 20 year ARI flood level, unless no other viable location exists.

18 Clean water diversion channels and bunds shall be designed to accommodate the 20 year ARI rain event.

19 Dirty water runoff diversion channels shall be sized to accommodate the 20 year ARI rain event.

20 At all practical times, stream works activities and associated works shall be undertaken with all stream flows diverted, included via bypass pumping, around the works area.

Maximum Exposed areas

21 Unless otherwise varied in accordance with the Adaptive Management Programme (set out in Conditions 29 to 34), the maximum open area of earthworks limitations shall apply as follows:

(a) Pūhoi Catchment (ie south of Moirs Hill Road) – 41ha at any one time; and

(b) Mahurangi Catchment (ie north of Moirs Hill Road) – 41ha of Hill Country and 21.5 ha of Flat Country (or equivalent ratios) at any one time.

Equivalent Ratios:

A one ha increase in open area of earthworks in the Flat country (above the 21.5 ha limit discussed above) will require a corresponding 0.467 ha reduction in open areas of earthworks in the Hill Country.

The reverse situation is equally applicable, in that a 1 ha increase in open area of earthworks within the Hill Country, (above the 41 ha limit discussed above) will require a corresponding 2.14 ha reduction of open area of earthworks in the Flat country, subject to a maximum open area of earthworks within the Hill Country of 51.05 ha which will result in no earthworks activity being permitted to take place within the Flat country during the same time period.

22 For earthworks activity taking place within the indurated rock of the Pakiri Formation geology, no seasonal limitation shall apply. For all other geology areas no bulk earthwork activities shall occur between 30 April and 1 October (winter period) in any one year unless otherwise agreed with the Manager. An assessment of whether bulk earthworks can occur within the winter period will be based on:

(a) Previous compliance;

(b) The AMP procedures in condition 31;

(c) The nature of the specific works proposed to be undertaken in the winter period; and

(d) The location of the specific works.

General design criteria

23 Unless otherwise agreed with the Manager, the Consent Holder shall design, construct and maintain all erosion and sediment control devices to achieve TP90 and the following design practices (which do not form part of TP 90):

(a) Pumping of sediment laden runoff and groundwater during Construction Works shall be to sediment retention ponds, decanting earth bunds, grass buffer zones or temporary sediment retention devices such as container impoundment systems;

(b) All decanting earth bunds shall be fitted with floating decants;

(c) Stream work construction methodologies, including stream assessments, fish species assessment, fish migration assessment and any required fish relocation provisions;

(d) Details of the presence and management of any unexpected geological conditions such as high or low pH soil conditions;

(e) The mechanism to establish and define changes to erosion and sediment control that are considered minor which would not require further certification by the Manager prior to implementation;

(f) How to identify areas susceptible to erosion and sediment deposition and implement erosion and sediment control measures appropriate to each situation with particular emphasis on high-risk areas (determined through sediment yield calculations);

(g) All construction yard areas shall achieve the detention requirements as detailed within the NZTA Erosion and Sediment Control Standard; and

(h) For the pre-cast yard facility, pH levels for all discharges shall be within the range of 6.5 to 8.5.

Construction Erosion and Sediment Control Plans

24 The Consent Holder shall prepare specific Construction Erosion and Sediment Control Plans (CESCPs) for each Stage of the Project, which shall demonstrate the best practicable option to achieve the objectives included in Condition 14 and advanced by the ESCP. The Consent Holder shall engage with the Iwi Advisor while preparing the CESCPs.

25 At least 5 working days prior to the commencement of work in each Stage of the Project, the Consent Holder shall submit a CESCP for that Stage of the Project to the Manager for certification. Work shall not commence in any Stage of the Project until the Consent Holder has received the Manager's written certification of the CESCP for that Stage. The certification will confirm the CESCP has been prepared in accordance with the ESCP and meets the criteria identified in Conditions 17 to 23. If the Consent Holder has not received a response from the Manager within 5 working days of submitting a CESCP, the Consent Holder will be deemed to have certification and can commence earthworks.

Advice Note: Each CESCP is considered to be a short succinct document of a few pages and associated drawings which will be utilised primarily by the "on the ground" contractor for implementation and maintenance provision purposes.

26 All earthworks shall be carried out in accordance with the relevant CESCP.

Certification of compliance with CESCP

27 As-built(s) signed by an appropriately qualified and experienced erosion and sediment control practitioner shall be submitted to the Manager as confirmation that the erosion and sediment control measures for that CESCP have been constructed in accordance with the relevant CESCP including the extent of exposed areas.

Incident Management

28 If any of the incidents occur as identified in the ESCP, the Consent Holder shall:

(a) re-establish erosion and sediment control measures as soon as practicable where these have failed or have not been implemented in accordance with the ESCP or CESCP;

(b) liaise with the Manager to establish the extent of any remediation or rehabilitation that is required and establish whether such remediation or rehabilitation measures are practical to implement;

(c) carry out any remedial and/or mitigation action as required by and to the satisfaction of the Manager; and

(d) maintain a permanent record of the incident on the site, which shall include the date and time of the incident, the nature, manner and cause of the release of the contaminants, weather conditions at the time of the incident and the steps taken to contain any further release and to remedy any adverse ecological effects on the watercourse.

Adaptive Monitoring Programme

29 At least 20 working days prior to the commencement of Construction Works, the Consent Holder shall submit an Adaptive Monitoring Plan (AMP) to the Manager for certification. The purpose of the AMP is to identify the monitoring processes to be adopted alongside any CESCP to assist with minimising sediment yield.

30 The Manager's certification of the AMP will confirm the AMP has been prepared in accordance with Condition 31 to 32. If the Consent Holder has not received a response from the Manager within 20 working days of submitting the AMP, the Consent Holder will be deemed to have certification and can implement the AMP.

31 The AMP shall include procedures for undertaking:

(a) On site visual assessments of all erosion and sediment control structures;

(b) Device monitoring including flocculation;

(c) Automatic onsite rainfall monitoring;

(d) Flow monitoring from two selected sediment retention devices;

(e) Automatic sediment sampling from two selected sediment retention devices;

(f) Identification of freshwater and marine ecological trigger levels, response criteria and reporting requirements.

32 The AMP shall include the following requirements:

(a) If rain is forecast for the Project Area, the Consent Holder shall undertake pre-rain inspections and any maintenance and install any additional measures that are required to ensure erosion and sediment controls operate as effectively as possible during the rain event.

(b) The Consent Holder shall carry out manual sediment monitoring if one of the following trigger events occur during construction:

i. Greater than 25mm of rainfall over any 24 hour period (as measured by the automatic onsite rainfall device) where a construction area subject to a CESCP is not stabilised; or

ii. Greater than 15mm of rainfall within an hour period where a construction area subject to a CESCP is not stabilised; or

iii. Spillage/accidents that cause a discharge of sediment or contaminants to the aquatic environment; or

iv. Obvious degradation of the receiving environment immediately downstream of the sediment retention ponds, such as accumulation of sediment, conspicuous oil/grease, scums/foams, floatable matter, fish kills, discolouration of water or significantly increased growth of nuisance algae.

(c) Within 36 hours of any of the trigger events in Condition 32(b) occurring, the Consent Holder shall investigate the erosion and sediment control measures for all un-stabilised earthwork areas to determine whether there has been a discharge from the devices. If there has been a discharge the Consent Holder shall:

i. Inspect the earthworks site and erosion and sediment control devices to identify any problems or activities likely to have contributed to the increased sediment discharge; and

ii. Take manual samples of discharges; and

iii. Remedy any identified problems, and implement any further controls on activities that are likely to contribute to sediment discharge.

(d) If freshly deposited earthworks-derived sediment that is attributable to the Project is detected within the freshwater environment or the coastal marine area, the Consent Holder shall measure the sediment deposition depth and take GPS measures of the sediment location where possible. If the earthworks-derived sediment has been deposited to a depth of ≥ 3mm over a continuous area of 1000m² (or greater) or over a discontinuous area of 1000m² within an area of 3000m², the Consent Holder shall repeat the measuring of the depth and extent of sediment three days after the first triggered inspection.

(e) If, after the second triggered sediment depth and area inspection, the deposition depth and extent exceeds the measurements noted in Condition 32(d), the Consent Holder shall engage a suitably qualified ecologist to undertake an ecological survey of the affected area within 48 hours of the second sediment investigation. In the event that significant adverse effects on ecological values are identified, the Consent Holder shall develop and implement appropriate remedial measures with the agreement of the Council.

33 The Consent Holder shall ensure that:

(a) All monitoring required under the AMP is undertaken by a suitably qualified and experienced erosions and sediment control practitioner, except for the ecological surveys in Condition 32(e);

(b) The results of all monitoring carried out pursuant to the AMP are submitted to the Manager within 10 working days of a triggered event in Condition 32(b) and also at quarterly intervals for all monitoring for the Council's information;

(c) Records are to be kept to demonstrate where monitoring is not possible due to dry conditions; and

(d) In the event that an exceedance is recorded for any monitored parameter, an adaptive management process is immediately instigated, as described in the AMP, and in consultation with the Manager.

34 In the event that the results and analysis of the AMP identify a reduction in sediment yield, the Consent Holder can apply to the Manager to increase the open area limitation for either or both catchments, Hill Country and Flat Country sites. This revision of open area may apply to the entire catchment area or for a specific Stage of works. Such a revision of open area will be subject to approval from the Manager.

Enabling Works

35 The Consent Holder shall prepare specific CSECPs for the Enabling Works for the Project, which shall demonstrate the best practicable option to achieve the objectives included in Condition 14. The Consent Holder shall engage with Hōkai Nuku while preparing the CESCPs for the Enabling Works.

36 At least 5 working days prior to the commencement of Enabling Works, the Consent Holder shall submit a CESCP for those Enabling Works to the Manager for approval. Enabling Works shall not commence in until the Consent Holder has received the Manager's written approval for the CESCP for the Enabling Works. The approval will confirm any such CESCP meets the criteria identified in Conditions 17 to 23. If the Consent Holder has not received a response from the

Manager within 5 working days of submitting a CESCP, the Consent Holder will be deemed to have approval and can commence Enabling Works.

Dust management

37 At least 20 working days prior to commencement of Construction Works, the Consent Holder shall prepare and implement a Construction Dust Management Plan (CDMP) to the Manager. The CDMP shall describe the measures to be adopted to avoid, as far as practicable, dust and fumes arising from construction activities, beyond the boundary of the designation. A copy of the CDMP shall be submitted to the Manager.

38 The Consent Holder shall use best endeavours to seal sections of any road used by construction vehicles where there are residential dwellings within 50 metres of the road.

Works in a water course

39 Prior to the commencement of works within the relevant watercourse, the Consent Holder shall engage a suitably qualified freshwater ecologist to undertake a survey of every intermittent and permanent watercourse that may be affected by Construction Works to identify the following characteristics:

(a) Typology – informed by Appendix A of this consent;

(b) Instream ecology and fish species (and the extent of their habitat); and

(c) Whether the watercourse falls to being permanent or intermittent.

Streamworks

40 The Consent Holder shall design all culverts, bridges, and permanent stream diversions:

(a) To allow for the 100 year ARI event; and

(b) To address the risks of non-performance, such as blockage.

The Consent Holder shall engage with the Iwi Advisor while undertaking the design.

41 Culvert design shall incorporate:

(a) Fish passage (where determined necessary and viable by a suitably qualified ecologist); and

(b) Energy dissipation and erosion control to minimise the occurrence of bed scour and bank erosion in receiving environments.

42 The Consent Holder shall design all stream diversions to have natural stream forms where the streams are permanent and support fish habitats as informed by the typologies attached in Appendix A to this consent.

43 The Consent Holder shall ensure that stream diversions are in general accordance with stream diversion requirements in Appendix B for flow, channel stability, instream habitat and riparian planting.

44 At least 20 working days prior to commencement of the relevant works within a water course, the Consent Holder shall submit the design drawings for permanent culverts, bridges and stream diversions to the Manager for certification that those details meet Conditions 40 to 43. If the Consent Holder has not received a response from the Manager within 20 working days of submitting the design drawings, the Consent Holder will be deemed to have certification and can commence the works within a water course.

45 The Consent Holder shall undertake monitoring at six (6) month intervals for two (2) years following construction of works in Erosion Prone Streams. Monitoring shall consist of stream walkovers of Erosion Prone Streams and recording of erosion-prone areas, including photographs. If monitoring identifies new erosion that is attributable to the Project by a suitably qualified engineer (using the baseline data obtained pursuant to Condition 11), the Consent Holder shall implement remedial action in the form of stream stabilisation measures.

Ecology

46 Prior to the commencement of works in sections of streams that support a population of fish, the Consent Holder shall ensure that any fish present in that section of stream are recovered and transferred to another section of that stream. The stream section where the fish are transferred to shall be isolated from the section of the stream where the works are being undertaken to prevent fish re-entering. This transfer process shall be detailed within the CESCP for that specific Stage of works.

47 The Consent Holder shall undertake riparian planting on permanent streams that have sections that are culverted. The extent of planting shall be commensurate to length of stream culverted and the quality of that stream as assessed in Condition 39. All riparian planting shall be undertaken in accordance with the Urban and Landscape Design Framework, required under the designation conditions for the Project.

Stormwater Discharge

48 The Consent Holder shall design permanent stormwater measures:

(a) To remove at least 75% of Total Suspended Solids (TSS) loads on an average annual basis by design in accordance with TP10 guidelines or variations agreed with Council (for example vegetated roadside drains for local roads);

(b) For extended detention of 34.5 mm of rainfall for all discharges to stream environments. This excludes discharges that are in close proximity to the Pūhoi Estuary and tidally influenced area;

(c) For the 100 year ARI event including provision for overland flow up to this event; and

(d) To include erosion control for stormwater outfalls to minimise the occurrence of bed scour and bank erosion in receiving environments.

The Consent Holder shall engage with the Iwi Advisor when designing permanent stormwater measures.

49 The Consent Holder shall design permanent wetlands to include:

(a) Forebays and submerged or baffled low flow outlets so that floatables and litter can be trapped at the main outlet; and

(b) Planting in emergent, littoral and riparian zones and that dense, healthy planting is maintained in operation with vegetation providing some shading.

50 The Consent Holder shall use pre-treatment measures where higher sediment loads are anticipated, such as sediment traps for sediment eroded off rock cuts.

51 The Consent Holder shall maintain stormwater treatment devices to ensure that the criteria in Conditions 48 and 49 of this consent are achieved.

52 The Consent Holder will submit the final design of the permanent stormwater measures (ie excluding conveyance measures) to the Council for Manager approval. The final design, which may be provided in parts, shall be submitted to the Council at least 20 working days prior to the commencement of construction of permanent stormwater measures in the applicable area. If the Consent Holder has not received a response from the Manager within 20 working days of submitting the final design, the Consent Holder will be deemed to have approval and can commence construction.

Flooding

53 The Consent Holder shall ensure that there is no increase in maximum flood level north of Woodcocks Road of more than 100 mm for the 100 year ARI event unless otherwise approved by Council. Compliance with this Condition shall be demonstrated by hydraulic modelling and provided to the Manager.

54 All works in a water course shall be carried out in accordance with designs approved in Conditions 44 and 52.

Coastal Works

55 At least 20 working days prior to the commencement of works in the coastal marine area, the Consent Holder shall provide the Manager with plans (including dimensioned cross sections, elevations and site plans) of the permanent and temporary structures within the coastal marine area during the construction and operation of the Project.

56 Construction Works in the coastal marine area shall be undertaken in accordance with a CESCP. Such CESCP shall be prepared accordance with Conditions 24 and 25.

57 The Consent Holder shall maintain the construction site in good order and where appropriate remedy any damage and disturbance of the foreshore and seabed caused by plant and equipment during construction.

58 The Consent Holder shall ensure all equipment, erosion and sediment control measures and construction materials are removed from the coastal marine area within 40 days following completion of Construction Works.

59 Prior to commencement of Construction Works within the Okahu Inlet, adult mud snails present on the mudflat within the construction footprint shall be collected by hand, and relocated to a similar area of mudflat at least 20 metres from the outer limits of the construction area. The time between collection of snails and relocation should not exceed two hours, in order to minimise stress on the snails. Collection and relocation of snails shall be carried out by a suitably qualified marine ecologist. The Consent Holder shall engage with the Iwi Advisor to ensure the Iwi Advisor (or representative of Hokāi Nuku) is invited to be present during the collection and relocation of the snails.

60 The area of mangrove and saltmarsh removal within Okahu Inlet shall be minimised as far as practicable.

61 Mangrove and saltmarsh removal shall be undertaken between 1 March and 31 July in order to avoid the wading bird primary breeding season.

62 Where mangrove or saltmarsh removal is required, the vegetation shall be removed from the estuary and disposed of at an approved facility in order to avoid potential adverse effects from decaying vegetation on mudflat habitat.

Coastal monitoring

63 The Consent Holder shall undertake three forms of coastal ecological monitoring:

(a) Baseline surveys in the Mahurangi and Pūhoi Harbours;

(b) Site specific surveys that are triggered by potential sediment discharge events in accordance with Condition 32; and

(c) Monitoring of benthic habitat before and after temporary disturbance in the Okahu Inlet.

64 The Consent Holder shall undertake baseline monitoring of benthic invertebrate assemblages and sediment quality in the Mahurangi and Pūhoi harbours to form a baseline set of data that can be used to determine whether potential sediment discharges from the Project cause an adverse effect to marine ecological values. Monitoring shall:

(a) Be carried out by a suitably qualified marine ecologist;

(b) Be undertaken at five (5) sites potentially affected by the Project and one (1) control site in each of the Mahurangi and Pūhoi harbours;

(c) Include six (6) monthly benthic invertebrate and sediment quality surveys, including two summer and two winter surveys during construction (in addition to the preconstruction monitoring under Conditions 8 to 12);

(d) Include surface sediment quality surveys of concentrations of copper, lead, zinc, TOC and HMW-PAHs in both total sediment and the <63µm fraction, plus grain size analysis of the total sediment sample.

65 If after collection of one year of pre-construction baseline monitoring (provided for in Conditions 8 to 12) and two years during-construction monitoring (provided for in Condition 64), statistical analysis of the ecological data suggests that the inter-annual variation in the invertebrate community and sediment quality is low, then no further routine six (6) monthly surveys will be required.

66 In addition to the pre-construction monitoring in Conditions 8 to 12, the Consent Holder shall undertake at least one summer and one winter post-construction survey of benthic invertebrate assemblages and sediment quality at one (1) site in the Okahu Inlet where an access track is proposed to be located. The purpose of the monitoring is to confirm that natural rehabilitation processes occur after the removal of the access track. If natural rehabilitation processes do not occur within the post-construction monitoring period, the Consent Holder shall develop and implement remedial action with the approval of the Council.

Air Discharge – Rock Crusher

67 At least 20 working days prior to the commencement of any rock crushing the Consent Holder will submit a Rock Crusher Management Plan (RCMP) for approval. If the Consent Holder has not received a response from the Manager within 20 working days of submitting the RCMP, the Consent Holder will be deemed to have approval and can commence rock crushing works.

68 The purpose of the RCMP is to ensure that beyond the boundary of the Project Area there shall be no discharges, including hazardous air pollutants, dust or visible emissions, caused by the operation of the mobile rock crusher that, in the opinion of the Manager, are noxious, dangerous, offensive or objectionable or does or could cause adverse effects on human health, the environment or property.

69 The RCMP shall:

(a) Identify the location(s) of any mobile rock crusher for the duration of construction,

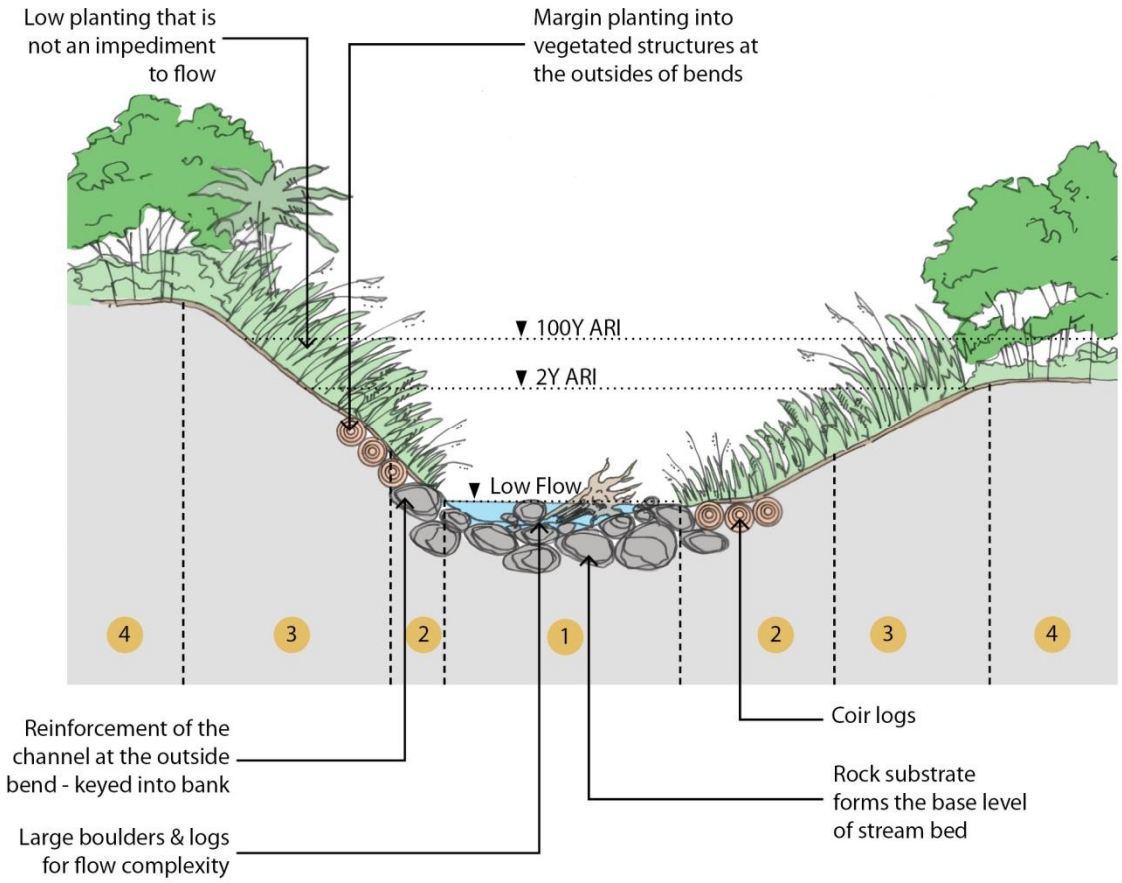
(b) Identify potentially sensitive receivers,

(c) Identify methods to manage dust suppression including any emissions control equipment and any recording of weather conditions.

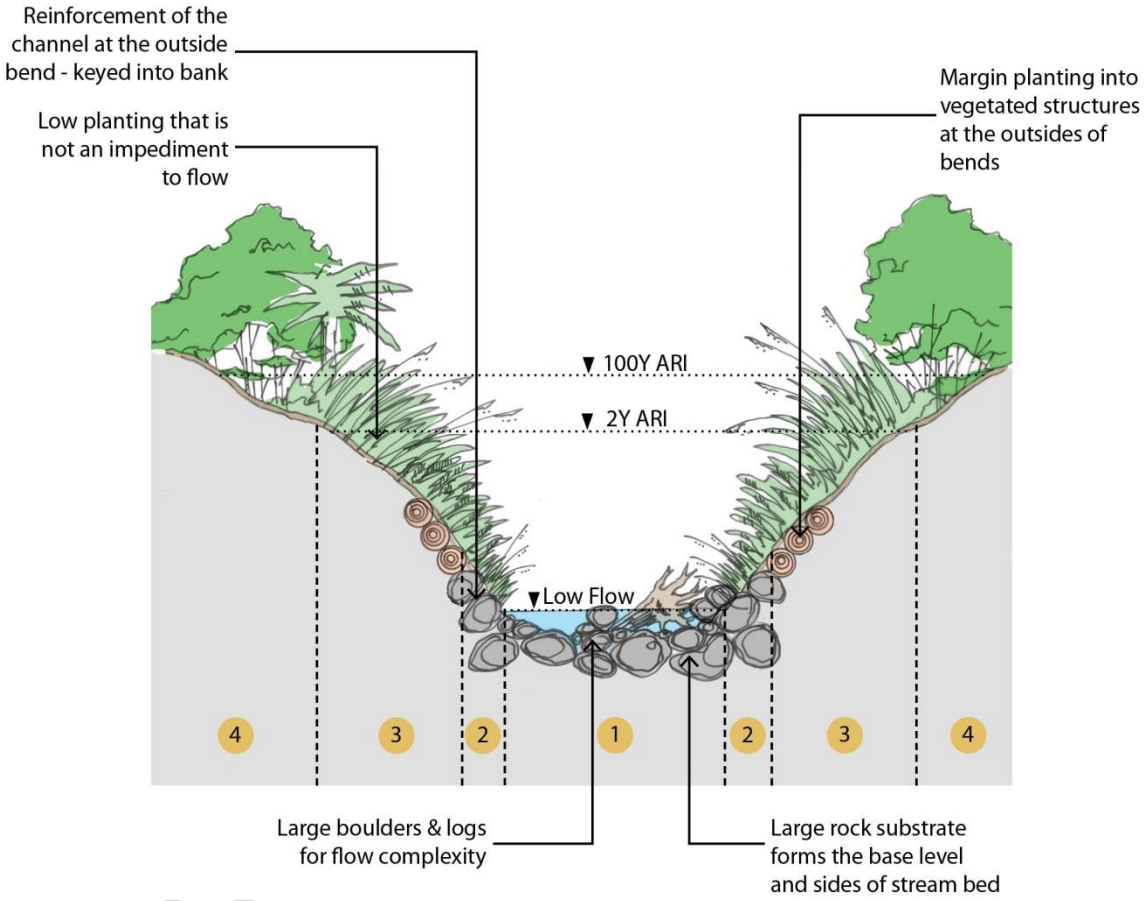
70 The Consent Holder shall operate any mobile rock crusher in accordance with the RCMP.

Appendix A

Stream diversion Type 1 – Lowland stream cross section

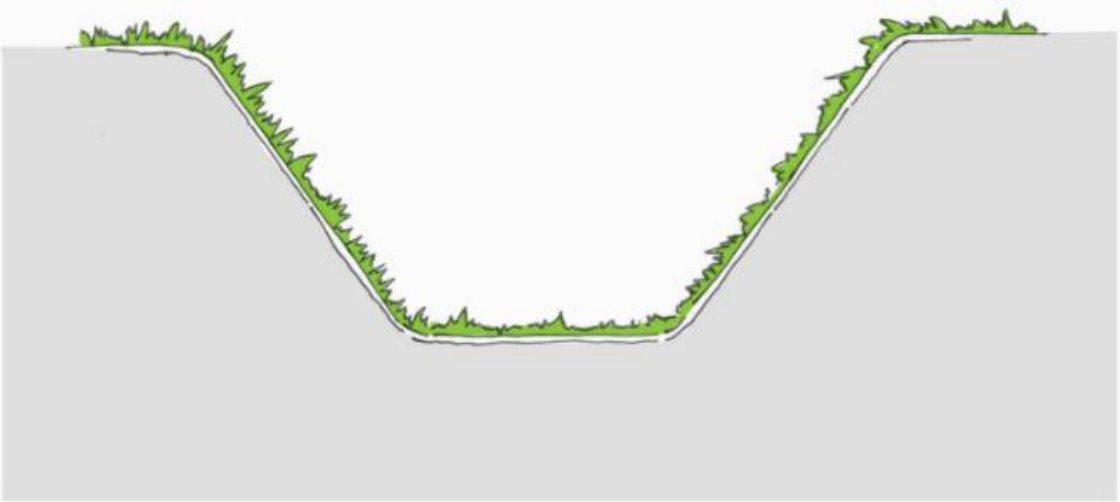


Stream diversion Type 2 – Steep stream cross section



Stream diversion Type 3 – Flow channel cross section

Rock-Lined Flow Channel for High Flow and/or Steep Gradients



Grass-Lined Flow Channel for Low Flow and/or Flat Gradients

Appendix B

	STREAM DIVERSION TYPE		
Requirement	**1** **Lowland Stream**	**2** **Steep Stream**	**3** **Flow Channel**
Flow	• Flood conveyance of 100 year ARI rainfall event with stop bank if required; • Low flow channel; • Main channel for the 2 year ARI rainfall event; • Flood berm for larger events; and • Maintain velocity to mitigate ponding and stagnant water.	• Flood conveyance of 100 year ARI rainfall event; • Low flow channel; • Main channel for the 2 year ARI rainfall event; and • Flood berm for larger events.	Flood conveyance of 100 year ARI rainfall event.
Channel Stability	Stable for 2-year ARI floods.	Stable for 2-year ARI floods.	Stable for 100-year ARI floods, lined as appropriate to achieve stability (e.g. grass or rock lined).
In-stream Habitat	• Low continuous gradient; • Meanders; • Complexity (variety of logs and rocks that change flow patterns and provide resting places); and • Continuous low flow channel.	• Steep gradients; • Pools and cascade sequences; • Complexity (variety of logs and rocks that change flow patterns and provide resting places); and • Continuous wetted surface for climbing species.	No requirement for in-stream habitat.

	STREAM DIVERSION TYPE		
Requirement	**1** **Lowland Stream**	**2** **Steep Stream**	**3** **Flow Channel**
Riparian	• Replicate the existing environment as much as possible; • Riparian zone to be 10-20m on either side of the stream edge. Riparian zone to be a heterogeneous planting regime, which reflects what is existing. Planting to be species found in the Rodney Ecological District. Planting to replicate lowland and steep streams with riparian planting to include zones for 1 stream, 2 stream edge, 3 littoral and 4 forest in accordance with Drawings SW-401, SW-402 and SW-403; • Recovery of plants and re-planting is encouraged ; • Provide a bat-friendly corridor by inclusion of puriri and taraire trees; and • Establish a closed canopy cover early.		No requirement for riparian planting.