Reference: Annexure B of third supplementary evidence of Ms A Linzey (01 March 2011)

Compiled Proposed Conditions

01 March 2011

Note: Proposed changes made since lodgement and presented in Evidence in Chief are shown as red underlined, changes proposed in Rebuttal Evidence and Caucusing are shown as **blue bold underlined,** and changes proposed following outcome of Hearing to date shown in **green bold underlined**.

Explanation

The following conditions relate to the construction, operation and maintenance of the Waterview Connection Project (The Project). The Project includes:

1. The motorway extension of SH20 from Maioro Street (New Windsor) to connect with SH16 at the Great North Road Interchange, including two tunnels through the Mt Albert / Avondale; and
2. The upgrading of the Northwestern Motorway (SH16) increasing its capacity (for private vehicles and improved bus lanes), and raising it to improve the resilience of the State highway network.

The Project will take place within the designation boundaries outlined as Notice of Requirement 202 in the Auckland District Plan and as Notice of Requirement NZTA1 in the Waitakere District Plan.

The majority of works of the Project falling within the designated footprint are authorised by the various designations. However, the following key areas of the Project are subject to a further Outline Plan of Works approval:

1. Northern ventilation building and stack (OPW1 – as shown on Figure DC.A)); and
2. Southern ventilation building and stack (OPW2 – as shown on Figure DC.B).

A number of supporting documents have been prepared for the designations and resource consents, including an Assessment of Environmental Effects, a suite of Specialist Technical Reports and a Construction Environmental Management Plan (CEMP). With the exception of the two areas identified for a specific Outline Plan of Works, the detail of these documents is considered sufficient to confirm the effects of the Project and a further Outline Plan of Works is not proposed for these areas.

The CEMP is the key management document to ensure that the commitments given in obtaining approvals (including the conditions of this designation) are carried out during construction and that appropriate environmental management practices are followed. The CEMP will manage and monitor the environmental effects during the Project's construction phase. The CEMP is made up of 15 specific management plans that address activities that have the potential to generate adverse effects over construction (e.g. noise and settlement), and set out how these will be monitored and managed. The construction environmental management framework is shown on Figure CEMP.A of the conditions.

The community will be actively involved and informed on the Project. A Communications Plan is to be developed and a number of community groups established. The community groups will be active throughout the construction and operation (monitoring) phases to provide a forum where concerns can be discussed, information shared and the community can review and provide comment on the detailed design development.

In addition to the designation(s), there are a number of regional consents for the Project, including for works in the coastal marine area (e.g. reclamation, occupation and discharge), the diversion and discharge of surface water, stormwater and groundwater, for disturbance of contaminated sites, for works within watercourses (e.g. reclamation, occupation and discharge), and for land use activities (e.g. earthworks or land disturbance activities). In addition, resource consent (land use) has also been obtained from the Auckland Council under the Auckland City District Plan: Isthmus Section, for an activity on land which is proposed to be created by reclamation (pursuant to section 89(2) of the RMA).

The Waterview Connection Project area has been divided into 9 sector areas. These are shown in Figure A and defined as follows:

Sector 1	That part of the Project that extends from the eastern abutments of the Henderson Creek Bridge to the western abutment of the Whau River Bridge including the Te Atatu Interchange.
Sector 2	That part of the Project that includes work and structures over and within the Whau River and estuary.
Sector 3	That part of the Project that includes the landward (southern) component of the Rosebank Peninsula including Patiki Road and the Rosebank Park Domain.
Sector 4	That part of the Project that requires reclamation including along the Rosebank Peninsula and the Causeway between Rosebank Peninsula and Waterview. This sector includes parts of Traherne Island.
Sector 5	That part of the Project occupied by the SH16/SH20 Interchange from the Waterview Reserve to SH16.
Sector 6	That part of the Project that includes the additional lanes on the existing Northwestern Motorway, between the Great North Road Interchange and St Lukes Interchange (on SH16).
Sector 7	That part of the Project that refers to the 'cut and cover' of tunnel from the northern portal at (Waterview Reserve), crossing beneath Great North Road to connect with the excavated or deep tunnel (Sector 8).
Sector 8	That part of the Project that refers to the section of the Project extending northward from the Alan Wood Reserve (southern portal) beneath 'Avondale Heights' (the 'excavated' or 'deep tunnel' section of the Project).
Sector 9	That part of the Project that refers to the southern tunnel portal in Alan Wood Reserve area (in the vicinity of Range View Road) southward to include the open or surface carriageway and pedestrian / cycleway (and associated mitigation works), through to the bridging of SH20 under Richardson Road and works associated with construction of the Maioro Street Interchange north facing ramps.

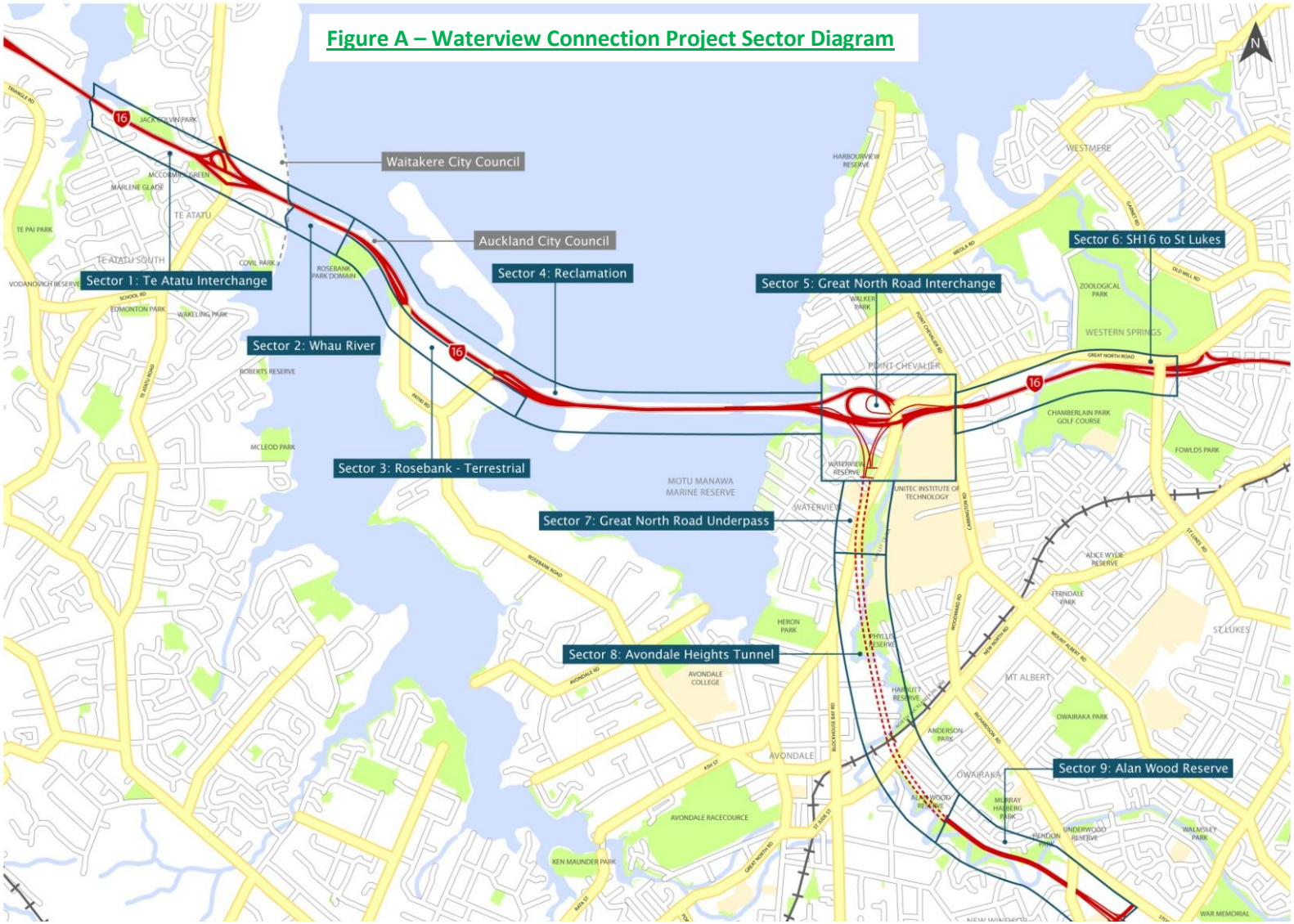


Figure A – Waterview Connection Project Sector Diagram

Table of Contents

Explanation i

Table of Contents iv

Acronyms vi

Proposed General Designation (DC) Conditions 1

Proposed Standard Resource Consent (RC) Conditions 9

Proposed Construction Environmental Management Plan (CEMP) Conditions 10

Proposed Public Information (PI) Conditions 19

Proposed Temporary Traffic (TT) Conditions 24

Proposed Operational Traffic (OT) Conditions 27

Proposed Noise and Vibration (CNV) Conditions – Construction 29

Proposed Noise (ON) Conditions – Operation 35

Proposed Vibration (OV) Conditions – Operation 40

Proposed Air Quality (AQ) Conditions – Construction 41

Proposed Operational Air Quality (OA) Conditions 46

Proposed Landscape and Visual (LV) Conditions 48

Proposed Open Space (OS) Conditions 53

Proposed Social (SO) Conditions 60

Proposed Vegetation (V) Conditions 63

Proposed Avian (A) Conditions 67

Proposed Herpetofauna (H) Conditions 68

Proposed Lighting (L) Conditions 69

Proposed Archaeology (ARCH) Conditions 71

Proposed Ground Settlement (S) Conditions 76

Proposed Groundwater (G) Conditions 84

Proposed Contaminated Land and Contaminated Discharges (CL) Conditions 88

Proposed Earthworks (E) Conditions 90

Proposed Stormwater (SW) Conditions 96

Proposed Streamworks (STW) Conditions 104

Proposed Freshwater (F) Conditions 110

Proposed Coastal (C) Conditions 112

Proposed Marine Ecology (M) Conditions 116

Acronyms

A	Avian Conditions
AEE	Waterview Connection Project Assessment of Environmental Effects Report (August 2010)
ARCH	Archaeology Conditions
ASMP	Archaeological Site Management Plan
AQ	Construction Air Quality Conditions
BPO	Best Practicable Option
C	Coastal Conditions
CAQMP	Construction Air Quality Management Plan
CBCPMP	Concrete Batching and Crushing Plant Management Plan
CEMP	Construction Environmental Management Plan Conditions
CESCP	Contractors Erosion and Sediment Control plan
CL	Contaminated Land and Contaminated Discharges Conditions
CNV	Construction Noise and Vibration Conditions
CNVMP	Construction Noise and Vibration Management Plan
CPTED	Crime Prevention Through Environmental Design
CSMP	Contaminated Soils Management Plan
CTMP	Construction Traffic Management Plan
DC	General Designation Conditions
E	Earthworks Conditions
ECOMP	Ecological Management Plan
EISDCMP	Electrical Infrastructure Site Development and Construction Management Plan
ESCP	Erosion and Sediment Control Plan
F	Freshwater Conditions

Acronyms

G	Groundwater Conditions
GWMP	Groundwater Management Plan
H	Herpetofauna Conditions
HSMP	Hazardous Substances Management Plan
L	Lighting Conditions
LV	Landscape and Visual Conditions
M	Marine Ecology Conditions
NZTA	New Zealand Transport Agency
OA	Operational Air Quality Conditions
OGPA	Open Graded Porous Asphalt
ON	Operational Noise Conditions
OPW	Outline Plan of Works
OS	Open Space Conditions
OT	Operational Traffic Conditions
OV	Operational Vibration Conditions
PI	Public Information Conditions
PPFs	Means only the premises and facilities identified in green, yellow or red in Appendix E, Technical Report G.12 *Assessment of Operational Noise Effects*
PPV	Peak particle velocity
RC	Standard Resource Consent Condition
S	Ground Settlement Conditions
SEMP	Settlement Effects Management Plan
SO	Social Conditions
SSNMP	Site Specific Noise Management Plan

Acronyms

SSTMP	Site Specific Traffic Management Plan
STEM	Standard Tree Evaluation Method
STW	Streamworks Conditions
SW	Stormwater Conditions
UDLF	Urban Design and Landscape Framework (June 2010)
UDL Plans	Urban Design and Landscape Plans
TSMP	Temporary Stormwater Management Plan
TT	Temporary Traffic Conditions
V	Vegetation Conditions

Proposed General Designation (DC) Conditions

DC.1	Except as modified by the conditions below and subject to final design, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Agency (NZTA being the Requiring Authority), the Notice(s) of Requirement and the supporting documents, and supplementary information provided in evidence, as follows: (a) Waterview Connection Project. Assessment of Environmental Effects Report (dated August 2010). Parts A–E; (b) Waterview Connection Project. Assessment of Environmental Effects Report (dated August 2010). Part F: Plans and Drawings, except as provided in evidence (Refer Schedule A); and (c) Waterview Connection Project (SH16/SH20 Assessment of Environmental Effects Report (dated August 2010). Part G: Technical Reports: (i) Technical Report G.1 Assessment of Air Quality Effects (ii) Technical Report G.2 Assessment of Archaeological Effects (iii) Technical Report G.3 Assessment of Avian Ecological Effects (iv) Technical Report G.4 Assessment of Coastal Processes (v) Technical Report G.5 Assessment of Construction Noise Effects (vi) Technical Report G.6 Assessment of Freshwater Ecological Effects (vii) Technical Report G.7 Assessment of Groundwater Effects (viii) Technical Report G.8 Assessment of Herpetofauna Ecological Effects (ix) Technical Report G.9 Assessment of Land and Groundwater Contamination (x) Technical Report G.10 Assessment of Lighting Effects (xi) Technical Report G.11 Assessment of Marine Ecological Effects (xii) Technical Report G.12 Assessment of Operational Noise Effects (xiii) Technical Report G.13 Assessment of Ground Settlement Effects (xiv) Technical Report G.14 Assessment of Social Effects (xv) Technical Report G.15 Assessment of Stormwater and Streamworks Effects (xvi) Technical Report G.16 Assessment of Temporary Traffic Effects (xvii) Technical Report G.17 Assessment of Terrestrial Vegetation Effects (xviii) Technical Report G.18 Assessment of Transport Effects (xix) Technical Report G.19 Assessment of Vibration Effects (xx) Technical Report G.20 Assessment of Visual and Landscape Effects (xxi) Technical Report G.21 Construction Environmental Management Plan (CEMP) (xxii) Technical Report G.22 Erosion and Sediment Control Plan (ESCP) (xxiii) Technical Report G.23 Coastal Works

Proposed General Designation (DC) Conditions

	(xxiv) Technical Report G.24 Geotechnical Interpretive Report (xxv) Technical Report G.25 Traffic Modelling Report (xxvi) Technical Report G.26 Operational Model Validation Report (xxvii) Technical Report G.27 Stormwater Design Philosophy Statement (xxviii) Technical Report G.28 Geotechnical Factual Report – 500 Series (xxix) Technical Report G.29 Geotechnical Factual Report – 700 Series (xxx) Technical Report G.30 Assessment of Associated Sediment and Contaminant Loads (xxxi) Technical Report G.31:Technical Addendum Report (September 2010) (d) PT & Active Mode Transport Routes Existing and Proposed (Refer Schedule A, Row 22) ~~Drawing No.20.1.11-3-D-N-903-100 to 119), Rev D, dated 21.02.11 and 25.02.11dated 27.01.11~~.
DC.2	The period within which this designation shall lapse if not given effect to shall be 10 years from the date on which it is confirmed in accordance with Section 184(1) of the Resource Management Act 1991.
DC.3	The NZTA shall update and finalise ~~submit~~ the relevant C~~c~~onstruction and O~~o~~perational Management Plans required under these conditions ~~(Construction Environmental Management Plan, Construction Traffic Management Plan, Construction Noise and Vibration Management Plan, Construction Air Quality Management Plan, Ecological Management Plan~~ to ensure compliance with the designation conditions imposed by the Board of Inquiry. The relevant Management Plans shall be submitted to the Auckland Council within the timeframes specified in the following conditions. ~~for review at least 20 working days prior to the commencement of works to ensure compliance and consistency with the conditions.~~ No works shall be undertaken until the relevant management plans have been finalised and certified or approved in accordance with the relevant conditions.
DC.4	Any Management Plans submitted to the Auckland Council for approval or certification may be submitted in stages to reflect any proposed staging of the physical works. Plans submitted shall clearly show the integration with adjacent stages and interrelated activities.

Proposed General Designation (DC) Conditions

DC.5	In the event of any dispute or disagreement arising as to any Auckland Council Manager approvals required by these conditions, matters shall be referred in the first instance to the NZTA Regional State Highway Manager and to the Resource Consents Manager, Auckland Council to determine a process of resolution. If a resolution cannot be agreed, then the matter may be referred to an independent appropriately qualified expert, agreeable to both parties, setting out the details of the matter to be referred for determination and the reasons the parties do not agree. The independent appropriately qualified expert shall be appointed within 10 working days of the NZTA or Auckland Council giving notice of their intention to seek expert determination. The expert shall, as soon as possible, issue his or her decision on the matter. In making the decision, the expert shall be entitled to seek further information and hear from the parties as he or she sees fit.
DC.6	Subject to Conditions DC.3 and DC.4, the NZTA shall be exempt from providing an Outline Plan of Works for the Project, as provided for in Section 176A (2)(a) and (b) of the RMA. *Advice note: The Construction and Operational Management Plans are considered sufficient detail in all aspects of the Project, with the exception of proposed works for the Northern and Southern Ventilation Buildings where further details are required.*
DC.7	An Outline Plan of Works shall be prepared for the Northern and Southern Ventilation Buildings and Stacks (OPW1 and OPW2) (in the general location as shown in the Operational Scheme Plans F.2 (Rev G) as shown on Figures DC.A and DC.B) in accordance with Section 176 A of the RMA and Condition DC.8 and DC.9 below and submitted to the Auckland Council ~~and Condition DC.8 and DC.9 below~~.
DC.8	Outline Plan of Works for the Northern Ventilation Buildings and Stack (OPW1) (refer Figure DC.A) OPW1 shall be prepared in accordance with Section 176A of the RMA. The final form of the Northern Ventilation Buildings and Stack shall be in accordance with the design principles of Section B of the Urban Landscape and Design Framework (ULDF June 2010) and the following requirements: (a) Retention of the same building/ structural components underground as per the revised Drawing Set F.8 (refer Schedule A, Row 9); (b) Creation of a fragmented form such that the above-ground building is broken down into small, discrete elements – broadly similar in scale to that of nearby residential and school buildings;

Proposed General Designation (DC) Conditions

DC.8 cont.	(c) Ensure that any required roof linkages do not dominate the form of the building nor make it register visually as a single entity; (d) Development of an architectural profile, detailing and material palette that references the local landscape/ geology/ coastline/ residential area in the design of the above-ground buildings; (e) Maximisation of areas of planted open space between buildings, structures and vehicle movement/ parking areas on site; (f) Maximisation of the quantum of limbed-up, large scale, specimen tree planting (to promote visibility and surveillance (in accordance with ~~high levels of to~~ CPTED principles) between buildings, structures and vehicle movement / parking areas on site; (g) Treatment of the ventilation building and stack as objects of urban sculpture (should the height requirements for the stack be significantly reduced from 25m, this may ~~require~~ include the physical 'subdivision' of the stack into several components that vary in their height and proportions, providing it fulfils its functional requirements); ~~(h) Location of the stack as far away from the adjoining pre-school and primary schools ground as is practicable without compromising the aesthetic value and integrity of Oakley Creek Esplanade Reserve and Waterview Reserve (within the OPW area identified in the Operational Scheme Plans (Rev G));~~ (h) Maintain opportunities for residential development at ~~Development of new residential units on~~ 1145 and 1449 Great North Road at the end of the construction programme; (i) Provision of lighting integrated with the façade design to illuminate the ventilation building and shared pedestrian/ cycle path along Great North Road; (j) The opportunity to maintain a shared pedestrian / cycle path along Great North Road between Oakley Avenue and Herdman Street at a width that does not compromise a planted berm that provides screening for the buildings; (k) Documentation of consultation undertaken with the Waterview (to St Lukes) Community Liaison Group (as established by Condition P1.5) and the Manager, Urban Design Auckland Council, the views and concerns expressed by this consultation; (l) Confirmation that the building height (maximum 6.5m) and above ground area is no greater than the Concept Plan drawings in the updated plan set F.8 (refer Schedule A); and (m) The site configuration should maximise the use of building façades to achieve site security, minimising the necessity for additional fencing. All security fencing is to be set back from the street frontage, maximising transparency and should reflect the residential character of the area.

Proposed General Designation (DC) Conditions

DC.9	Outline Plan of Works for the Southern Ventilation Buildings and Stack (OPW2) (Refer Figure DC.B) OPW2 shall be prepared in accordance with Section 176 (A) of the RMA. The final form of the Southern Ventilation Buildings and Stack shall be in accordance with the design principles of Section B of the Urban Landscape and Design Framework (ULDF June 2010) and the following requirements: (a) Creation of a slim, linear plan arrangement that maximises the separation of the buildings from the houses on Hendon Avenue to the east and the pedestrian / cycle way to the west; (b) Minimisation of the vertical height of the portal buildings and ventilation stack to limit their visual intrusion/ incursion relative to neighbouring residential properties – other than to enhance the visual aesthetic and cohesion of these key elements; Development of an architectural profile, detailing and material palette that is sufficiently varied to avoid the building and vent imparting a monolithic character; (c) Employment of an architectural profile, detailing and material palette that references the local landscape/ geology/ tectonic character of the locality, and which is visually/ aesthetically 'grounded' in the remaining open space of Alan Wood Reserve; (d) Treatment of the portal buildings and ventilation stack as objects of urban sculpture that are integrated with one another; (e) Modulation of the building such that the ~~operational~~ control building is separated from the remainder of the building to allow a pedestrian / cycle cross-connection at or near the portal; (f) Use of the building materials on the portal buildings and stack which are sufficiently robust, varied/ modulated, and treated that they remain adverse to graffiti and vandalism; (g) Maximisation of the quantum of limbed-up large scale specimen trees (to promote visibility and surveillance (in accordance with ~~high levels of~~ CPTED principles)) in the vicinity of the portal buildings, related structures and vehicle movement/ parking areas, so as to reduce the apparent scale of the buildings when viewed from residential properties near Hendon Avenue and Methuen Road; (h) Documentation of consultation with the Owairaka Community Liaison Group (as established by Condition PI.5) and the Manager, Urban Design Auckland Council and the views and concerns expressed by this consultation; (i) Confirmation that the building height (maximum of 7.5m) and above ground area is no greater than the Concept Plan drawings in the updated plan set F.8 (Refer Schedule A, Row 9);

Proposed General Designation (DC) Conditions

DC.9 cont.	(j) So far as practicable ~~any control~~ the operation building should be configured in a manner that occupied spaces are aligned to and overlook walk ways/ cycle ways; (k) The site configuration should maximise the use of CPTED principles for territorial reinforcements ~~building facades~~ to achieve site security, minimising the necessity for additional fencing; (l) If parking areas are secured they should where possible directly abut the buildings. Any fencing should be kept to a minimum; and (m) Consider the potential for a 'green roof' on top of the main ~~portal~~ ventilation building.
~~DC.10~~	~~All works shall be undertaken in accordance with the relevant Management Plans referred to in Conditions DC.3 and DC.4, and the Outline Plan of Works required under Condition DC.6.~~
DC.10	Following completion of construction of the Project, the NZTA shall give notice to Auckland Council in accordance with Section 182 of the RMA for removal of those parts of the designation that are not required for the long term operation, maintenance and mitigation of effects of the State highway (Note: this condition is specific to land no longer required for construction purposes once the Project is completed.)

Figure DC.A – OPW1 Northern Ventilation Buildings and Stack

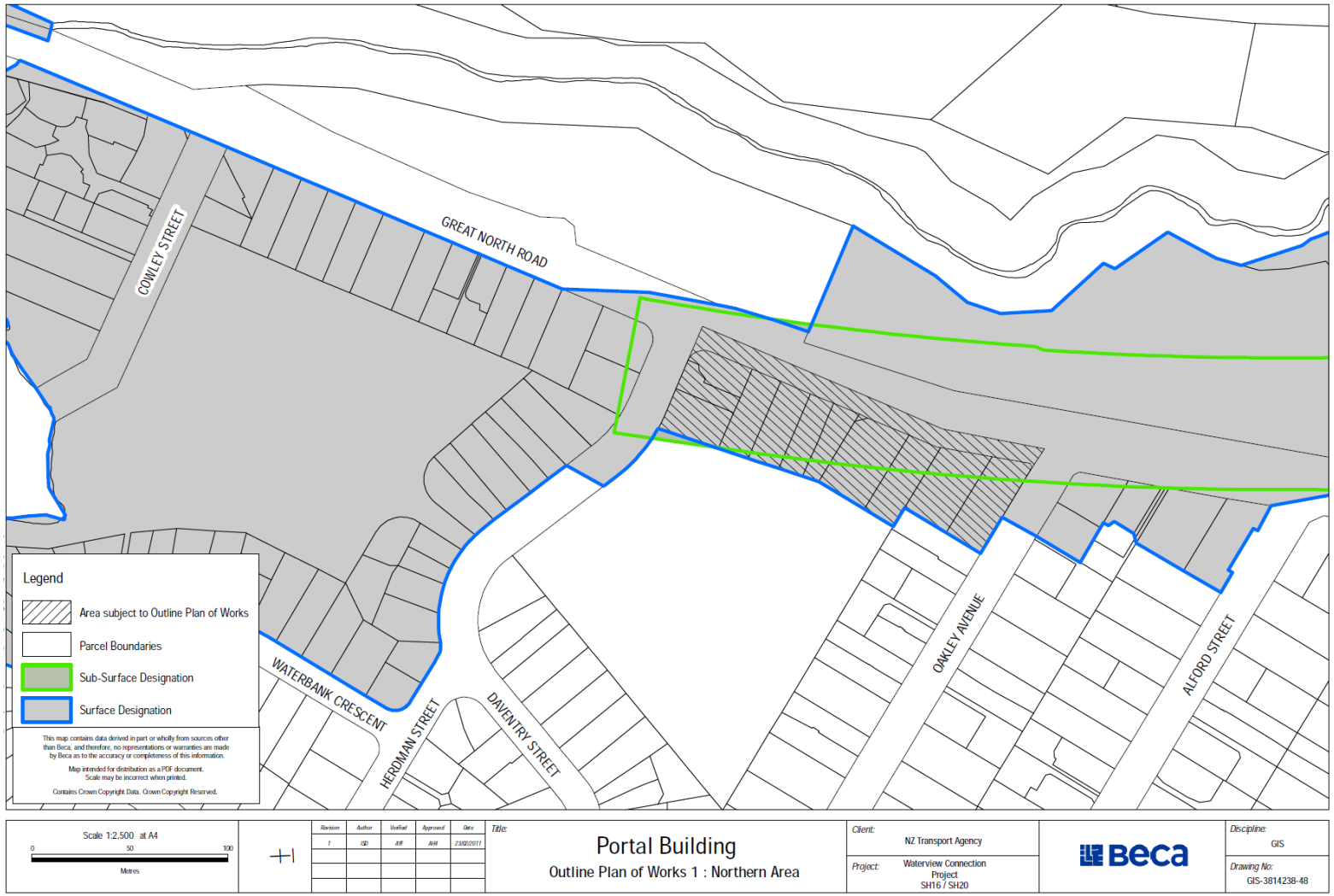
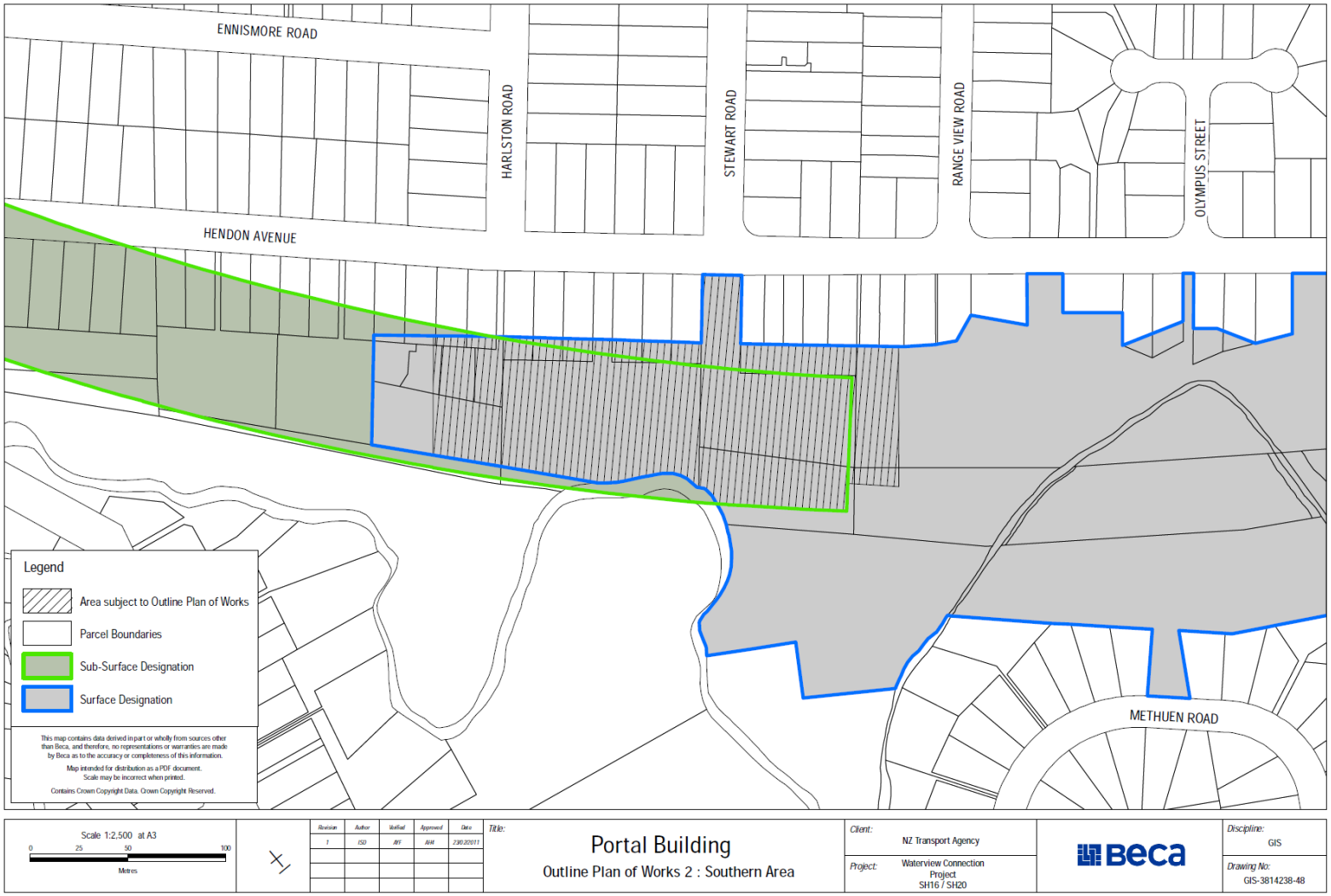


Figure DC.B – OPW2 Southern Ventilation Buildings and Stack



Proposed Standard Resource Consent (RC) Conditions

RC.1	The Conditions of this consent may be reviewed by the Manager, Auckland Council, pursuant to Section 128 of the Resource Management Act 1991 (the Act), by the giving of notice pursuant to Section 129 of the Act, in July 2012 and every year thereafter in order: (a) To deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or (b) To deal with any other adverse effect on the environment on which the exercise of the consent may have an influence.

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.1	The NZTA shall update and finalise the draft Construction Environmental Management Plan (CEMP) submitted with this application to ensure compliance with the [consent and designation] conditions imposed by the Board of Inquiry. The CEMP shall be provided to the Manager, Major Consents, Auckland Council for review at least 20 working days prior to the commencement of works to ensure compliance and consistency with the conditions ~~before construction commences~~. *Advice note: For clarity the CEMP will be updated and finalised in accordance with the conditions. Any amendments will be limited to reflecting the requirements of the conditions, specifying personnel, and completing the Environmental Risk Register.*
CEMP.2	The certification process of the CEMP shall confirm that the CEMP ~~shall~~ includes ~~but not be limited to~~ details of: (c) Staff and contractors' responsibilities; (d) Training requirements for employees, sub-contractors and visitors; (e) Environmental incident and emergency management; (f) Communication and interface procedures (in accordance with the communication plan required under Condition PI.2); (g) Environmental complaints management (including the procedures required under Condition PI.4); (h) Compliance monitoring; (i) Reporting (including detail on the frequency of reporting to the Auckland Council); (j) Environmental auditing; and (k) Corrective action.
~~CEMP.3~~	~~Complaints shall be managed in accordance with the environmental complaints section detailed in the CEMP. A record of any complaints received in relation to the construction activities and the responses made shall be provided on a three monthly basis to the Auckland Council in accordance with PI.4 (f).~~

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.3	The management of key environmental effects associated with the construction phase of the Project ~~shall be~~ is detailed within environmental management plans that are included in the appendices to the CEMP. This suite of management plans as shown on Figure CEMP.A shall comprise ~~shall be~~: (a) Construction Noise and Vibration Management Plan (CNVMP); (b) Construction Air Quality Management Plan (CAQMP); (c) Erosion and Sediment Control Plan (ESCP); (d) Temporary Stormwater Management Plan (TSMP); (e) Ecological Management Plan (ECOMP); (f) Groundwater Management Plan (GWMP); (g) Settlement Effects Management Plan (SEMP); (h) Contaminated Soils Management Plan (CSMP); (i) Hazardous Substances Management Plan (HSMP); (j) Archaeological Site Management Plan (ASMP); (k) Construction Traffic Management Plan (CTMP); (l) Concrete Batching and Crushing Plant Management Plan (CBCPMP)~~; and~~ (m) Electrical Infrastructure Site Development and Construction Management Plan (EISDCMP) (to be prepared in accordance with Condition CEMP.15); (n) Waste Management Plan (to be prepared in accordance with CEMP.10) ; and (o) Temporary Construction Lighting Management Plan (to be prepared in accordance with Condition L.2).
CEMP.4	The CEMP shall be implemented and maintained throughout the entire construction period.
CEMP.5	A copy of the CEMP shall be held on the construction site at all times and be available for inspection on request by the Auckland Council.

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.6	The finalised CEMP shall include specific details on demolition, construction and management of all works associated with the Project. The certification process of the CEMP shall confirm that the CEMP includes details of: ~~, including:~~ (a) Details of the site or Project manager and the ~~construction~~ community liaison person, including their contact details (phone, facsimile, postal address, email address); (b) The location of large notice boards that clearly identify the NZTA and the Project name, together with the name, telephone, email address and address for service of the site or Project manager and the ~~construction~~ community liaison person; (c) An outline construction programme of the work indicating in particular likely time periods for road closures and anticipated traffic diversion effects; (d) The hours of work, which should reflect the need to ensure that residents enjoy reasonable freedom from noisy or intrusive construction activity in their neighbourhood at night, on Sundays and during public holidays; (e) Measures to be adopted to maintain the land affected by the works in a tidy condition in terms of disposal/ storage of rubbish, storage and unloading of building materials and similar construction activities; (f) Location of worker's offices and conveniences (e.g. portaloos); (g) Procedures of controlling sediment run-off, dust and the removal of soil, debris and demolition and construction materials from public roads or places. Dust mitigation measures should include use of water sprays to control dust nuisance on dry or windy days; (h) Methods to stabilise ingress and egress points to construction sites, to the standard required by ARC Technical Publication 90 (Nov 2007); (i) Procedures for ensuring that residents in the immediate vicinity of construction areas are given notice of the commencement of construction activities and are informed about the expected duration of the works, including potentially through the ~~construction~~ community liaison person; (j) Procedures to be followed to ensure that those working in the vicinity of identified heritage and ecological features are aware of the heritage or ecological values of these features and the steps which need to be taken to meet the conditions applying to work on the site; (k) Means of ensuring the safety of the general public;

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.6 cont	(l) Procedures for the ~~construction~~ community liaison person to receive and respond to complaints about construction activities, including dust and odour from the works; (m) Methods of mitigating the local and network wide effects of construction of individual elements of the Project, including measures to ensure that parking of staff vehicles on surrounding streets is restricted; ~~(n) The layout of the 12 Construction Yards, including associated buildings, fencing and site access, in accordance with Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112. The layout drawings shall, as far as practicable, incorporate the following:~~ ~~(i) The main access to the construction yards to be located as far as practicable from residential dwellings, in the locations shown on Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112;~~ ~~(ii) Noisy construction activities to be located as far as practicable, and preferably no less than 100m, from residential dwellings;~~ ~~(iii) Construction of temporary boundary/ security fences to be undertaken in a manner which minimises impacts on existing trees;~~ ~~(iv) Temporary acoustic fences and visual barriers;~~ ~~(v) Temporary buildings greater than 8 metres in height to be located in a position which minimises visual impact on adjacent residential dwellings.~~ (n) All temporary boundary/ security fences shall be maintained in good order, with any graffiti removed as soon as possible; (o) A STEM assessment of the Amenity Trees in Schedule E.7 of the AEE to confirm the final Amenity Trees as identified by the Project Arborist. (p) ~~Methods~~ The process to minimise ~~tree~~ removal of Amenity Trees and maximise the protection of those ~~protect trees~~ retained. ~~identified in Schedule E.7 of the Waterview Connection Assessment of Environmental Effects.~~

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.7	The layout of the 12 Construction Yards, including associated buildings, fencing and site access shall be developed in accordance with Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112 (Refer Schedule A). The layout drawings shall be provided to the Auckland Council at least 20 working days prior to their development, for review and confirmation that the final layout of the construction yards is in accordance with the conditions. The layout drawings shall~~, as far as practicable,~~ incorporate the following: (a) The main access to the construction yards to be located as far as practicable from residential dwellings, taking into account site and public safety and environmental constraints, in the locations shown on Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112 (Refer Schedule A); (b) Noisy construction activities to be located as far as practicable, and preferably no less than 100m, from residential dwellings; (c) Construction of temporary boundary/ security fences to be undertaken in a manner which minimises impacts on existing trees; (d) Temporary acoustic fences and visual barriers; and (e) Temporary buildings greater than 8 metres in height to be located in a position which minimises visual impact on adjacent residential dwellings.
CEMP.8	All storage of material and equipment associated with the construction works shall take place within the boundaries of the designation.
CEMP.9	Temporary protection shall be installed to prevent vehicles damaging drains, footpaths, berms, kerbs, vehicle crossings and the roads during the site preparation and construction phase of the Project. Any damage to the drains, footpaths, berms, kerbs, vehicle crossings and the road attributable to any vehicle associated with construction activities shall be repaired to the same or similar standards as existed prior to such damage at no cost to the Auckland Council.

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.10	The NZTA shall finalise and implement ~~a~~ the Hazardous Substances Management Plan (HSMP), through the CEMP, submitted with this application, prior to works commencing on site. The certification process of the CEMP shall confirm that the HSMP ~~shall~~ clearly identifies the requirements for proper storage, handling, transport and disposal of hazardous substances during the construction phase of the Project.
CEMP.11	The NZTA shall develop and implement a Waste Management Plan in ~~general~~ accordance with the waste management principles, controls and methods set out in the CEMP. The Plan shall be provided to the Auckland Council and be implemented throughout the entire construction period.
CEMP.12	The CEMP shall be reviewed by the NZTA at least annually or as a result of a material change to the Project. The review shall take into consideration: (a) Compliance with designation and consent conditions; (b) Any changes to construction methods; (c) Key changes to roles and responsibilities within the Project; (d) Changes in industry best practice standards; (e) Changes in legal or other requirements; (f) Results of inspections, monitoring, incidents, corrective actions, internal or external assessments; and (g) Public complaints. A summary of the review process undertaken shall be kept by the NZTA and made available to the Auckland Council upon request.
CEMP.13	Following the review process (as described in Condition CEMP.12), the CEMP may require updating. Any material changes proposed to the CEMP (such as changes to the complaints procedure or changes to the construction methodology) shall be submitted for the approval of the Auckland Council at least 10 working days prior to the proposed changes taking effect. *Advice note: For clarity, changes to personnel and contact schedules do not constitute a material change.*

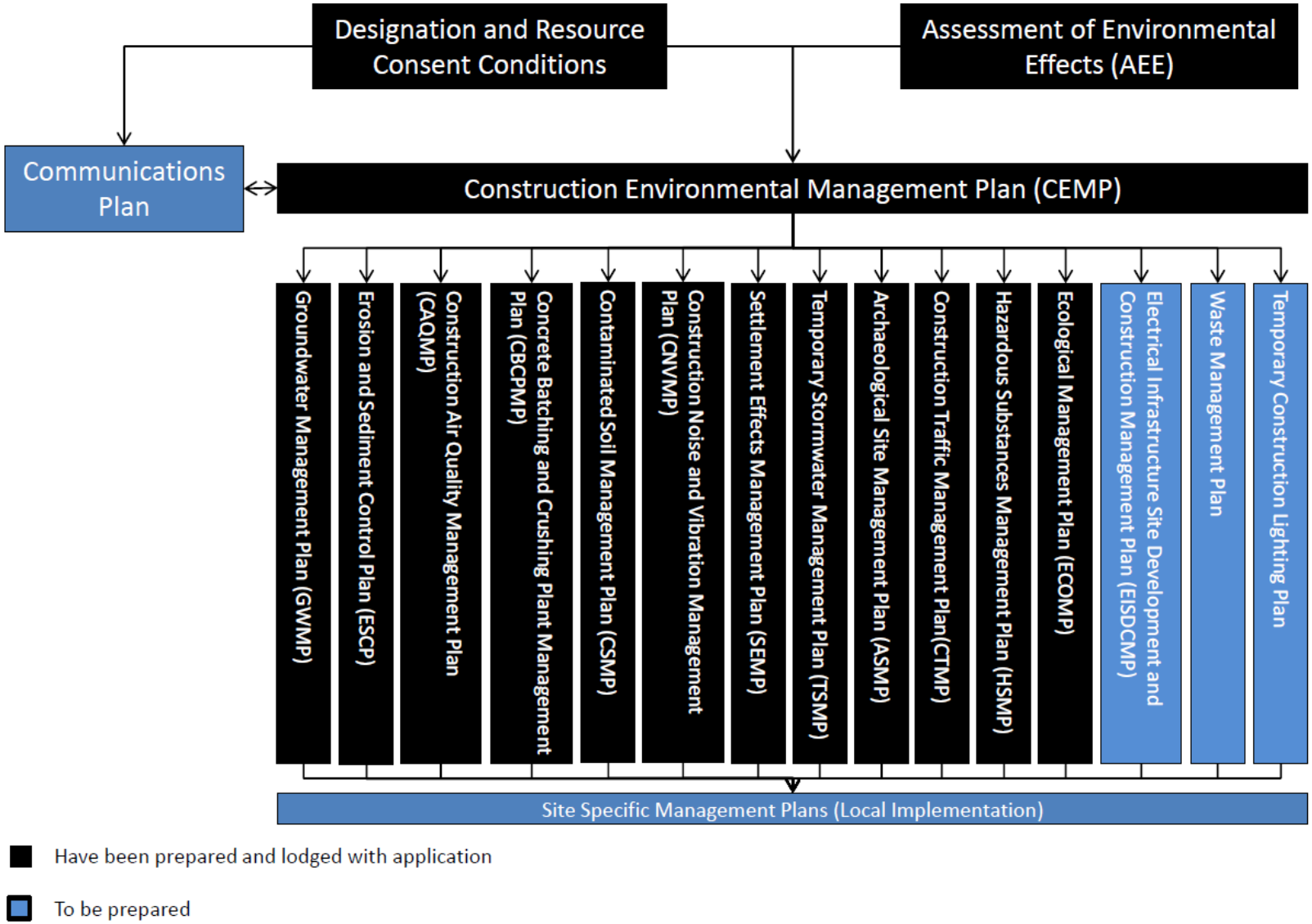
Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.14	In the event of any dispute or disagreement arising as to any Auckland Council Manager approvals required by these conditions, matters shall be referred in the first instance to the NZTA State Highway Regional Manager and to the Resource Consents Manager, Auckland Council to determine a process of resolution. If a resolution cannot be agreed, then the matter may be referred to an independent appropriately qualified expert, agreeable to both parties, setting out the details of the matter to be referred for determination and the reasons the parties do not agree. The independent appropriately qualified expert shall be appointed within 10 working days of NZTA or Auckland Council giving notice of their intention to seek expert determination. The expert shall, as soon as possible, issue his or her decision on the matter. In making the decision, the expert shall be entitled to seek further information and hear from the parties as he or she sees fit.

Proposed Construction Environmental Management Plan (CEMP) Conditions

CEMP.15	The CEMP shall include, as an appendix, an Electrical Infrastructure Site Development and Construction Management Plan (EISDCMP). **The EISDCMP shall be provided to the Auckland Council for review and certification that it ~~the Plan is to~~** includes: (a) Methods and measures: (i) To ensure that the existing high voltage infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times, during and after construction activities. (ii) To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear, to the overhead transmission lines (iii) To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to the transmission lines, including support structures. (iv) To ensure that changes to the drainage patterns and runoff characteristics do not result in adverse effects from stormwater on the foundations for any high voltage transmission line support structure. (b) Sufficient detail to confirm that new planting and maintenance of vegetation will comply with the New Zealand Electricity (Hazard from Trees) Regulations 2003, including, but not limited to, the provisions of Schedule (Growth Limit Zones) to those Regulations. (c) Sufficient detail to confirm that the works will comply with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP 34:2001), including, but not limited to, the provisions of: (i) Clause 2.2 with respect to excavations near overhead support structures; (ii) Clause 2.4 with respect to buildings near overhead support structures; (iii) Section 3 with respect to minimum separation between buildings and conductors; (iv) Section 5 with respect to minimum safe distances for the operation of mobile plant; and, (v) Table 4 with respect to minimum safe separation distances between the ground and the overhead conductors. *Advice note: With respect to clause (c), specific consideration must be given to the height and location of temporary structures (such as Project offices and other construction site facilities) and permanent structures (such as lighting poles, signage, gantries and acoustic barriers).*

Figure CEMP.A – Construction Environmental Management Framework



Proposed Public Information (PI) Conditions

PI.1.	A ~~construction~~ community liaison person shall be appointed by the NZTA for the duration of the construction phase of the Project to be the main and readily accessible point of contact for persons affected by the Project. The liaison person's name and contact details shall be made available in the CEMP and on site signage by the NZTA. This person must be reasonably available for ongoing consultation on all matters of concern to affected parties arising from the Project.
PI.2.	The NZTA shall prepare and implement ~~through the CEMP~~, a Communications Plan that sets out procedures detailing how the public, Ministry of Social Development (including Housing New Zealand Corporation) and organisations representing the particular demographic characteristics of the community (including but not limited to Primary Health Organisations, general practitioners, youth, education organisations, aged care groups and groups representing ethnic and migrant communities) will be communicated with throughout the construction and monitoring periods (as defined by the designation and consent conditions). In preparing the Communications Plan, the NZTA will liaise with Auckland Council to access its community liaison databases. The Communications Plan will includes details of: (a) The site or Project manager and the ~~construction~~ community liaison person, including their contact details (phone, facsimile, postal address, email address); (b) In accordance with these Conditions, the database of the key construction activities and monitoring requirements that are the subject of the Communications Plan; (c) The database of stakeholders and residents who will be communicated with; (d) Communication methods, an assessment of how these methods reach the different audience / stakeholder groups (including those methods set out in Condition CEMP.6), and detail on when each of these methods will be used (e.g. regular communication or event specific methods); (e) Any stakeholder specific communication plans required; and (f) Monitoring and review procedures for the Communications Plan. The Communications Plan shall be written in accordance with the external communication procedures set out in the CEMP and provided at least 20 working days prior to construction commencing, to the Auckland Council and the Community Liaison Group(s) established by Condition PI.5. The structure of the communication groups set out in these conditions is attached as Figure PI.A.

Proposed Public Information (PI) Conditions

PI.3.	At least ~~three weeks~~ 15 working days prior to the commencement of construction, and at ~~three weekly~~ 15 working day intervals thereafter, or as required depending on the scale of works and effects on the community, advertisements will be placed in the relevant local newspapers and community noticeboards (as identified in Condition CEMP.6(b)) detailing the nature of the forthcoming works, the location of the forthcoming works and hours of operation. All advertisements will include reference to a 24 hour toll free complaints telephone number. Where relevant, advertisements will also include but not be limited to details of: (a) Any traffic disruptions or controls or changes to property access, pedestrian/ cycle routes and bus stops; and (b) Any other construction activities, including night time works, blasting, structure borne noise, as ~~highlighted~~ identified in the conditions.
PI.4.	The NZTA shall manage, investigate and resolve (as appropriate) all complaints for the duration of the construction works in accordance with the environmental complaints section of the CEMP. The implementation strategy for complaints includes: (a) A 24 hour toll free telephone number and email address, which shall be provided to all potentially affected residents and businesses. The number shall be available and answered at all times during the entire duration of the works for the receipt and management of any complaints. A sign containing the contact details shall be located at each site specific work activity; (b) The NZTA shall maintain a record of all complaints made to this number, email or any site office, including the full details of the complainant and the nature of the complaint; (c) Upon receiving a complaint, within 10 days of complaint receipt, a formal written response will be provided to the complainant and Auckland Council; (d) The NZTA shall undertake corrective action where necessary to resolve any problem identified. All action taken and relevant information shall be documented. For the avoidance of doubt, 'where necessary' refers to where the works are not being carried out in accordance with conditions of this designation; (e) Where issues and complaints about effects cannot be resolved through the CEMP complaints management process, ~~then~~ a meeting shall be held between the NZTA, the complainant and the Auckland Council representative(s) to discuss the complaint and ways in which the issue may be resolved. If parties cannot agree on a resolution, ~~then~~ an independent qualified mediator will be appointed, agreeable to all parties and at the shared cost of all parties, to undertake mediation of the dispute or concerns; and

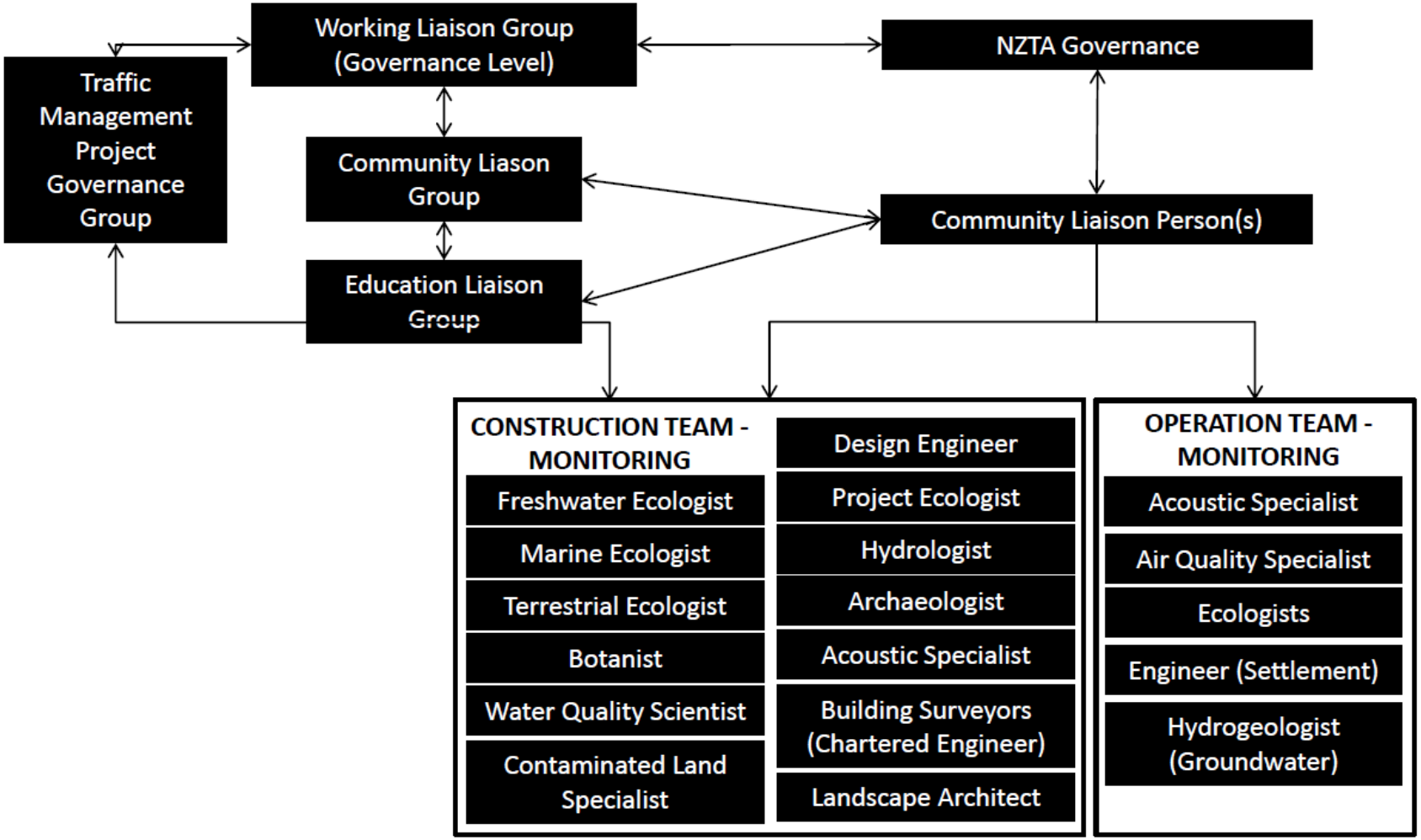
Proposed Public Information (PI) Conditions

PI.4 cont	(f) All information collected in Conditions PI.4 (b), (c) and (d) shall be detailed in a Construction Compliance Report (including the means by which the complaint was addressed, whether resolution was reached and how the response was carried out) prepared by the NZTA. This Report shall be submitted to the Auckland Council on a quarterly basis commencing at the beginning of the works and for the entire duration of construction.
PI.5.	The NZTA shall establish Community Liaison Group(s) at least ~~2~~ two months prior to construction commencing in each of the following key construction areas: (a) Te Atatu (including the SH16 Causeway) (b) Waterview (including works to St Lukes on SH16 and on the Waterview Estuary and Causeway Bridges) (c) Owairaka and hold regular meetings (at least three monthly) throughout the construction period and up to 24 months following construction completion relevant to these areas (or less if the members of the Group agree), so that ongoing monitoring information can continue to be disseminated ~~relevant to these areas~~. The Community Liaison Group(s) shall be open to all interested parties within the Project area including, but not limited to the following groups: (a) Auckland Council and Auckland Transport ~~Community Boards~~; (b) Educational facilities within the Project area (including schools, kindergartens, childcare facilities and Unitec Institute of Technology); (c) Relevant community/ environmental groups (including but not limited to Friends of Oakley Creek and representatives from those organisations identified in the Communications Plan (as required by Condition PI.2) and ~~representatives of~~ local residents; (d) Department of Conservation; (e) Local ~~Community~~ Boards ~~Auckland Council;~~ (f) Relevant Iwi groups; ~~and~~ (g) Public transport providers; and (h) Housing New Zealand Corporation. ~~The purpose of the Community Liaison Group is to provide a regular forum through~~

Proposed Public Information (PI) Conditions

	~~which information about the Project can be provided to the community, and an opportunity for concerns or issues to be raised~~ *Advice note: The purpose of the Community Liaison Group(s) is to provide a regular forum through which information about the Project can be provided to the community, and an opportunity for concerns or issues to be raised.*
PI.6.	~~The purpose of the Community Liaison Group(s) is to provide a regular forum through which information about the Project can be provided to the community, and an opportunity for concerns or issues to be raised.~~ The Community Liaison Group(s) shall be provided ~~an~~ opportunities~~y~~ to review and comment on the following (amongst other things): (a) The Open Space ~~and~~ Restoration Plans (as required by Conditions OS.1 and OS.2); (b) Finalisation and amendment to Urban Design and Landscape Plans (as required by Condition LV.1); (c) The Outline Plan of Works detailing ~~Finalisation of~~ designs for the northern and southern ventilation buildings and stacks (as required by Conditions DC.8 and DC.9); ~~and~~ (d) The Oakley Inlet Heritage Plan (as required by Conditions OS.4(b)(i) and ARCH.6); (e) The detail of the Oakley Creek restoration (as required by Condition ~~V.17~~ STW.20); and (f) Publicly available results of environmental monitoring as required by the designation and/or these Consents (e.g. air quality monitoring).

Figure PI.A – Structure of Communication Groups Identified by these Conditions



Proposed Temporary Traffic (TT) Conditions

TT.1	The NZTA shall update and finalise the Construction Traffic Management Plan (CTMP) submitted with this application, in accordance with these conditions, and implement it through the CEMP. In finalising the CTMP, the NZTA shall: (a) ~~Use advanced traffic~~ Provide simulation modelling demonstrations ~~tools~~ to better understand the effects of construction of the Project on the affected road network; and (b) ~~As far as practicable,~~ Include measures to avoid road closures and ~~also~~ restrictions of vehicle, bus, cycle and pedestrian movements, as far as practicable, noting the particular vulnerabilities and sensitivities of pedestrian diversions and restricted conditions.
TT.2	The CTMP shall require the development of Site Specific Traffic Management Plans (SSTMPs) and their approval by the Traffic Management Project Governance Group (as defined by the CTMP)~~Manager, Auckland Transport,~~ for each construction activity that may affect traffic or transportation infrastructure and services. The SSTMPs shall be provided to the Traffic Management Coordinator(s) for the relevant Road Controlling Authority at least 10 working days prior to each construction activity.
TT.3	Each SSTMP shall describe the measures that will be undertaken to ~~address as far as practicable methods of~~ avoid~~ing~~, remedy~~ing~~ or mitigate~~ing~~ the local and network wide effects of construction of the Project~~, as far as practicable~~. In particular, the SSTMP shall include the following matters: (a) Traffic management measures to address and maintain, traffic capacity, including bus services, at ~~traffic~~ peak traffic periods ~~hours~~ during weekdays (6:00 to 9:00 and 16:00 to 19:00) and peak traffic periods at weekends (including ~~in~~ Te Atatu Road, Great North Road and Richardson Road); (b) Methods to manage the effects of traffic during construction including the requirement to detour or divert traffic. These methods shall seek to avoid, remedy or mitigate effects on access to and from businesses and other organisations in the area; (c) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses; (d) Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the project (e.g. intersections/ overbridges) and the use of staging to allow sections of the Project to be opened to the traffic while other sections are still under construction;

Proposed Temporary Traffic (TT) Conditions

TT.3 cont.	(e) Methods to manage the effects of the delivery of construction material, plant and machinery (including cranes and oversized trucks) during construction; (f) Any routes where construction traffic movements will be restricted (either for particular times for construction periods); (g) Measures to maintain existing vehicle access, as far as practicable, or where the existing property access is to be removed or becomes unsafe as a result of the construction works, measures to provide alternative access arrangements in consultation with the Auckland Council and the affected landowner; and (h) Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, where practicable (e.g. unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works), and except for the requirements set out in Condition OS.12. Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours
TT.4	The SSTMPs shall include traffic management measures developed in consultation with the Auckland Transport ~~Authority (ATA)~~, Bus and Coach Association and the Auckland Council, to address and maintain, where practicable~~, traffic capacity~~ existing levels of service for buses particularly at peak ~~hours~~ periods (6:00 to 9:00 and 16:00 to 19:00) on weekdays. ~~to provide for passenger transport services on the road network.~~
TT.5	The NZTA shall consult with the Traffic Operations Manager, Auckland Transport ~~Auckland Council~~ with regard to the most appropriate means for providing access on Council roads within and adjacent to the designation. The NZTA shall also coordinate and consult directly with the proponents of any major construction occurring concurrently with, and in the vicinity of the Project.
TT.6	The SSTMPs shall include measures developed in consultation with Auckland Transport to, as far as practicable, enable ~~NZTA shall maintain, as far as practicable,~~ continued public walking and cycling passage along the existing Northwestern Cycleway (between Te Atatu Interchange and St Lukes Interchange) and along Great North Road and the public walkway along Oakley Creek ~~walkway~~.
TT.7	The NZTA shall undertake construction works so as to avoid significant long duration impacts or the full closure of Te Atatu Road for all road users heading to or from ~~residents on~~ the Te Atatu Peninsula.

Proposed Temporary Traffic (TT) Conditions

TT.8	The NZTA shall restrict construction truck movements during peak hours (6:00 to 9:00 and 1~~5~~6:00 to 1~~8~~9:00) on weekdays and during the peak periods at the weekends to avoid the following: (a) Te Atatu Road Interchange, during both morning and afternoon peak hours (b) Great North Road Interchange, city bound during the morning peak hours (c) Great North Road Interchange, west bound and onto Great North road during the afternoon peak. Construction truck movements during these hours shall only be allowed under exceptional circumstances agreed in advance with the Traffic Management Project Governance Group. ~~Auckland Council.~~
TT.9	The NZTA shall maintain at least the existing active traffic lane ~~land~~ configuration capacity on SH16, at the Te Atatu Interchange area, Te Atatu Road, Richardson Road and on Great North Road during peak periods being 6:00 to 9:00 and 16:00 to 19:00 on weekdays and during the peak periods on weekends, for the duration of the temporary construction programme.
TT.10	The NZTA shall monitor the impact of construction traffic in terms of traffic speeds and volumes on SH16, Great North Road, Te Atatu Road and Richardson Road throughout the construction period to confirm the expected traffic effects as set out in the *Temporary Traffic Assessment* (Technical Report G.16) submitted with this application. (a) This monitoring will be undertaken on a daily, weekly and monthly basis ~~[monthly / weekly / daily]~~; and (b) Monitoring results will be made available to the Traffic Operations Manager, Auckland Transport ~~Auckland Council~~ on request.
TT.11	If monitoring undertaken pursuant to Condition TT.~~9~~10 indicates that traffic volumes or traffic conditions are significantly different from those expected, the SSTMPs will be reviewed and as appropriate amended to the satisfaction of ~~the [Auckland Council]~~ the Traffic Management Project Governance Group.

Proposed Operational Traffic (OT) Conditions

	Integration with Local Road Network
OT.1	The NZTA shall prepare in collaboration ~~consultation~~ with Auckland ~~t~~Transport ~~agencies~~ a Network Integration Plan (NIP) to demonstrate how the Project integrates with the existing local road network and with future improvements (identified in the Western Ring Route (Northwest) Network Plan) planned by the Auckland Council. The NIP shall include details of ~~completed~~ proposed physical works at the interface between the State highway and the local road network, and shall address such matters as pedestrian/ cycle ways, lane configuration, traffic signal co-ordination, signage and provision for buses In addition, the NIP will consider and identify: (a) The commitment of the NZTA ~~Opportunities~~ to progress bus priority measures ~~and a pedestrian/ cycle way~~ on Great North Road ~~between Oakley Avenue and the Great North Road Interchange (northbound) and to the existing pedestrian/cycle bridge over Great North Road (~~where these can be achieved in the ~~existing~~ final Project designation~~)~~, subject to the agreement with Auckland Transport. (b) The commitment of the NZTA ~~Opportunities~~ to provide a 2m footpath on Richardson Road Bridge, subject to confirming appropriate bus stop locations with Auckland Transport; ~~and~~ (c) Integration of the works proposed on Te Atatu Road to appropriately transition between the Waterview Connection Project and any projects being progressed by Auckland Transport; (d) Opportunities to review traffic signal timings at the Te Atatu Interchange with a view to minimising delays to all users, including cyclists on the SH16 cycleway; and (e) The commitment of the NZTA to provide for ~~Provision of~~ cycle "aspects" (cycle signal lights) at the Great North Road Interchange. ~~The NIP, for either the Project or relevant Project stage, shall be submitted for review to the Manager, Auckland Transport[Auckland Council].~~

Proposed Operational Traffic (OT) Conditions

	Tunnel Traffic Operation ~~Management~~ Plan
OT.2	The NZTA shall prepare a Tunnel Traffic Operation ~~Management~~ Plan in consultation with the ~~[Auckland Council]~~ Auckland Transport and Auckland Council. The plan shall include, but not be limited to: (a) Procedures for maintenance requirements. (b) Procedures for managing traffic to avoid or minimise potential congestion within the tunnel, particularly during peak periods. (c) Procedures for the management of traffic during incidents. d) Procedures for the operation of tunnel fans and the management of portal emissions. The Tunnel Traffic Operation Plan shall be completed within 3 months of practical completion of SH20 and provided to Auckland Transport and Auckland Council (in respect of Condition OT.2(c)). *Advice note: The operation and maintenance of the air quality monitoring equipment inside the tunnel shall follow manufacturer's recommendations.*

Proposed Noise and Vibration (CNV) Conditions – Construction

CNV.1	The NZTA shall finalise and implement through the CEMP, ~~and maintain~~ a Construction Noise and Vibration Management Plan (CNVMP) throughout the entire construction period of the Project. The CNVMP shall describe the measures adopted to, as far as practicable, meet: (a) the noise criteria set out in Conditions CNV.2 and 3 below; and (b) the vibration criteria set out in Condition CNV.~~3~~4 below. The CNVMP shall be provided to the Auckland Council at least 20 working days prior to construction activities being undertaken for review and certification that the CNVMP , as a minimum, addresses the following: (i) Construction noise and vibration criteria (Conditions CNV.2, CNV.3, and CNV.4); (ii) Hours of operation, including times and days when noisy and/or vibration inducing construction activities would occur; (iii) Machinery and equipment to be used; (iv) Vibration testing of equipment to confirm safe distances to buildings prior to construction; (v) Preparation of building condition surveys of critical dwellings prior to, during and after completion of construction works; (vi) Roles and responsibilities of personnel on site; (vii) Construction operator training procedures; (viii) Methods for monitoring and reporting on construction noise and vibration; (ix) A hierarchy of mitigation options that will be assessed for the Project noise mitigation, ~~Mitigation options,~~ including alternative strategies where full compliance with the relevant noise and/or vibration criteria cannot be achieved; (x) Management schedules containing site specific information; (xi) Measures for liaising with and notifying potentially affected receivers of proposed construction activities and the potential for noise and vibration effects, specifically: • PPFs located within 35 metres of underground excavation works along the tunnel alignment shall receive prior notification no greater than 7 days (and not less than 24 hours) prior to the commencement of works. • Methods for ensuring affected residents are notified of scheduled night-time works (i.e. any works during the hours of 20:00 to 06:30) at least 5 days prior to the commencement of any such work. • Maps showing PPFs to be notified shall be included within the CNVMP. (xii) Methods for receiving and handling complaints about construction noise and vibration; ~~and~~

Proposed Noise and Vibration (CNV) Conditions – Construction

(xiii) Measures for preventing the occurrence of rogue fly rock, including management of charge weights and face loading procedures, stemming of charge holes and profiling of the face to maintain minimum burden (face cover);

(xiv) Investigations of the practicability of implementing Building Modification mitigation, as required in accordance with Conditions ON.6 and ON.11 , prior to commencement of construction within 100m of the relevant PPFs; and

(xv) Site Specific Noise Management Plan (SSNMP) templates and certification process for Auckland Council (in accordance with Condition CNVMP.12) to confirm process of SSNMP review of noise mitigation options.

CNV.2 Construction noise (excluding noise from blasting Monday to Saturday inclusive) shall be measured and assessed in accordance with NZS 6803:1999 "Acoustics – Construction Noise" and shall, as far as practicable, comply with the following criteria:

Note: In Condition CNV.2 (T) means a duration between 15 minutes and 60 minutes, in accordance with NZS6803:1999.

(a) Project Construction Noise Criteria: Residential Receivers

Time of week	Time period	Project Construction Noise Criteria (Long Term Construction) dB		
		Sectors 1 to 7	Sectors 8 and 9	All Sectors
		L_{Aeq}~~(10 to 60 min)~~(T)	L_{Aeq}~~(10 to 60 min)~~(T)	L_{AFmax}
Monday – Saturday	0630–0730	60	45	75
	0730–1800	70	70	85
	1800–2000	65	65	80
	2000–0630	60	45	75
Sundays and Public Holidays	0630–0730	45	45	75
	0730–1800	60	45	85
	1800–2000	45	45	75
	2000–0630	45	45	75

CNV.2 cont.

(b) Project Construction Noise Criteria: Commercial and Industrial Receivers

Time period	Project Construction Noise Criteria (Long Term Construction) dB
	L_{Aeq}~~(10 to 60 min)~~(T)
0730-1800	70
1800-0730	75

(c) Project Construction Noise Criteria: Internal Structure-borne Noise from tunnelling for Residential Receivers

Time period	Project Construction Noise Criteria Inside	
0600-2200 ~~0730-1800~~	35 dB L_{Aeq}~~(16hr)~~(T)	All habitable rooms
2200-0600 ~~1800-0730~~	30 dB L_{Aeq}~~(16hr)(8hr)~~(T)	Bedrooms

(d) Project Construction Noise Criteria: Internal noise for Licensed Educational Facilities

Time period (School Days)	Project Construction Noise Criteria Inside	
~~0900 – 1500~~ Teaching Hours	45 dB L_{Aeq}~~(6hr)~~ (T) or existing, whichever is the higher	Classrooms, library, offices, teaching, laboratories, manual arts, workshops
~~0900 – 1500~~ Teaching Hours	40 dB L_{Aeq}~~(6hr)~~ (T) or existing, whichever is the higher	School hall, lecture theatres

Note: In Condition CNV2(d) "Teaching hours" means:

Primary schools and Kindergartens: 9am to 3pm

Unitec: 8am to 9pm

CNV.3 Project Construction Noise Criteria: Airblast (excluding Sundays)

Category	Type of Blasting Operations	Peak Sound Pressure Level (L_{Zpeak} dB)
Human Comfort Limits		
Sensitive Site	Operations lasting longer than 12 months or more than 20 Blasts	**115 dB** for 95% blasts per year. **120 d**B maximum unless agreement is reached with occupier that a higher limit may apply
Sensitive Site	Operations lasting less than 12 months or less than 20 Blasts	**120 dB** for 95% blasts per year. **125 dB** maximum unless agreement is reached with occupier that a higher limit may apply
Occupied non-sensitive sites such as factories and commercial premises	All blasting	**125 dB** maximum unless agreement is reached with the occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications of levels that can be shown to adversely affect the equipment operation
Damage Control Limits		
Structures that include masonry, plaster and plasterboard in their construction and also unoccupied structures of reinforced concrete or steel construction	All Blasting	**133 dB** unless agreement is reached with owner that a higher limit may apply.
Service structures such as pipelines, powerlines and cables located above ground	All Blasting	Limit to be determined by structural design methodology

CNV.4	Construction vibration received by any building shall be measured and assessed in accordance with the German Standard DIN 4150-3:1999 "Structural vibration - Part 3: Effects of vibration on structures", and shall, as far as practicable, comply with the criteria set out ~~in that Standard~~ as follows:

Type of structure	Short-term vibration				Long-term vibration
	PPV at the foundation at a frequency of			PPV at horizontal plane of highest floor (mm/s)	PPV at horizontal plane of highest floor (mm/s)
	1 - 10Hz (mm/s)	1 - 50 Hz (mm/s)	50 - 100 Hz (mm/s)		
Commercial/Industrial	20	20 - 40	40 - 50	40	10
Residential/School	5	5 - 15	15 - 20	15	5
Historic or sensitive structures	3	3 - 8	8 - 10	8	2.5

CNV.5	Notwithstanding Condition CNV.3 above, (a) Blasting activities shall be conducted so that 95% of the blasts undertaken (measured over any twenty blasts on the foundation of any building outside the designation boundary) shall produce peak particle velocities not exceeding 5mm/s and 100% of the blasts undertaken shall produce peak particle velocities not exceeding 10mm/s irrespective of the frequency of the blast measured. (b) Construction activities, which occur within Sectors 1, 6, 8 and 9 ~~and~~, which are identified in Technical Report no. G.19 Assessment of Vibration Effects, as being at a 'High Risk' of exceeding the DIN 4150-3:1999 criteria (being excavation, piling, compaction and drilling) shall be conducted so that 95% of the activities undertaken (measured over at least 20 representative samples of the relevant activity on any residential building) shall produce peak particle velocities not exceeding the relevant criterion in DIN 4150-3:1999 and 100% of the activities undertaken shall not exceed 10mm/s irrespective of the frequency of the activity measured.
CNV.6	Blasting shall be undertaken between 09:00h and 17:00h, Monday to Saturday, except that blasting may be undertaken between 09:00h and 17:00h on Sundays where: (a) The blasting is at least 50m inside the Sector 8 tunnel; (b) The blasting produces peak particle velocities at any residential building not exceeding 0.5mm/s; and (c) ~~The Project construction noise criteria set out in CNV.2 (iii) for Sundays is complied with.~~ The Project construction noise criteria set out in Condition CNV.2(a)-(d) for Sundays are complied with.

CNV.7	Where practicable, permanent (traffic) noise barriers, required in any Sector as Detailed Mitigation Options for operational noise following completion of the Project (in accordance with Conditions ON.3 to ON.5) shall be erected prior to ~~major~~ noise generating construction works ~~occurring.~~ Where this is not practicable, temporary noise mitigation measures shall be implemented in accordance with the CNVMP.
CNV.8	Pile driving or pile removal shall not be undertaken at night (i.e. during the hours of 20:00 – 06:30).
CNV.9	The concrete batch plants shall be fully enclosed.
CNV.10	If noise and vibration monitoring, as required by Conditions CNV.2 and CNV.4 and the CNVMP, indicates that temporary relocation is required for residents at 1510 Great North Road during construction, then at least 1 months notice shall be given to the leaseholder at 1510 Great North Road to confirm relocation requirements.
CNV.11	Any relocation required by CNV.10 shall not take place at least 10 working days prior to or during Unitec Examinations.
CNV.12	The SSNMPs (required by Condition CNV.1(xv) above, shall be submitted to the Council Noise Officer and Council Compliance Officer for review and certification at least 5 working days prior to the proposed works commencing. Certification or otherwise will be provided by the Council within 3 working days of receipt of the SSNMP. Works will not commence until certification is received from Auckland Council.

Proposed Noise (ON) Conditions – Operation

ON.1	For the purposes of Conditions [ON.~~1~~2–ON.14] the following terms will have the following meanings: • Appendix E – means Appendix E to the Technical Report G.12 'Assessment of Operational Noise Effects' submitted with this application. • BPO – means Best Practicable Option. • Building Modification Mitigation – has the same meaning as in NZS 6806:2010. • Design Year – means a point in time that is 10 years after the opening of the Project to the public • Emergency Mechanical Services – means mechanical services used for emergency situations only. • Habitable room – has the same meaning as in NZS 6806:2010. • Noise Criteria Categories – means groups of preference for time-averaged sound levels established in accordance with NZS 6806:2010 when determining the BPO mitigation option; i.e. Category A – primary noise criterion, Category B – secondary noise criterion and Category C – internal noise criterion. • NZS 6806:2010 – means NZS 6806:2010 Acoustics – Road-Traffic Noise – New and Altered Roads. • PPFs – means only the premises and facilities identified in green, yellow or red in Appendix E. • Structural mitigation – has the same meaning as in NZS 6806:2010.
ON.2	The NZTA shall implement the traffic noise mitigation measures identified as the "Preferred Mitigation Options" in Appendix E as part of the Project, in order to achieve the Noise Criteria Categories indicated in Appendix E ("Identified Categories"), where practicable and subject to Conditions [ON.3–ON.11] below.

Proposed Noise (ON) Conditions – Operation

ON.3	The detailed design of the structural mitigation measures of the "Preferred Mitigation Options" (the Detailed Mitigation Options) shall be undertaken by a suitably qualified acoustics specialist prior to construction of the Project, and, subject to [Condition ON.4], shall include, as a minimum, the following: (a) Noise barriers with the location, length and height in general accordance with Appendix E and designed in accordance with the ULDF(Section B); and (b) A requirement that Open Graded Porous Asphalt ("OGPA") or equivalent low-noise generating road surface be used on all surface roads throughout the Project, except at the Great North Road Interchange; and (c) For the Great North Road Interchange, a requirement that Twin Layer Open Graded Porous Asphalt ("Twin Layer OGPA") or equivalent low-noise generating road surface be used as shown in Appendix E.
ON.4	Where the design of the Detailed Mitigation Options identifies that it is not practicable to implement a particular structural mitigation measure in the location or of the length or height included in the "Preferred Mitigation Options", either: (a) If the design of the structural mitigation measures could be changed and would still achieve the same Identified Category at all relevant PPFs, and a suitably qualified planner approved by the Auckland Council certifies to the Auckland Council that the changed structural mitigation measure would be consistent with adopting BPO in accordance with NZS 6806:2010, the Detailed Mitigation Options may include the changed mitigation measures; or (b) If the changed design of the structural mitigation measure would change the Noise Criteria Category at any relevant PPF from Category A or B to Category C but Auckland Council confirms that the changed structural mitigation measure would be consistent with adopting BPO in accordance with NZS 6806:2010, the Detailed Mitigation Options may include the changed structural mitigation measures.
ON.5	The Detailed Mitigation Options shall be implemented prior to completion of construction of the Project.

Proposed Noise (ON) Conditions – Operation

ON.6	Prior to construction of the Project, a suitably qualified acoustics specialist shall identify those PPFs where following implementation of all the structural mitigation measures included in the Detailed Mitigation Options, Building Modification Mitigation in accordance with NZS6806: 2010 may be required to achieve 40 dB L_{Aeq} inside habitable rooms (Category C Buildings).
ON.7	(a) Prior to commencement of construction of the Project in the vicinity of a Category C Building, the NZTA shall write to the owner of each Category C Building seeking access to such building for the purpose of measuring internal noise levels and assessing the existing building envelope in relation to noise reduction performance. (b) If the owner(s) of the Category C Building approve the NZTA's access to the property within 12 months of the date of the NZTA's letter (sent pursuant to Condition ON.7(a), then no more than six months prior to commencement of construction of the Project, the NZTA shall instruct a suitably qualified acoustics specialist to visit the building to measure internal noise levels and assess the existing building envelope in relation to noise reduction performance.
ON.8	Where a Category C Building is identified, the NZTA shall be deemed to have complied with [Condition ON.7] above where: (a) The NZTA (through its acoustics specialist) has visited the building; or (b) The owner(s) of the Category C building approved the NZTA's access, but the NZTA could not gain entry for some reason (e.g. entry denied by a tenant); or (c) The owner(s) of the Category C Building did not approve the NZTA's access to the property within the time period set out in Condition 7(b) (including where the owner(s) did not respond to the NZTA's letter (sent pursuant to Condition ON.7(a) within that period); or (d) The owner(s) of the Category C Building cannot, after reasonable enquiry, be found prior to completion of construction of the Project. If any of (b) to (d) above apply to a particular Category C Building, the NZTA shall not be required to implement any Building Modification Mitigation at that Category C Building.

Proposed Noise (ON) Conditions – Operation

ON.9	Subject to Condition ON.8, within 6 months of the assessment required under Condition [ON.7(b)], the NZTA shall give written notice to the owner of each Category C Building: (a) Advising of the options available for Building Modification Mitigation to the building; and (b) Advising that the owner has three months within which to decide whether to accept Building Modification Mitigation for the building, and if the NZTA has advised the owner that more than one options for building modification mitigation is available, to advise which of those options the owner prefers.
ON.10	Once an agreement on Building Modification Mitigation is reached between the NZTA and the owner of an affected building, the mitigation shall be implemented (including the NZTA undertaking any required third party authorisation) in a reasonable and practical timeframe agreed between the NZTA and the owner.
ON.11	Subject to Condition ON.8, where Building Modification Mitigation is required, the NZTA shall be deemed to have complied with [Condition ON.10] above where: (a) The NZTA has completed Building Modification Mitigation to the Category C Building; or (b) The owner(s) of the Category C Building did not accept the NZTA's offer to implement Building Modification Mitigation prior to the expiry of the timeframe stated in [Condition ON.9(b)] above (including where the owner9(s) did not respond to the Requiring Authority within that period); or (c) The owner of the Category C Building cannot, after reasonable enquiry, be found prior to completion of construction of the Project.
ON.12	The NZTA shall manage and maintain the Detailed Mitigation Options to ensure that, to the extent practicable; those mitigation works are maintained to retain their noise attenuation performance until the Design Year.

Proposed Noise (ON) Conditions – Operation

ON.13	All mechanical services associated with the general operation of the tunnels shall be designed such that noise emissions do not exceed the following noise limits, when measured at or within the boundary of any residential-zoned site: Monday to Saturday 7 am to 10 pm 50 dB $L_{Aeq(15\ min)}$ Sunday & Public Holidays 9 am to 6 pm 50 dB $L_{Aeq(15\ min)}$ At all other times 40 dB $L_{Aeq(15\ min)}$ 75 dB L_{Amax}
~~ON.14~~	~~Emergency mechanical services associated with the operation of the tunnels shall be designed such that noise emissions do not exceed the following noise limits, when measured at or within the boundary of any residential-zoned site:~~ ~~At all times 65 dB $L_{Aeq(15\ min)}$~~ ~~Any testing of these emergency mechanical services shall occur between the weekday hours of 7am to 10am or 4pm to 6pm.~~
ON.14	(a) Prior to construction, the NZTA shall arrange for a suitably qualified acoustics specialist to undertake a minimum of 8 (eight) representative measurements of ambient noise levels. Measurements shall be undertaken in accordance with the requirements of Section 5.2 of NZS6806:2010. (b) Following completion of the work, the NZTA shall arrange for a suitably qualified acoustics specialist to undertake traffic noise monitoring at the same sites surveyed in Condition ON.14 (a) above, within 2 to 3 years following completion of construction of the Project. Measurements shall be undertaken in accordance with the requirements of Section 5.2 of NZS6806:2010. (c) The results of the noise level monitoring in accordance with ON.14(b) above shall be used to verify the computer noise model of the Detailed Mitigation Option. A report describing the findings of the verification shall be provided to the Consents Manager, Auckland Council within one month of it being completed.

Proposed Vibration (OV) Conditions – Operation

OV.1	Existing ambient vibration levels shall be measured at critical locations nominated by the NZTA, and submitted to the Auckland Council prior to the commencement of works. These baseline measurements will establish pre-Project vibration levels for comparison with future vibration levels.

Proposed Air Quality (AQ) Conditions – Construction

	GENERAL CONDITIONS
AQ.1.	The NZTA shall finalise and implement, through the CEMP, the Construction Air Quality Management Plan (CAQMP) and Concrete Batching and Crushing Management Plan (CBCMP) submitted with the application. ~~The NZTA shall provide the CAQMP and CBCMP to the [Auckland Council] prior to the commencement of any site works.~~ The CAQMP and CBCMP shall ~~be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing.~~ be provided to the Auckland Council at least 20 working days prior to construction activities being undertaken for review and certification that the ~~The~~ CAQMP and CBCMP ~~shall~~ includes~~,~~ ~~but not be limited to,~~ the following details ~~of~~: (a) Daily visual monitoring of dust emissions; (b) Procedures for responding to process malfunctions and accidental dust discharges; (c) Criteria, including consideration of weather conditions and procedures for use of water sprays on stockpiles and operational areas of the site; (d) Continuous monitoring of Total Suspended Particulate (TSP) concentrations and meteorology; (e) ~~Monitoring of odour emissions~~ Monitoring of the times of detectable odour emissions from the ground; (f) Procedures for responding to discharges of odour (including in the event of excavation of contaminated sites); (g) Monitoring of construction vehicle maintenance; (h) Process equipment inspection, maintenance, monitoring and recording, including baghouses, pressure relief valves and high level alarms; (i) Complaints investigation, monitoring and reporting; and (j) The identification of staff and contractors' responsibilities.
AQ.2.	The NZTA shall review the CAQMP and CBCMP at least annually and as a result of any material change to the Project. ~~Any material changes to the CAQMP and CBCMP shall be submitted to the [Auckland Council] for review at least 10 working days prior to the changes taking effect.~~ Any consequential changes will be undertaken in accordance with Condition CEMP.13.
AQ.3.	All construction activities shall be operated, maintained, supervised, monitored and controlled at all times so that all emissions authorised by this consent are maintained at the minimum practicable level.

Proposed Air Quality (AQ) Conditions – Construction

AQ.4.	The NZTA shall undertake construction activities in accordance with the CEMP, CAQMP and CBCMP, such that: (a) Hard surfaced areas of the construction yards and active construction areas are vacuum swept or scraped down at least twice each week and additionally as reasonably required; (b) All unsealed areas of the site used for vehicle movement are maintained visibly damp by the use of water sprays or a water cart during weather conditions where the potential for dust emissions exist; (c) Wheel wash systems are installed at all truck exits from unpaved areas of the site onto public roads are used for all trucks that depart from the site; (d) All stockpiles are constructed and positioned to minimise the potential for dust emissions. The surfaces of all stockpiles are maintained adequately damp at all times to minimise the release of particulate matter; (e) Belt conveyors for moving dry materials are fitted with water sprays or enclosed to minimise wind entrainment of dust. Where installed, water suppression is used whenever the conveyors are used for moving dry materials.
	PROCESS CONDITIONS – CONCRETE BATCHING:
AQ.5.	Air displaced from concrete batching plant during silo filling or concrete batching shall be vented to atmosphere via filter units as follows: (a) Cement silos – a pulse jet baghouse mounted on top of the silo designed to meet a particulate discharge concentration limit of 30 mg/m^3, a collection efficiency of 99.9% and a maximum air to cloth ratio of 3.0 m^3/m^2/min. (b) Cement weigh hopper – a static baghouse mounted on top of the weigh hopper designed to meet a particulate discharge concentration limit of 30 mg/m^3, a collection efficiency of 90% and a maximum air to cloth ratio of 1.0 m^3/m^2/min. (c) Mixer drum – either via the cement silo or via a separate baghouse designed to meet a particulate discharge concentration limit of 30 mg/m3, a collection efficiency of 99.9% and a maximum air to cloth ratio of 3.0 m^3/m^2/min. If a separate baghouse is used, the pressure drop across this baghouse shall be continuously monitored.
AQ.6.	Each cement silo on site shall be fitted with a high fill alarm that shall be adequately maintained and be operating whenever bulk cement is being transferred into that silo. In the event of the alarm operating, filling into that silo shall cease immediately and shall not be resumed until the cause has been located and remedied.
AQ.7.	No part of the concrete batching process shall be operated without the associated emission control equipment being fully operational and functioning correctly.

Proposed Air Quality (AQ) Conditions – Construction

	PROCESS CONDITION – ROCK CRUSHING
AQ.8.	Air extract ventilation from the rock crushing plant shall be ducted to a baghouse that shall either discharge entirely within the building or be designed to meet a particulate discharge concentration limit of 30 mg/m^3, a collection efficiency of 99.9% and a maximum air to cloth ratio of 3.0 m^3/m^2/min. If the baghouse does not discharge entirely within the building, the pressure drop across this baghouse shall be continuously monitored.
AQ.9.	No part of the rock crushing process shall be operated without the associated emission control equipment being fully operational and functioning correctly.
	MONITORING
AQ.10.	The NZTA shall undertake visual inspections of dust emissions as follows: (a) Visual inspections of all active construction areas at least three times daily during October to April inclusive, whenever there are construction activities. The results of visual monitoring shall be logged. (b) Visual inspections of dust emissions from the concrete batching plants and rock crushing plant shall be undertaken daily while the plant is operating.
AQ.11.	The operation of water sprays shall be checked at least once each day.
AQ.12.	Continuous monitoring of TSP concentrations shall be undertaken in at least one location in Sector 1, in at least two locations in Sectors 5 and/or 7, and in at least two locations in Sector 9 while construction activities are being undertaken in those Sectors. The locations of continuous TSP monitors shall, as far as practicable, comply with the requirements of AS/NZ 3580.1.1:2007 Method for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment.
AQ.13.	Continuous monitoring of wind speed and direction shall be undertaken in at least one location in each of Sector 1, Sectors 5 or 7 and Sector 9 while construction activities are being undertaken in those Sectors. The locations of wind speed and direction monitors shall, as far as practicable, comply with the requirements of AS 2923:1987 Ambient Air – Guide for the Measurement of Horizontal Wind for Air Quality Applications and be at the same locations as the TSP monitors required by Condition AQ.12 ~~AQ.13~~.

Proposed Air Quality (AQ) Conditions – Construction

AQ.14.	The locations and types of continuous TSP and meteorological monitoring sites required by Conditions AQ.12 and AQ.13 shall be selected by the NZTA in consultation with the Auckland Council. In the event of a failure of the monitoring equipment, this shall be repaired or replaced within 2 working days.
	REPORTING
AQ.15.	All records, logs, monitoring and test results that are required by the conditions of this consent shall be made available on request, during operating hours, to an Auckland Council enforcement officer and shall be kept for the duration of the consent.
AQ.16.	If the monitoring required by Condition AQ.12 shows that concentrations of TSP in ambient air at or beyond the boundary of the site exceeds 80 microgams/m^3 as a 24-hour average, the NZTA shall undertake an investigation into the cause of the exceedence in accordance with the CAQMP.
AQ.17.	A report into the outcome of any investigation required by Condition AQ.16 shall be forwarded to the Auckland Council within 20 working days of the exceedence. If the cause of the exceedence is identified as being an activity undertaken on the site, the report shall also identify additional measures to be taken to reduce discharges of particulate matter into air from that activity.
AQ.18.	Log books shall be maintained that record all relevant information that is required to demonstrate compliance with the conditions of this consent. This information shall include, but is not limited to: (a) Visual assessments of any dust emissions from the site and the source; (b) Any dust control equipment malfunction and any remedial action taken; (c) When a water cart was used and, if so, the frequency of use and the volume of water used (including identification of location); (d) All relevant details of the TSP and meteorological monitoring required by Conditions AQ.12 and AQ.13; (e) Any additional dust control measures undertaken; and (f) The date and time of the entry and the signature of the person entering the information.

Proposed Air Quality (AQ) Conditions – Construction

AQ.19.	The NZTA shall maintain a log of any complaints received relating to air quality. Details of each complaint received shall be forwarded to the Auckland Council within 24 hours of receipt of the complaint. The log shall include any complaints lodged with the Auckland Council where the Council has informed the NZTA of the complaint. The log shall include, but not be limited to the following: (a) The date, time, location and nature of the complaint; (b) Weather conditions at the time of the complaint (including approximate wind speed, wind direction, cloud cover); (c) Any possible other contributing factors (such as a fire, smoky vehicle, a local chimney emission, etc.); (d) The name, phone number and address of the complainant (unless the complainant elects not to supply these details); (e) Any remedial actions undertaken; and (f) The date and time of the entry and the signature of the person entering the information.

Proposed Operational Air Quality (OA) Conditions

OA.1	The vent used to discharge emissions in the tunnels shall discharge vertically into air at a ~~shall be a~~ minimum height of 1~~2~~5m above the ground and shall not be impeded by any obstruction that decreases the vertical efflux velocity.
OA.2	Prior to the tunnels becoming operational, the ~~Requiring Authority~~ NZTA shall establish two ambient air quality monitoring stations and one portal air quality monitoring station. The location and types of these monitoring stations shall be selected by the NZTA in consultation ~~determined and agreed~~ with the Auckland Council and Peer Review Panel (Condition OA.8). Ambient air quality shall be monitored continuously in real time, to monitor potential effects associated with the operation of the ventilation system from the tunnels. ~~M~~Ambient monitoring shall include fine particulates (PM10 and PM2.5) and nitrogen dioxide. Portal monitoring shall include nitrogen dioxide. Results shall be compared with the relevant National Standards for air quality and Auckland Regional air quality targets. ~~Monitoring shall be undertaken for at least 24 months once the tunnels are operational, unless it has been agreed with the Auckland Council that monitoring is no longer required.~~ Monitoring shall be undertaken at each site until the Peer Review Panel recommends that monitoring is no longer necessary. The locations, operation and maintenance schedules of the continuous monitors shall, as far as practicable, comply with the requirements of AS/NZ 3580.1.1:2007 Method for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment, and with methods specified in the National Environment Standards.
OA.3	Continuous monitoring of wind speed and direction shall be undertaken at each ambient air quality monitoring location as required by Condition OA.~~1~~2. The locations of wind speed and direction monitors shall, as far as practicable, comply with the requirements of AS 2923:1987 Ambient Air – Guide for the Measurement of Horizontal Wind for Air Quality Applications.
OA.4	For the first 12 months of tunnel operation, the results of the ambient air quality monitoring shall be reported via validated reports and issued for information via the Project website (monthly). Following this period, and for a period of at least 12 months, reporting shall take place quarterly as follows: Quarter 1 (December to February) by 31 March, Quarter 2 (March to May) by 30 June, Quarter 3 (June to August) by 30 September and Quarter 4 (September to November) by 31 December.
OA.5	If the monitoring required by Condition OA.~~1~~2 shows that concentrations of contaminants in ambient air at the monitoring locations exceeds the relevant air quality standards, or Regional Air Quality Targets, the NZTA shall undertake an investigation into the cause of the exceedence and report this to the Peer Review Panel (Condition OA.8) and the Manager Consents, Auckland Council.

Proposed Operational Air Quality (OA) Conditions

OA.6	The air quality monitoring shall be undertaken in general accordance with the Operational Air Quality Management Procedure (Appendix O of *Technical Report G.1 Assessment of Air Quality Effects*) submitted with this application.
OA.7	The tunnel ventilation system shall be designed and operated to ensure that any air emitted from the tunnel portals does not cause the concentration of nitrogen dioxide (NO2) in ambient air to exceed 200 micrograms per cubic metre, expressed as a rolling 1 hour average, at any point beyond the designation boundary that borders an air pollution sensitive land use.
OA.8	A Peer Review Panel shall be appointed by NZTA with the agreement of Auckland Council for the purpose of reviewing the ambient air quality monitoring programme and results. The Peer Review Panel shall consist of two independent experts in air quality with experience in ambient air quality monitoring and emissions from motor vehicles. The Peer Review Panel shall review all ambient monitoring, relevant traffic data and tunnel emissions and provide a summary report including any interpretation and recommendations to NZTA, Auckland Council and the Public Information Liaison Group within 6 months of the tunnels becoming operational and annually thereafter.

Proposed Landscape and Visual (LV) Conditions

LV.1.	The Urban Design and Landscape Plans (UDL Plans) (~~Drawing Numbers 20.1.11-3-D-L-810-200 to 228 (and planting schedules)~~Plan Set F.16 refer Schedule A) shall be reviewed and revised in accordance with the conditions and submitted to the Auckland Council for ~~their confirmation~~ certification that they comply with the conditions of the consents / designation ~~approval~~ prior to construction of the relevant Project stage, and that they ~~. The UDL Plans shall i~~nclude: (a) Planting to screen houses and noise walls; (b) Planting along the corridor on Traherne Island, in accordance with these conditions and the Ecological Management Plan; (c) Specimen planting on the Great North Road Interchange and the Te Atatu Road Interchange; and (d) Specimen planting at the tunnel portals. ~~(e) The appearance of the Great North Road Interchange ramps:~~ ~~(i) The design shall take into consideration the impact of the structures on the visual quality of the open space underneath; and~~ ~~(ii) The design of the piers and underside of ramps shall be reviewed by the Auckland Council urban design panel.~~ ~~(f) The final form of the following structures northern and southern ventilation buildings and stacks in accordance with the design principles of Section B of the Urban Landscape and Design Framework (ULDF June 2010) and the following conditions:~~ ~~(i) Northern vent building and stack; and~~ ~~(ii) Cradock Street exhaust; and~~ ~~(iii) Southern vent building and stack;~~ ~~For the Northern vent building:~~ ~~(i) The design shall maintain the same components underground as does the lodged design~~ ~~(ii) A fragmented form such that the above-ground building is broken down into small, discrete elements;~~ ~~(iii) Any required roof linkages shall not dominate the form of the building; and~~ ~~(iv) Lighting integrated with the façade design to illuminate the building and shared path along Great North Road~~ ~~For the southern vent building:~~ ~~(v) A slim, linear plan arrangement that maximises the separation of the building from the houses on Hendon Avenue to the east and the pedestrian / cycle way to the west~~ ~~(vi) Modulation of the building such that the operation facility is separated from~~

Proposed Landscape and Visual (LV) Conditions

	~~the remainder of the building to allow a pedestrian / cycle cross-connection at or near the portal~~ ~~For both buildings and stacks:~~ ~~(vii) Treatment of the structures as objects of urban sculpture~~ ~~(g) The appearance of the Great North Road Interchange ramps:~~ ~~(i)The design shall take into consideration the impact of the structures on the visual quality of the open space underneath; and~~ ~~(ii)The design of the piers and underside of ramps shall be reviewed by the Auckland Council urban design panel.~~
LV.2.	The UDL Plans (Plan Set F.16 (refer Schedule A) ~~and as updated in evidence~~) shall be revised to take into consideration the following: (a) Finalisation of the noise barriers (as required by Condition ON.3) in accordance with the design principles for noise walls in the ULDF (Section B); (b) The final areas of the ~~Any relevant~~ Open Space Restoration Plans prepared in accordance with ~~these conditions~~ Conditions OS.1 – OS.7; *Advice note: The Open Space Restoration Plans detailed in Conditions OS.1 – OS.7 may be prepared in advance of or subsequent to the implementation of the UDL Plans.* (c) Oakley Inlet Heritage Plan, prepared in accordance with ~~these c~~ Conditions OS.4, and in particular, consideration shall be given to the design treatment of the Great North Road Interchange piers and ramps to take into consideration the impact of the structures on the visual quality of the open space beneath; (d) Ecological Management Plan, prepared in accordance with ~~these c~~ Conditions V.1, A.1, H.1, F.1 and M.1; and (e) Western Ring Route: Maioro Street Interchange and Waterview Connection – Oakley Creek Rehabilitation and Restoration Guidelines (Boffa Miskell, 2010). ~~(f) Revisions to the UDL Plans, as follows:~~ ~~(i) Drawing No: 20.1.11-3-D-L-810-210 and 211: change in planting type to low-lying area northwest of Waterview Interchange from 'coastal forest' to 'flax/ cabbage tree wetland';~~ ~~(ii) Drawing No: 20.1.11-3-D-L-810-211: change in small area of planting north of the Interchange from 'existing' to 'proposed'~~

Proposed Landscape and Visual (LV) Conditions

	~~(iii) Drawing No: 20.1.11-3-D-L-810--213: provision of a boundary wall of 2m in height (with agreement of the St Francis School)~~ ~~(iv) Drawing No: 20.1.11-3-D-L-810-217: Amend and update to reflect the final design of the northern ventilation building.~~ ~~(v) Drawing No: 20.1.11-3-D-L-810-219: Addition of one toilet facility (Auckland City standard or similar); and Increase planting between playground and westbound ramp. Amend and update to reflect the final design of the southern ventilation building.~~ ~~(v) Drawing No: 20.1.11-3-D-L-810-221: Addition of one toilet facility (Auckland City standard or similar).~~ ~~(vi) Drawing No: 20.1.11-3-D-L-810-222: Increase of Oakley Creek riparian margin 20m width and realignment of Hendon bridge to western edge of this area; recreation of existing carpark to back of tavern following completion of works; change of flax planting in rail designation south of 6 Hendon Avenue to grass.~~ ~~(vii) Drawing No: 20.1.11-3-D-L-810-224: Deletion, smoke exhaust removed from project.~~ ~~(viii) New Sheet: Rehabilitation of 'Waterview Glades' area (Sector 7).~~
~~LV.3.~~	~~In revising the UDL Plans, consultation shall be undertaken with the Community Liaison Group and Manager, Urban Design Auckland Council on the final appearance of the following structures:~~ ~~(a) Northern vent building and stack; and~~ ~~(b) Craddock Street exhaust; and~~ ~~(c) Southern vent building and stack.~~
LV.3.	The NZTA shall have implemented the UDL Plans within 6 months of practical completion of construction of the Project.

Proposed Landscape and Visual (LV) Conditions

LV.4.	The landscaping shall be implemented in accordance with the UDL Plans within the first planting season following the completion of the construction works, provided that climatic conditions are suitable, otherwise at the first practicable opportunity thereafter, and shall be maintained for a period of 10 years thereafter. Should the landscaping be implemented in stages (depending on construction phases), landscaping may be implemented after the first planting season of each stage. *Advice note: On-going control and management of the landscaping within the designation is the responsibility of the NZTA.*
LV.5.	The NZTA shall implement the UDL Plans taking into account the pest plant management guidelines detailed in the Ecological Management Plan (as required by Condition CEMP.3).
LV.6.	The UDL Plans shall make provision for close planting of fast growing native shrubs or small trees (Griselina, Karo, ~~Pittosporums,~~ Tarata or similar) along the security boundary of Construction Yard 1 facing Te Atatu Road. This planting shall be implemented prior to operational use of the yard and maintained in a healthy state for the duration of the works programme. Such planting shall occur at no greater than 1.0m centres and shall comprise plants that are Pb28 or larger at the time of planting.
LV.7.	The NZTA shall ensure that the Temporary Embankments constructed for the Causeway ~~Project~~ are located on the seaward side of SH16 between the motorway end of Rosebank Road and the bridge over the Waterview Inlet.
LV.8.	The NZTA shall ensure that any landscaped areas within the designation ~~open space areas~~ affected by construction activities have sub-soil rehabilitated and top-soil replaced so that the hydrological response including the volume of stormwater runoff generated is as close as practicable to the predevelopment situation. The methodologies to achieve this shall be documented in the ESCP, prepared in accordance with Condition E.3~~UDLP~~.
LV.9.	The UDL Plans shall make provision for the rehabilitation of Construction Yard 2 at the completion of SH16 construction works through the close planting of native coastal species within that part of the yard area seaward of the proposed stormwater filter strip. All planting shall be consistent with the native coastal planting referenced in the ECOMP and Condition V.10.

Proposed Landscape and Visual (LV) Conditions

LV.10.	The UDL Plans shall identify all Amenity Trees required to be removed over the construction of the Project (in accordance with Condition CEMP.6(o) and (p)). Replacement trees shall be sized at 160Lt and will either draw from the Coastal Forest or Basalt Rock Forest ecotypes listed in the Landscape Planting Schedules (provided in F.16) or an agreed alternative species (confirmed by the Manager, Auckland Council), except in the case of those trees subject to Condition ARCH.9. *Advice note: This does not necessary apply to any replacement planting in the Open Space Restoration Plan areas, which will be confirmed in approval from Auckland Council and will be in accordance with relevant Auckland Council Park guidelines (see Condition OS.3).*

Proposed Open Space (OS) Conditions

Permanent Works	
OS.1	The NZTA shall prepare Open Space Restoration Plans to outline how the reserve land occupied during construction will be reinstated or replaced on completion of construction, for handover to Auckland Council. The Open Space Restoration Plans shall be submitted to Auckland Council as landowner for approval at least 3 months prior to practical completion of construction works in the specific areas set out in Condition OS.2.
OS.2	The Open Space Restoration Plans shall be prepared in consultation with the Auckland Council, iwi, the Community Liaison Groups (Condition PI.5), ~~Working Liaison Group,~~ NZHPT, and other recreation users and other users representatives identified by Auckland Council. The Open Space Restoration Plans shall comprise the following specific plans: (a) Waterview Reserve Restoration Plan; (b) Alan Wood Restoration Plan (including Hendon Park and 25 Valonia Street); (c) Oakley Creek Esplanade (Waterview Glades) Restoration Plan; ~~and~~ (d) Jack Colvin Park Restoration Plan; (e) Rosebank Domain Restoration Plan; and (f) Harbourview-Orangihina Reserve Restoration Plan. The areas of the Open Space Restoration Plans are shown in the Open Space Restoration Plan Areas, dated 28 February 2011 (Refer Schedule A).

Proposed Open Space (OS) Conditions

OS.3	All Open Space Restoration Plans shall be prepared in general accordance with the UDL Plans (Drawing Numbers 20.1.11-3-D-L-810-200 to 229 (and planting schedules, Rev C)), ~~shall outline measures to mitigate the adverse effects of the Project on local residents~~ and shall include, but not be limited to, the following: (a) Proposed reinstatement of open space by "like for like" quantity ~~and quality~~ of open space lost; (b) Location of any artworks and educational signage; (c) Integration with Oakley Creek restoration works; ~~and~~ (d) Details of any vehicle access through the reserves and parking areas; (e) Consistency with relevant Auckland Council Park guidelines; and (f) The design of all pedestrian and cycleway linkages to follow CPTED principles.

Proposed Open Space (OS) Conditions

Waterview Reserve (Specific)	
OS.4	~~In preparing~~ The Waterview Reserve Open Space Restoration Plan shall be prepared in general accordance with the UDL Plans (Refer Schedule A~~Drawing Numbers 20.1.11-3-D-L-810-210 to 212 and 224 (and planting schedules), Rev C~~), The following shall be provided: (a) Equivalent reinstatement of the following recreational facilities: (i) One senior sports field and associated changing facilities and parking requirements; or (ii) An equivalent financial contribution to the Auckland Council Parks; and (iii) A children's playground; and (iv) One ablution block~~s~~; and (v) Two half basketball courts; and (vi) One volleyball court. With the exception of (a)(ii) above, these facilities are to be provided locally within the affected area, generally as per the UDL Plans (refer Schedule A) ~~lodged in evidence: Drawing Number 20.1.11-3-D-L-810-212, Rev C~~. (b) Other restoration and enhancement: ~~(c) Urban design and landscape plans;~~ (i) Measures to enhance the Oakley Inlet Heritage Area, including interpretative signage and pedestrian access; and (ii) Creation of esplanade reserve along Oakley Inlet. *Advice note: In achieving "like for like" quantity in Waterview additional open space areas developed beyond the designation will be included, in general accordance with the Proposed Open Space Impacts and Replacement Plans (See Schedule A, Row 29).*

Proposed Open Space (OS) Conditions

Alan Wood Reserve (Specific)	
OS.5	The Alan Wood Reserve Open Space Restoration Plan, shall be prepared in general accordance with the UDL Plans (~~Drawing Numbers 20.1.11-3-D-L-810-218 to 223 and 224 (and planting schedules), Rev C~~ Refer Schedule A), The following shall be provided: (a) Equivalent reinstatement of the following recreational facilities: (i) Two senior sports fields, ~~associated changing facilities~~ and associated parking requirements; (ii) One half basketball court; and (iii) One ablution block; These facilities are all to be provided locally within the affected area, generally as per the UDL Plans (Refer Schedule A) ~~lodged with the application Drawing Number 20.1.11-3-D-L-810-218 to 223, Rev C,~~ except that: (iv) They shall seek to provide a 10m clear ~~Consideration will be given to opportunities to improve~~ space for spectators around the fields (e.g. by altering drainage and the detailed design for the stream realignment of Oakley Creek). (b) Other Restoration and Enhancement: (i) ~~Assessment of~~ An extension to the pedestrian / cycle access from the Pedestrian/Cycleway to Methuen Road through the existing park access at 174 Methuen Road, ~~subject to~~ following a full CPTED review and response; (ii) Details of any proposed pedestrian/ cycle access within and to/from the reserve areas (including Hendon Park Bridge) including a full CPTED review and response; and (iii) Separation of pedestrian access within the reserve (e.g. linking the carpark to the fields) from the SH20 Cycleway shown on Plan 20.1.11-3-D-L-810-223, Rev C (Refer Schedule A).

Proposed Open Space (OS) Conditions

Oakley Creek Esplanade Reserve (Specific)	
OS.6	The Oakley Creek Esplanade Reserve (Waterview Glades) Open Space Restoration Plan shall be prepared in general accordance with the UDL Plans (~~Drawing Number 20.1.11-3-D-L-810-229 (and planting schedules)), Rev C~~ Refer Schedule A), ~~shall outline measures to mitigate the adverse effects of the Project on local residents~~ and shall include, but not be limited to, the following: (a) Creation of esplanade reserve at 36 Cradock Street ~~(note: not shown on Plan 20.1.11-3-D-L-810-229);~~ (b) Riparian planting along Oakley Creek.
Jack Colvin Park Restoration Plan (Specific)	
OS.7	In preparing the Jack Colvin Park Open Space Restoration Plan~~, consideration shall be given to~~ equivalent reinstatement of the benched seating area will be offered to Auckland Council. ~~Benched Seating Area.~~
Construction Works	
OS.8	At least 20 working days p~~P~~rior to the occupation of the construction areas within Alan Wood Reserve that impact on the following recreation facilities, the NZTA shall, in consultation and agreement with the Auckland Council, provide: (a) Three soccer playing fields including associated access, ablution block and carparking; or (b) An equivalent financial contribution to the Auckland Council Parks; and (c) A half ~~temporary~~ basketball court.
OS.8a	Prior to occupation of Construction yards 8, 9 and 10, access to the following areas will be maintained or provided (as shown as Area A on the Accessible Open Space in Sector 9 During Construction Plan (Refer Schedule A)): (d) Approximately 4.6ha of existing passive open space from Methuen Road to New North Road. (e) Approximately 2.2ha of newly established active recreation open space and existing passive open space, in the vicinity of the Valonia Street Reserve.

Proposed Open Space (OS) Conditions

OS.8b	Following the stream realignment, a passive recreation linkage between the above open spaces will be provided, establishing a continuous open space linkage from Valonia Street to New North Road (identified as Area B on the Accessible Open Space in Sector 9 During Construction Plan (see Schedule A).
OS.9	At least 20 working days pPrior to the occupation of the construction areas within Waterview Reserve, ~~and where practicable,~~ the NZTA shall, in consultation and agreement with the Auckland Council, provide: (a) A temporary senior sports field ~~playing field~~ (or in lieu an equivalent financial contribution to Auckland Council Parks), half basketball court and volleyball court within the relocated~~/ facilities within the~~ Waterview Reserve ~~and/or Saxon Reserve~~; (b) Development of Saxon Reserve as a community park ~~where practicable~~; and (c) Improvements to the existing pathway connections at Howlett Reserve, providing wider and safer access out to either Howlett Street or Oakley Avenue, unless land purchase requirements deem this impracticable, whereby the existing accessway will be upgraded.~~where practicable~~. (d) ~~An at-grade shared cycle / pedestrian connection from Great North Road to Eric Armishaw Reserve where practicable~~.
OS.10	At least 20 working days pPrior to the occupation of the construction areas within Oakley Creek Esplanade Reserve (Waterview Glades), ~~and where practicable,~~ the NZTA shall, in consultation and subject to agreement with the Auckland Council, provide: (a) Formalisation of the pathway linkage north of Oakley Creek Esplanade Reserve (Waterview Glades) connecting to Oakley Creek; (b) ~~Where practicable, Early~~ Planting of the riparian margins of Oakley Creek.
OS.11	The "Hendon Park Bridge" to the Valonia Reserve area~~, as well as pedestrian connections south of the motorway in Alan Wood Reserve, along Oakley Creek~~ shall be provided ~~as early as practicable~~ within three months of completion of construction works on the SH20 mainline (up to chainage 1300) and the final stormwater pond proposed at Valonia Street.

Proposed Open Space (OS) Conditions

OS.12	During construction, the NZTA shall maintain pedestrian accessways to all open space available for public use during construction and education facilities where access is affected by the works, including any public access that crosses private land. Such access shall be safe, clearly identifiable, provide appropriate surfacing and seek to minimise significant detours. The access shall be of a same or similar standard as that disrupted and will be provided and maintained by the NZTA. *Advice note: This specifically includes the existing pedestrian access that provides a connection to the crossing over Oakley Creek between 1510 Great North Road and Unitec Mt Albert Campus.*
OS.13	Where access to Oakley Creek will be disrupted for more than 3 consecutive days, or over a weekend, or there is no provision for a walkway detour, the Community Liaison Person shall notify the Friends of Oakley Creek at least 20 working days in advance of any planned disruption (except where the disruption is of shorter duration, or an emergency situation).
OS.14	The works shall not result in any permanent loss of carparking from Western Springs Garden carpark.
OS.15	The NZTA shall provide an at-grade shared cycle/pedestrian connection from Great North Road to Eric Armishaw Park (within the designation) once this area is not required for construction.

Proposed Social (SO) Conditions

SO.1	In addition to the Community Liaison Groups established pursuant to Condition PI.5, the NZTA shall establish an Education Liaison Group (including representatives from local schools, kindergartens, childcare facilities, Unitec Institute of Technology, the Ministry of Education and Housing New Zealand Corporation), to provide a forum through which: (a) Relevant monitoring data can be provided (e.g. air quality monitoring); (b) Notice can be provided of when particularly noisy activities will occur in close proximity to schools and education facilities, to enable the opportunity to identify any potential conflict with particular sensitive periods, and the requirement for specific mitigation strategies (e.g. rescheduling of construction activities where practicable); (c) Particular concerns can be raised by educational facilities or parents, discussed and potentially addressed; (d) Notice can be provided of potential construction impacts on school transport routes (including pedestrian/cycle access) to enable the opportunity to identify specific mitigation preferences of the education facilities (e.g. any detour routes) and to enable these facilities to appropriately inform students and/or parents; and (e) Opportunities for educational facilities to participate in Project works associated (e.g. planting or artworks). The Education Liaison Group shall be established at least 2 months prior to construction commencing and shall have regular meetings (at least three monthly) throughout the construction period. The Education Liaison Group shall continue to meet for at least 12 months following the completion of the Project (or less if the members of the Education Liaison Group agree), so that ongoing monitoring information can continue to be disseminated.
SO.2	In addition to Condition SO.1(b) above, where noisy construction activities (that exceed the Noise Criteria in the CNVMP) are proposed in close proximity or adjacent to schools/ childcare centres, the NZTA shall, where practicable, carry out these works outside school hours or during school holidays.

Proposed Social (SO) Conditions

SO.3	The NZTA shall relocate the Waterview Kindergarten to an alternative site, subject to the approval of the Ministry of Education. ~~Upon finalisation of the CNVMP, if compliance with appropriate noise and vibration standards for educational facilities is unable to be achieved while the Waterview Kindergarten is in session to the satisfaction of the Ministry for Education, the NZTA shall offer the Ministry relocation of the Waterview Kindergarten to an alternative site, either within the grounds of Waterview Primary School or a site in close proximity for the entire duration of the construction period. The timing for relocation of the kindergarten back to its original premises shall be determined in consultation with the Ministry of Education and Auckland Kindergarten Association (where practicable to undertake this relocation over holiday period between school years).~~
SO.4	The NZTA shall, in agreement with the Ministry of Education, monitor the Waterview Primary School and the Waterview Kindergarten rolls: (a) ~~Throughout the construction period~~ At commencement of construction in the Waterview area (including demolition of houses within the confirmed designation footprint); and (b) For a period up to ~~6-12~~ 3 years ~~months~~ after construction is completed in the Waterview area ~~practical completion the NZTA has vacated Construction Yards 6 and 7~~ and confirmed the operational designation footprint in these areas, or until monitoring shows the roll has stabilised to the 2006 roll level (155 and 30 students respectively) over two consecutive years (whichever is shorter).
SO.5	Should monitoring ~~of the school rolls of Waterview Kindergarten and Waterview Primary~~ as required by Condition SO.4 indicate that ~~they~~ the rolls of Waterview Kindergarten and Waterview Primary School have dropped below 30 and 155 respectively (the 2006 roll levels), the NZTA shall in consultation with the Ministry of Education~~work with~~ provide financial resources ~~to the Ministry for Education~~ ~~and the school boards~~ to ensure that ~~appropriate~~ ~~staffing~~ ~~levels~~ resources are maintained ~~for~~ to these 2006 roll levels during the required length of monitoring. ~~are continued over the construction period and up to 6-12 months after practical completion the NZTA has vacated Construction Yards 5 and confirmed the operational designation footprint in these areas.~~

Proposed Social (SO) Conditions

SO.6	In addition to the Community Liaison Group established pursuant to Condition PI.5, the NZTA shall establish a Working Liaison Group (WLG) inviting the following: (a) Auckland Council; (b) Housing New Zealand Corporation; (c) Te Kawerau Iwi Tribal Authority; (d) Ngati Whatua o Orakei; (e) KiwiRail; (f) Department of Conservation; ~~and~~ (g) Ministry of Education; and (h) Local Boards. The purpose of this WLG will be to provide a forum through which: (a) Opportunities for public work development (including social housing, passenger transport or recreation / open space) are identified in areas where the NZTA confirms that the designation is no longer required (e.g. following construction activities); (b) Comment can be provided on ~~finalised~~ updated Urban Design and Landscape Plans, including the finalised designs of structural elements for the Project (prior to their submission to the Auckland Council); (c) Opportunities for integration of other environmental projects (e.g. restoration plantings) are identified; and (d) Consideration is given to appropriate protocols for commencement and completion of construction activities (including blessings for commencement of construction phases). The Working Liaison Group shall be established at least 2 months prior to construction commencing and shall have regular meetings (at least three monthly) throughout the construction period.

Proposed Vegetation (V) Conditions

V.1	The NZTA shall finalise the ~~Ecological Management Plan (~~(ECOMP~~)~~ submitted with this application, prior to works commencing on site. The ECOMP shall be implemented through the CEMP. The ECOMP shall clearly identify the location and identity of: (a) All Significant Vegetation within the designation that is to be fully protected or relocated; and (b) All Valued Vegetation within the designation that is affected by the works (protected or removed) ~~as far as is practicable~~. Note: Significant and Valued Vegetation shall be as defined in the ECOMP.
V.2	The NZTA shall employ a suitably experienced botanist ('nominated botanist') for the duration of the works to monitor, supervise and direct all works affecting or otherwise in close proximity to the Significant Vegetation and Valued Vegetation identified in the ECOMP.
V.3	Prior to any site works commencing, a pre-commencement site meeting shall be held so that the conditions of designation that pertain to the Significant Vegetation and Valued Vegetation and all vegetation in general (both native and exotic) within the designation are explained by the nominated botanist to all contractors or sub-contractors who will be working on site within the close vicinity of that vegetation.
V.4	The NZTA shall minimise ~~as far as practicable~~ the amount of vegetation (both native and exotic) which is to be cleared within the designation, with the exception of weeds (both woody and otherwise). All vegetation clearance shall be undertaken in accordance with the measures set out in the ECOMP.
V.5	The NZTA shall install protective fencing around, or otherwise clearly demarcate, all of the Significant Vegetation identified in the ECOMP as requiring full protection, under the supervision of the nominated botanist.
V.6	The NZTA shall replace any terrestrial Valued Vegetation that is required to be removed as a result of construction activities, in accordance with the ECOMP and the Urban Design and Landscape ~~Management~~ Plans.
V.7	The nominated botanist shall supervise all trimming, pruning and relocation work associated with the Significant Vegetation and Valued Vegetation required as part of the works.

Proposed Vegetation (V) Conditions

V.8	Immediately prior to planting, and for a period of 2 years following completion of construction, the NZTA shall undertake weed control and management of all invasive ~~any~~ plant pests within the vegetated areas of the surface designation for the Project. *Advice note: Following this 2 year period, on-going control and management of all invasive plant pests within these same areas will be the responsibility of the NZTA as part of its overall network management. ~~designated areas that are identified as plant pests in the Auckland region by the Auckland Regional Council (including Total Control/Containment Pests/Surveillance Pests and Research Organisms).~~*
V.9	The nominated botanist shall undertake a monitoring programme throughout the construction period, including monitoring of: (a) The condition, repair and location of the temporary protective fencing or other forms of demarcation used to identify the Significant Vegetation; (b) Any works within the vicinity of the Significant Vegetation and Valued Vegetation; (c) The general health of the Significant Vegetation and Valued Vegetation (including any Significant or Valued Vegetation that has been relocated away from the works area); and (d) Compliance with the vegetation conditions of designation by way of fortnightly inspections during the construction period.
V.10	~~Where practicable,~~ Any planting utilising native plants shall use plants genetically sourced from the Tamaki Ecological District where possible or otherwise shall use plants that have been genetically sourced ~~or where this is not possible, then preferably~~ from within the Auckland Ecological Region.
V.11	Prior to commencement of works adjacent to Traherne Island, the NZTA shall employ a suitably qualified and experienced plant translocation expert to uplift and protect all areas of *Mimulus repens* on Traherne Island that will be affected by the work. The *Mimulus repens* shall be relocated to suitable and safe habitat away from the works area, or otherwise held and protected for the duration of the works in the vicinity of their original location and be replanted back at that location (or in close proximity to it) upon completion of the works. The location of the recipient sites will be determined in consultation with the Department of Conservation and in general accordance with the Traherne Island Natural Heritage Restoration Plan (2009 – 2014). Trials shall ~~will~~ be undertaken to identify appropriate recipient sites, with these trial sites being monitored for a period of no less than 5 years, or until their failure. Where possible, recipient sites shall ~~will~~ be located in currently weed-free areas. Where recipient sites may potentially be affected by weeds, they shall ~~will~~ be subject to an on-going weed management plan. Should translocation attempts fail at all trial sites then the NZTA, in consultation with DOC, shall ~~will~~ determine an alternative appropriate form of mitigation.

Proposed Vegetation (V) Conditions

V.12	Should the taxonomic and rarity status of the Geranium species growing alongside Oakley Creek in Hendon Park and Alan Wood Reserve not be confirmed before the commencement of works in this area, then this species shall be treated as ~~Potentially~~ Significant Vegetation and shall either be: (a) Protected in full or in part~~, if practicable~~; and/or (b) Where ~~If~~ protection ~~in full~~ is not practicable, relocated to a suitable and safe habitat elsewhere; or (c) Where ~~If~~ protection ~~in full~~ or translocation are not practicable, this population shall be cleared in locations where required to allow works to proceed, but replaced with an equal extent of replacement plantings of the same species (from propagated material sourced from the existing population) planted at a safe and suitable habitat nearby in Hendon Park/Alan Wood Reserve.
V.13	Any clearance of the Geranium in accordance with Condition V.12 shall be restricted to the minimum necessary to facilitate the works.
V.14	A rock forest restoration programme shall ~~will~~ be undertaken by the NZTA on the northern banks of the Oakley Creek Inlet in ~~general~~ accordance with the concepts of the ECOMP, Appendix H '*Rock Forest Provisional Concept Plan*'. A detailed planting plan~~s~~ shall be submitted to Auckland Council ~~for their~~ to confirm~~ation~~ that it is consistent with the *Rock Forest Provisional Concept Plan* lodged with the application ~~designation~~, prior to implementation of the planting, with the plan ~~designs~~ to include planting specifications and management techniques. The detailed planting plan shall be integrated with cultural heritage values including, but not limited to, those shown on the plan entitled '*Oakley Inlet Heritage Area*' (Urban Design & Landscape Plans Sheet 224 – 20.1.11-3-D-L-810-224 Rev B).
V.15	Planting along and within the rock revetment of the widened SH16 causeway shall ~~will~~ be undertaken by the NZTA at locations in general accordance with the Urban Design and Landscape Plans and planting schedules (Refer Schedule A, Row 17), as identified in those plans under the label "*Rock Armour with Saltwater Revetment Planting*". The planting treatments will be in ~~general~~ accordance with the concepts of the ECOMP, Appendix I '*Conceptual Rock Revetment Planting Designs*'.

Proposed Vegetation (V) Conditions

V.16	A restoration programme shall ~~will~~ be undertaken by the NZTA within the designation adjacent to Eric Armishaw Park, in ~~general~~ accordance with the ECOMP, Appendix J: '*Eric Armishaw Park Restoration Plan*'. *Advice Note : In addition to the land in the restoration programme within the designation at this location, the NZTA shall use its best endeavours to also include the land held for road purposes by Auckland Council to the immediate west, subject to the approval ~~permission~~ from the Auckland Council.*
V.17	All realignments and riparian enhancements of Oakley Creek shall be carried out in ~~general~~ accordance with the Oakley Creek Realignment and Rehabilitation Guidelines and in general accordance with the Urban Design and Landscape plans.
V.18	The NZTA shall maintain pest and weed management works as identified in the existing NZTA Traherne Island Natural Heritage Restoration Plan (2009-2014) through to 2014.

Proposed Avian (A) Conditions

A.1	The NZTA shall finalise, and implement through the CEMP, ~~the Ecological Management Plan~~ the ~~(~~ECOMP~~)~~ submitted with this application to include the matters set out in Conditions A.2 to A.~~4~~6.
A.2	The NZTA shall provide temporary high tide roosting structure(s) adjacent to the Causeway during construction, in accordance with the ECOMP, to the satisfaction of the Auckland Council. The temporary bird roosts shall be sized in accordance with the ECOMP, and located within the Waterview Estuary adjacent to the southern side of the causeway and in the vicinity of the existing Causeway bridge.
A.3	The NZTA shall employ a suitably qualified ecologist to undertake monitoring of the roosting areas located at: (a) The existing high tide roost in Harbourview-Orangihina Park; and (b) The temporary construction roosting structure(s) pursuant to Condition A.2~~3~~. Monitoring shall be undertaken on a monthly basis, with a monitoring report prepared on a quarterly basis. The monitoring report shall be made available to the Auckland Council and~~/or~~ Department of Conservation upon request.
A.4	Should the monitoring results indicate that the roosting sites have been abandoned, consultation shall be undertaken with the Department of Conservation and the Auckland Council to determine the need for and type of further management strategies (if any) required.
A.5	Vegetation clearance at Traherne Island shall occur outside the bird breeding season of September to December. Elsewhere, vegetation clearance shall occur outside the bird breeding season of September to December where practicable. ~~Where practicable, vegetation clearance shall occur outside the bird breeding season of September to December.~~
A.6	Animal pest control shall be undertaken by the NZTA on Traherne Island (northern and southern sides) and on the Coastal Marine Area (CMA) frontage of SH16 from Traherne Island North to Whau Creek, and on the southern side of SH16 from Traherne Island South to Whau River (in accordance with Condition V.18).

Proposed Herpetofauna (H) Conditions

H.1	The NZTA shall finalise and implement through the CEMP, the ~~Ecological Lizard Management Plan (~~ECOMP) submitted with this application to include details of lizard management to be undertaken, including ~~of~~ the following: (a) Lizard capture methodology, including timing; (b) Lizard release locations(s); (c) Lizard habitat enhancement at population release sites, including a detailed pest control programme for a minimum of one month prior to release and for a minimum of three consecutive years' duration after release; (d) Location(s), monitoring and maintenance of lizard protective fencing; (e) Post-release monitoring methodology; and (f) Lizard captive management methodology. ~~The NZTA shall submit the finalised LMP to [Auckland Council] prior to the commencement of site works and shall implement the LMP.~~

Proposed Lighting (L) Conditions

	Operation
L.1	Lighting shall be designed and screened to minimise the amount of lighting overspill and illumination of residential areas, in general accordance with the Waterview Connection Lighting Plan (Drawing Set F.11 (Refer Schedule A, Row 12)~~, Drawing No. 20.1.11-3-D-C-161-100 to 119), and shall demonstrate that~~: a) All motorway lighting shall be designed in accordance with "Roadlighting Standard AS/NZS1158"; b) All other lighting shall be designed in accordance with relevant rules provided in Rule 14 of the Waitakere City District Plan or Part 13 of the Auckland City Bylaw (April 2008); c) Fully cut off luminaries shall be used on SH20 from the Southern Tunnel Portal to the Maioro Street Interchange to minimised lighting overspill, as shown on Drawing Set F.11(Refer Schedule A, Row 12)~~, Drawing No. 20.1.11-3-D-C-161-100 to 119),~~.
	Construction Zones and Construction Yards
L.2	A Temporary Construction Lighting Management Plan shall be prepared for all construction zones and construction yards prior to commencement of any night time works within the construction zones and construction yards. The Temporary Construction Lighting Management Plan shall be independently verified by a lighting specialist and provided to the Auckland Council for certification of compliance~~review and comment~~ ~~15~~ 10 working days prior to any night time work commencing. The certification process shall ensure that the Plan includes (but is not be limited to): a) The layout and arrangement of all temporary lighting required for night time works, and shall show how this avoids the "Light Spill Restriction Zone" identified on the Construction Yard Plans (Drawing Set F.6, Drawing Numbers 20.1.11-3-D-C-161-100 to 112) submitted with the application, and that the temporary lighting complies with relevant rules provided in Rule 14 of the Waitakere City District Plan or Part 13 of the Auckland City Bylaw (April 2008); b) Provision for a 10m buffer between the night time work and any residential boundary at all times to minimise potential for light spill; and c) General operating procedures outlined in the CEMP.

Proposed Lighting (L) Conditions

L.3	Asymmetrical floodlights with horizontal glass visors that are not raised more than 3 degrees above the horizontal plane shall be used for any temporary construction night time lighting requirements. Alternative temporary lighting arrangements may be used, subject to the prior approval of the Auckland Council, where it can be demonstrated that the proposed lighting is similar or better to asymmetrical floodlights with glass visors. Glare shall be kept below the recommendation given in AS 4282 – 1997 "Control of the Obtrusive Effects of Outdoor Lighting" Tables 2.1 and 2.2.

Proposed Archaeology (ARCH) Conditions

ARCH.1	The NZTA shall complete, and implement through the CEMP, the Archaeological Site Management Plan (ASMP) submitted with the notice of requirement, to include, but not be limited to: a) Identification of the Project archaeologist, their role and responsibility on the Project; b) Who reports to the Project archaeologist; c) Specific sites requiring supervision, and measures to be undertaken to protect and manage these sites; d) Whether NZHPT and/or Auckland Council heritage and/or iwi supervision is required for the specific site (the latter to be determined through consultation with the relevant iwi groups); and e) Accidental discovery protocols in the event that unknown archaeological sites are uncovered.
ARCH.2	The NZTA shall employ at its expense a qualified archaeologist (the Project archaeologist) who shall be on site to monitor all initial earthworks, including surface stripping of the site, for all specific areas identified in the ASMP to establish whether any sub-surface archaeological features are present. This includes, but is not limited to, the following areas: (a) All unmodified areas in the vicinity of Rosebank Road; (b) All works in the vicinity of the "Oakley Inlet Heritage Area", located adjacent to the Great North Road Interchange; (c) Works in the vicinity of two midden sites (recorded R11/2214 and R11/2215) within Great North Road Interchange, and all previously unmodified areas near the banks of the Oakley Inlet; (d) Any ground disturbance works in Construction Yard 7 within Oakley Creek Reserve.

Proposed Archaeology (ARCH) Conditions

ARCH.3	If any archaeological sites, including human remains are exposed during site works, then the following procedures shall apply: (a) Immediately it becomes apparent that a possible archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease; (b) The site supervisor shall immediately secure the area in a way that ensures that any artefacts or remains are untouched and notify the Project archaeologist; (c) The Project archaeologist shall inspect the site to assess the relevance of the find, and then the Auckland Council shall be advised of the significance; (d) If the site is confirmed to be an archaeological site by the Project archaeologist, the site supervisor shall then notify tangata whenua, the New Zealand Historic Places Trust, and the Auckland Council that an archaeological site has been exposed so that appropriate action can be taken; (e) In the case of human remains, the NZ Police shall be notified.
ARCH.4	In accordance with the ASMP, the following archaeological sites shall be fenced off and protected to the satisfaction of the Project archaeologist, prior to construction activities being undertaken: (a) Recorded sites R11/2504, R11/2505, R11/2506 and R11/2507, located on the northern boundary of the designation adjacent to the Rosebank Road peninsula. (b) Recorded site R11/2383 in the Oakley Creek Esplanade Reserve construction yard.
ARCH.5	In accordance with the ASMP, the following specific measures shall be implemented in the area identified as the "Oakley Inlet Heritage Area" (including recorded sites R11/2191, R11/2202, R11/2203 and R11/2459), located adjacent to the Great North Road Interchange: (a) ~~Once details of the construction methodology and access requirements have been determined,~~ In determining the details of construction methodology and site access, the NZTA shall ensure that there is no impact on sites R11/2202, R11/2203 and the main features of site R11/2191 (the basalt walls, boiler, building foundations and platforms). When the details have been determined, a plan will be prepared in consultation with the Project archaeologist that outlines the areas of archaeological value to be fenced off and protected from any adverse effects during the construction process. The Heritage Manager, Environmental Services, Auckland Council shall be consulted in the drafting of the plan and shall certify that the extent and method of fencing will protect the areas of archaeological value prior to commencement of construction works within the area. This plan will be added to the Archaeological Constraints layer in the GIS layers included as an Appendix of the ASMP in the CEMP.

Proposed Archaeology (ARCH) Conditions

ARCH.5 cont.	(b) All works in the Oakley Inlet Heritage Area shall be monitored by the Project archaeologist; (c) Machine access to construction works in this area shall be planned so as to minimise adverse effects on archaeological features; (d) During and following removal of houses north of Cowley Street and west of Great North Road in the area where the mill workers' cottages and mill race were once located, investigations shall be undertaken to establish and record any archaeological remains that may have survived; (e) Remedial or limited restoration works should be carried out to the basalt walls, wheel pit and bridge abutment of the mill/tannery/ quarry site (R11/2191), to a specification prepared by a heritage professional, to ensure their long term preservation. The specification shall be prepared in consultation with the Heritage Manager, Environmental Services, Auckland Council; (f) A vegetation management plan shall be prepared and implemented to remove vegetation that is damaging archaeological features in this area and to protect and enhance features with appropriate vegetation cover. This plan shall form part of the Waterview Reserve Restoration Plan (refer to Conditions ARCH.6 and OS.2) and shall be prepared in consultation with the Heritage Manager, Environmental Services, Auckland Council; (g) The location of any walkways and paths within the Oakley Inlet Heritage Area shall include consideration of historic paths and accessways. ~~(h) A pedestrian bridge linking the northern and southern banks of the Oakley inlet shall be provided in the original location of the historical bridge to restore the historical connection between the two parts of the Oakley Inlet Heritage Area and make both parts easily accessible;~~ ~~Provide interpretative signage of the Oakley Inlet Heritage Area for public information and educational purposes.~~

Proposed Archaeology (ARCH) Conditions

ARCH.6	The Project archaeologist shall be made part of the Waterview Reserve Restoration Plan (refer Condition OS.2) development team to provide advice on long term management of the "Oakley Inlet Heritage Area". The Waterview Reserve Restoration Plan shall include provision for, as a minimum: (a) A pedestrian bridge linking the northern and southern banks of the Oakley inlet shall be provided in the original location of the historical bridge to restore the historical connection between the two parts of the Oakley Inlet Heritage Area and make both parts easily accessible; (b) Interpretative signage of the Oakley Inlet Heritage Area for public information and educational purposes.
ARCH.7	In accordance with the ASMP, any works to the dry stone wall (recorded site R11/2213) located on the north western boundary of the Great North Road Interchange, shall be minimised ~~as far as possible~~ and managed in accordance with the following: (a) If it is necessary to demolish part of the wall, the stone shall be used to repair the remainder of the wall. ~~Any surplus shall be offered to Auckland City Council for use in repairing other historic stone walls.~~ Appropriate reuse of any surplus stone will be determined following consultation with the NZHPT and Auckland Council. (b) The remainder of the stone wall shall be protected from construction machinery by the use of waratahs and an adequate buffer area prior to earthworks commencing. (c) The remainder of the stone wall shall be carefully cleared of vegetation growth and repaired where necessary to a specification prepared by a heritage professional employed at the expense of the NZTA.
ARCH.8	All contractors and subcontractors working on the Project shall be trained on the archaeological requirements set out in the ASMP.
ARCH.9	All oak trees (*Quercus spp*) over 10m in height within Sector 5 shall be identified and managed through the CEMP Amenity Tree process (Conditions CEMP.6(o) and (p)). Irrespective of their health (unless the Project Arborist and Auckland Council confirm that these trees pose an immediate hazard), these trees will be confirmed as Amenity Trees. These trees shall be retained where practicable. If removal of any of these trees is required for construction, they shall be replaced by oak trees of the same species (*Quercus spp)* sized at 160Lt. Two trees shall be provided for every tree removed. The location of replacement specimens will be defined through planning of the Oakley Inlet Heritage Area (as part of the Waterview Reserve Restoration Plan, refer Condition OS.2)

Proposed Archaeology (ARCH) Conditions

Advice note	*Any archaeological sites within the area affected by the Project shall not be modified or disturbed in any way unless written authorisation has been obtained from the NZ Historic Places Trust.*

Proposed Ground Settlement (S) Conditions

S.1	The NZTA shall finalise, and implement through the CEMP, the Settlement Effects Management Plan (SEMP) lodged with the application prior to construction activities being undertaken. ~~and provide it to the [Auckland Council].~~ Prior to construction (following detailed investigation and design), the total estimated settlements and building damage categories shall be confirmed using the methodology ~~adopted~~ in ~~the preparation of~~ Technical Report G.13 *Assessment of Ground Settlement Effects* and the SEMP shall be updated accordingly. In the event that settlement predictions are greater (than Figure E.14 ~~in Technical Report G.13 *Assessment of Ground Settlement Effects* (~~refer Schedule A)) or building damage categories increase in ranking or buildings affected (Figures G1-G4 (refer Schedule A), mitigation measures shall be introduced as part of the detailed design and construction process to avoid any adverse effects greater than predicted by the application lodged in August 2010.

Proposed Ground Settlement (S) Conditions

	Settlement Monitoring
S.2	The NZTA shall establish a series of ground settlement monitoring markers to monitor potential settlement in relation to the construction of the tunnels. The survey markers will be located generally as follows: (a) Along the tunnel alignment and extending out to a maximum of 400m either side of the tunnels to correlate with cross sections that have been used for the settlement estimates and to infill between them. (b) To cover the more extensive eastern zone area of settlement at Chainage 3400 (Figure E.14 refer Schedule A ~~in Technical Report G.13 *Assessment of Ground Settlement Effects*~~). (c) On or around buildings or features considered to be particularly sensitive as defined in the SEMP (including those buildings identified in Condition S.7) and as may be updated to reflect detailed analysis and interpretation of monitoring results as the Project proceeds. Two types of markers shall be established: Framework Markers which shall form the main basis of monitoring, and Intermediate Markers which shall provide additional monitoring information for interpretation of Alerts and Alarms. The locations of each type of settlement monitoring marker~~s~~ shall be confirmed in the SEMP. Each Framework Marker shall have an alert and alarm level set in relation to Figure E.14, where alert = 75% of the theoretical value and alarm = 100% of the theoretical value with due consideration of the seasonal range of ground movement identified by pre-construction monitoring.

Proposed Ground Settlement (S) Conditions

S.3	The NZTA shall survey the settlement monitoring markers at the following frequency: (a) Pre-construction i) All Framework Markers – Vertical and selected h~~H~~orizontal ~~and vertical~~ at 3 monthly intervals, starting at least 12 months prior to construction commencing; and ii) All Intermediate Markers – Vertical and selected h~~H~~orizontal ~~and vertical~~ once. (b) During Construction i) All Framework Markers – Vertical on a monthly basis; and ii) Selected Framework Markers only – Horizontal on a monthly basis. (c) During Active Construction i) All Framework and Intermediate Markers – Vertical on a weekly basis; and ii) Selected Framework Markers only – Horizontal on a monthly basis. "Active construction" shall be defined as: (a) Starting when the advancing tunnel face comes within 150m and ending when the final tunnel lining has been installed 150m beyond the section; and (b) When excavation in front of a retaining wall comes within 100m of a section and ending when the permanent wall supports are in place beyond a distance of 100m.
S.4	Within three days of ~~Immediately following~~ each monitoring round, the NZTA shall use the settlement monitoring results (together with the results of groundwater monitoring where they may provide an earlier indication of future settlements) to reassess the ground settlements and building damage categories and compare them to those estimated in ~~Technical Report G.13 *Assessment of Ground Settlement Effects*, submitted with this application~~ ~~the SEMP~~ Figures E.14 and G1–G4 (refer Schedule A, Row 26 and 27). If alert and alarm levels are exceeded, the trigger marker shall be resurveyed within 24 hours. If the reassessment indicates that a building has increased its damage category from that in Figures G1 – G4 (refer Schedule A, Row 27)~~Technical Report G.13 Assessment of Ground Settlement Effects,~~ then this shall be considered to be an ~~Alarm~~ Alert Level and additional specific assessment of the building shall be carried out by the NZTA to confirm this reassessment within 72 hours. If the additional assessment confirms the increase in damage category, this shall be considered to be an ~~Alert~~ Alarm Level and the property owner and occupier will be notified within 48 hours. Following consultation with the property owner and occupier(s); subsequent actions may include increased frequency and/or extent of monitoring, modification to the construction approach or mitigation works to the affected building.

Proposed Ground Settlement (S) Conditions

S.5	Settlement monitoring shall be undertaken for a period of 2 years following completion of the tunnels. The NZTA may reduce the frequency of settlement monitoring, required by Condition S.3, to 6-monthly: (a) Once the active construction stage has passed; and (b) Monthly monitoring has been undertaken for a minimum of 6 months; and (c) The monitoring indicates that any potential settlement effects are within a satisfactory range as specified in the SEMP; and (d) The criteria in (a) to (c) above has been certified by the Auckland Council. ~~Settlement monitoring shall be undertaken for a period of 2 years following completion of the tunnels.~~
S.6	The NZTA shall collate the results of the settlement monitoring (undertaken pursuant to Conditions S.2 - S.5) and prepare a report that shall be made available to the [Auckland Council]. A settlement monitoring report shall be prepared prior to the commencement of construction, and then at monthly intervals throughout the construction period. Following the completion of construction, a settlement monitoring report shall be prepared following each round of settlement monitoring undertaken (i.e. monthly and then 6-monthly when monitoring is reduced pursuant to Condition S.5). The settlement reports shall highlight any alert or alarm level exceedances and provide a full interpretation and/or explanation as to why these levels are exceeded, the likely effects and detail any remedial or mitigation measures initiated as a result of these trigger exceedances.

Proposed Ground Settlement (S) Conditions

	Building Condition Surveys
S.7	The NZTA shall review and update the schedule of buildings and structures considered to be at risk in accordance with the criteria of the SEMP and maintain this for review by the Auckland Council. This shall include, but not be limited to, the following properties identified in the Technical Report G.13 *Assessment of Ground Settlement Effects* provided in support of this application: (a) Buildings on properties within the substrata designation; (b) Buildings where total estimated settlement is greater than 50mm (defined in Figure E.14 – Refer Schedule A, Row 26), ~~Figures G1–G4 as categories 1–5);~~ (c) Buildings in areas estimated to have a risk of damage more than negligible (defined in Figures G1–G4 as categories 1–5 (Refer Schedule A, Row 27)); (d) Unitec Buildings 76, and 310–313; (e) 1510 Great South Road, Unitec Residential Flats (two buildings); (f) Pak'n'Save Supermarket; (g) Metro Football Clubhouse, Phyllis Street; (h) Building at 1550 Great North Road; (i) BP Service station at 1380 Great North Road; (j) Modern Chairs Building (Richardson Road); ~~and~~ (k) Waterview Primary School; (l) Operational septic tanks where total estimated settlement is greater than 50mm; and (m) Buildings on the western side of the alignment between Chainage 3000 and 3400 where total estimated settlement is greater than 20mm.
S.8	The NZTA shall consult with owners of buildings and structures identified in Condition S.~~6~~7 and, subject to the owner's approval of terms acceptable to the NZTA, shall undertake a pre-construction condition assessment of these structures in accordance with the SEMP.
S.9	The NZTA shall employ a suitably qualified person (e.g. a Chartered Professional Engineer) to undertake the building assessments required pursuant to Conditions S.8~~7~~ and S.12 and identify this person in the SEMP.

Proposed Ground Settlement (S) Conditions

S.10	The NZTA shall undertake monthly visual inspections of the following buildings during the "active construction" phase of the Project as defined in Condition S.3: (a) All Type 1 Dwellings within a zone where "more than negligible" effects have been predicted; (b) All Type 2 Dwellings within a zone where "slight" effects or greater have been predicted (c) Unitec Building 76; (d) 1510 Great North Road, Unitec Residential Flats (two buildings); (e) Pak'n' Save supermarket; and (f) Waterview Primary School (pool and hall). Note: Type 1 and 2 Dwellings are those as defined in Technical Report G.13 *Assessment of Ground Settlement Effects.*
S.11	The NZTA shall undertake level and/or wall inclination surveys on a monthly basis during the "active construction" phase of the Project on the following buildings: (a) All Type 1 Dwellings within a zone where "slight" effects or greater have been predicted; (b) Unitec Building 76; and (c) 1510 Great North Road, Unitec Residential Flats (two buildings); ~~and~~ (d) Waterview Primary School (pool); and (e) Pak 'n' Save Supermarket
S.12	The NZTA shall, subject to the owner(s) approval, ensure that within 6 months of completion of construction activities, a post-construction condition assessment covering the matters identified in the SEMP is undertaken and shall be provided to the owner(s). The assessment report shall include a determination of the cause of damage identified (if any) since the pre-construction condition assessments. The NZTA shall agree with the owner(s) appropriate remedial works (if any) in conjunction with ~~and~~ arrangements for implementation and/or compensationing ~~them with the owner~~. The requirements of this condition need not be fulfilled for any particular building with the written approval of the current owner of a building or where the NZTA can provide reasonable evidence to the Auckland Council that the current owner of that building has agreed they do not require such a survey.

Proposed Ground Settlement (S) Conditions

S.13	The NZTA shall ensure that a copy of the pre, post-construction and any additional building condition assessment reports for each building be forwarded to the respective property owner(s) within 15 working days of completing the reports. The NZTA shall notify the Auckland Council that the assessments have been completed. The community liaison person appointed pursuant to Condition ~~in~~ PI.1 shall be the contact person for owner(s) subject to assessment and reporting under ~~these c~~Conditions S.1 to S.11 and remedial works or compensation payments under Condition S.12.
	Retaining Wall Monitoring
S.14	The NZTA shall establish inclinometer and surface monitoring of the retaining walls for the tunnel portals and cut and cover tunnel to determine any potential effect from the tunnels. The nature and timing of the monitoring shall be determined during detailed design of the retaining walls and specified in the SEMP.
	Services Monitoring
S.15	Prior to construction commencing, the NZTA shall undertake CCTV surveys of services identified in the SEMP as being susceptible to damage or particularly critical. This shall include, but not be limited to: (a) Waterview Orakei No. 9 trunk sewer. The NZTA shall monitor these services by undertak~~e~~ing additional CCTV surveys throughout the construction period. ~~to ensure that there has been no significant damage to these services.~~ If any damage is determined in relation to the Project, NZTA shall undertake any remedial action as required in consultation with the service provider.

Proposed Ground Settlement (S) Conditions

	Slope Stability Assessments
S.16	Prior to construction commencing, the NZTA shall undertake geotechnical investigations of slopes or sites that have been identified as potentially being susceptible to movement. This shall include, but not be limited to: (a) 14H and 14J Cradock Street (b) 34 Cradock Street (c) 40 Cradock Street (d) 56 Powell Street; ~~and~~ (e) 1590A Great North Road; and (f) Other sites on the western slopes of Oakley Creek identified under Condition S.7(b) and S.7(m) which are assessed in the course of a pre-construction condition assessment undertaken in accordance with Condition S.8 as potentially being susceptible to slope movement. The NZTA shall undertake monitoring throughout the active construction period in accordance with Condition S.10 above and shall assess and agree remedial action as required, in consultation with the owner, in accordance with Condition S.12 above.
S.17	Pairs of settlement markers shall be established on each side of the cross sections identified on Figure E.14 to monitor differential movements. The markers in each pair shall be no more than 20m apart, and each pair shall be within 100m of the centreline of the closest tunnel. Monitoring installed in accordance with Condition S.11 can be utilised for this purpose. Each pair of markers shall have Alert and Alarm values set based on the calculated differential settlements at that location and consistent with the relevant calculated Building Damage Category (Figures G1-G4, (Refer Schedule A Row 27)), Alert and Alarm levels shall be as defined in Condition S.2. Monitoring frequency shall be as defined for Framework Markers in Condition S.3.

Proposed Groundwater (G) Conditions

G.1	The NZTA shall finalise, and implement through the CEMP, the Groundwater Management Plan (GWMP), submitted with this application ~~and provide it to the [Auckland Council]~~ prior to commencement of ~~tunnelling~~ construction dewatering. The NZTA shall submit the GWMP to the Auckland Council one month prior to the commencement of construction dewatering for certification that it includes ~~written approval of the Manager. The GWMP shall include~~, but is not ~~be~~ limited to: (a) A schedule of monitoring bores identifying piezometer depth and geological unit; (b) The method of bore construction and piezometer installation (including testing carried out in piezometers); (c) The location of the groundwater monitoring bores and monitoring cross-sections shown on plans; (d) The location of the groundwater monitoring bores; (e) The location of the continuous monitoring stations on Oakley Creek; (f) The methods and frequency for groundwater monitoring; (g) The groundwater trigger levels; (h) Procedures to follow in the event of trigger levels being exceeded; (i) Reporting requirements.
G.2	The NZTA shall install and maintain the groundwater monitoring boreholes shown in Appendix A of the GWMP, for the period of monitoring specified in this Consent.
G.3	The NZTA shall monitor groundwater levels in the groundwater monitoring boreholes shown in Appendix A of the GWMP and keep records of the water level measurement and corresponding date in accordance with the GWMP. These records shall be compiled and submitted to the Auckland Council at three monthly intervals.
G.4	The NZTA shall monitor groundwater levels monthly in existing boreholes and in newly installed monitoring boreholes shown in Appendix A of the GWMP (required as part of this consent, as far as practicable) for a period of at least 12 months before the commencement of tunnelling. The variability in groundwater levels over this period, together with the monitoring trends obtained during the investigation and detailed design phases, will be used to establish seasonal groundwater level variability and establish trigger levels.

Proposed Groundwater (G) Conditions

G.5	Prior to the commencement of tunnelling, and then at 3 monthly intervals while tunnelling, the NZTA shall review the results of monitoring as compared with expected effects on groundwater levels due to tunnelling. This review will consider the final tunnel alignment construction methodology and progress at the time of the review. The output of the first review shall be used to define the expected range of groundwater levels at each borehole during tunnelling activities and check the potential for damage to structures due to ground settlement. A factor for natural seasonal variability shall be allowed for in this review based on the monitoring completed under Condition G.4.
G.6	From commencement of tunnelling, the NZTA shall monitor groundwater levels in each borehole at a minimum of monthly intervals and records shall be kept of each monitoring date and the corresponding water level in each borehole. In addition, all boreholes located within 100 metres of the tunnel excavation face shall be monitored for groundwater level at least twice weekly. These records shall be compiled and submitted to the Auckland Council at three monthly intervals.
G.7	From commencement of tunnelling, the NZTA shall monitor groundwater level in boreholes established in the Phyllis Street Reserve. Should water levels rise more than 0.6 m above the highest recorded pre-construction water level in the period where tunnelling is taking place within 100 m of the Reserve, then an inspection of the surface of the landfill will be made and the surface re-levelled in areas where cracking of the cap or ponding of water on the surface is indicated (other than exists prior to commencement of the works).
G.8	All monitoring data obtained pursuant to Condition G.6 shall be compared to the predicted groundwater levels for each borehole. Where groundwater levels are exceeded the appropriate actions as set out in the GWMP shall be undertaken and the Auckland Council shall be notified, forthwith, advising of the exceedance, the risk of settlement that might cause damage to structures or adverse effects in Oakley Creek, and details of the actions undertaken.

Proposed Groundwater (G) Conditions

G.9	The NZTA shall continue to monitor groundwater levels in each borehole at monthly intervals for a period of up to 12 months following completion of tunnelling, then 3 monthly thereafter for a further 24 months, or for a lesser period if groundwater levels in any particular borehole show either: (a) Recovery of the groundwater level to within 2 metres of the pre-tunnelling groundwater level as recorded in accordance with Condition G.5; or, (b) A trend of increasing groundwater level in at least 3 consecutive monthly measurements; or; (c) An equilibrium in the groundwater level, allowing for the seasonal variation, has been reached, In which case monitoring at that borehole may cease, subject to the written approval of the Auckland Council.
G.10	The NZTA shall establish continuous flow monitoring stations at the following approximate locations within Oakley Creek: (a) Chainage 1800 – 1900 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-117); (b) Chainage 2200 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-116); (c) Chainage 3500 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-114); (d) Between Chainage 3900 to 4200 ((Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-113); The NZTA shall establish a continuous flow monitoring station at the upstream major tributary at Chainage 1000. The NZTA shall continue to monitor the flow monitoring station installed at CH2900 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-116). The exact location of the gauges shall be determined based on stream bed conditions such that they record the full range of flows as far as practical, with the locations detailed in the GWMP.

Proposed Groundwater (G) Conditions

G.11	The continuous monitoring required by Condition G.~~9~~10, shall record in-stream flows, at 15 minute intervals, for a period of: (a) At least 12 months prior to tunnelling commencing; (b) During tunnelling; and (c) Up to 12 months following completion of tunnelling, or a shorter period if no effects on base flows are recorded.
G.12	The continuous monitoring results shall be reviewed on a monthly basis to determine if there is any effect of the tunnelling on base flows in Oakley Creek. The results shall be reviewed by a hydrologist and freshwater ecologist and included in the 3 monthly groundwater reports, and provided to the Auckland Council.
G.13	Authorised Quantity: Following completion of excavation and construction, the daily quantity of groundwater diverted and taken shall not exceed 750 m^3 and the annual quantity diverted and taken shall not exceed 273,750 m^3.
G.14	The NZTA shall, within 10 working days of completion of tunnelling, advise the Manager Auckland Council, in writing, of the date of completion.

Proposed Contaminated Land and Contaminated Discharges (CL) Conditions

CL.1	The NZTA shall finalise and implement through the CEMP, the Contaminated Soil Management Plan (CSMP) submitted with this application~~. The CSMP shall be provided to the [Auckland Council]~~ prior to commencement of any site works. The CSMP shall include, but not be limited to: (a) Measures to be undertaken in the handling, storage and disposal of all material excavated during the construction works; (b) Soil validation testing and groundwater testing; (c) Soil verification testing to be undertaken to determine the nature of the excavated spoil and potential reuse or disposal options; (d) Measures to be undertaken in the event of unexpected contamination being identified during construction activities; and (e) Measures to be undertaken for the handling of asbestos containing material.
CL.2	Prior to the main construction works commencing, the baseline quality of soils and groundwater within Sector 5 (the southern bank of Oakley Creek coincident with the location of the former tannery) and Sector 7 (particularly in relation to works in the vicinity of Great North Road) shall be investigated and established. The investigations shall be carried out in accordance with appropriate Ministry for the Environment and Auckland Council guidelines. The findings of the soil and groundwater investigations shall be used to determine any likely environmental effects in relation to the Project and the need for specific construction methods during work in this area.
CL.3	Prior to the main construction works commencing, soils and fill materials within Alan Wood Reserve (Sector 9) shall be further classified so as to determine the distribution and extent of cleanfill, managed fill and contaminated/hazardous fill materials.
CL.4	All excavated soil shall be tested by the NZTA in general accordance with the CSMP, prior to either reuse on site or disposal off site. The testing regime shall be submitted for approval by the Auckland Council.
CL.5	The NZTA shall notify the Auckland Council within 5 working days of identification of any contamination at the site which was not identified in the reports submitted in support of this application, including contaminated soil, surface water or groundwater.
CL.6	The NZTA shall remove contaminated soil and remove and dispose of any contaminated groundwater/surface water from the site in accordance with the CSMP.

Proposed Contaminated Land and Contaminated Discharges (CL) Conditions

CL.7	The NZTA shall engage a suitably qualified contaminated land specialist to supervise the works, excavation and removal of any contaminated soils from the site and undertake sampling (if required) of imported material.
CL.8	All testing / sampling techniques shall be carried out in accordance with the Ministry for the Environment Contaminated Land Management Guidelines or other equivalent standards approved in writing by the Auckland Council.
CL.9	During and following the tunnel construction works beneath Sector 8, groundwater quality monitoring shall be carried out at locations within and down hydraulic gradient of Phyllis Street Landfill. Monitoring shall be undertaken on at least a monthly basis, and for a period up to 12 months following completion of the tunnel construction works. The monitoring programme shall be submitted for approval by the Auckland Council as landowner.
CL.10	Prior to, during and following tunnel construction works beneath Phyllis Street Landfill, monitoring for landfill gas shall be carried out from existing monitoring boreholes within the landfill. Monitoring shall be undertaken on at least a monthly basis, for a period of no less than 6 months prior to, and up to 12 months following completion of the tunnelling works. The monitoring programme shall be submitted for approval by the Auckland Council as landowner.
CL.11	The NZTA shall submit to the Auckland Council, a Site Closure Report no later than three (3) months after the completion of the earthworks. The Report shall be prepared in accordance with Schedule 13 (Schedules for Reporting on Contaminated Land) of the Proposed Auckland Regional Plan: Air Land and Water and include: (a) Results of any soil reuse and imported material testing carried out to ensure compliance with the CSMP; (b) Volumes of soil removed from site; (c) Copies of the waste disposal receipts; and (d) Reports of any non-compliance with the CSMP procedures or complaints received while undertaking the site works.

Proposed Earthworks (E) Conditions

E.1	**Pre-construction conditions** The NZTA shall inform the Auckland Council in writing at least 10 working days before the start date of the works authorised by this Consent.
E.2	Prior to commencement of works, in each period between October 1 and April 30 that this Consent is exercised, a pre-construction site meeting between Auckland Council and relevant parties, including the primary contractor, shall be conducted. The approved Contractors Erosion and Sediment Control Plan (CESCP) as per Condition E.5 of this Consent shall be made available and discussed at the pre-construction meeting.
E.3	**Erosion and Sediment Control Conditions** Erosion and sediment control shall be in general accordance with the plans and information submitted with the application, and in particular, Technical Report G.22 *Erosion and Sediment Control Plan,* subject to such amendments as may be required by the following conditions of this Consent.
E.4	A detailed schedule of construction activities shall be prepared and forwarded to the Auckland Council prior to the commencement of works, and updated at 3 monthly intervals during the works. These schedule shall include details of: (a) The location, commencement date and expected duration of any major earthworks operations, including but not limited to, the portal excavations and the Great North Road cut and cover operation; and (b) The proposed construction and methodology, including staging of earthworks.

Proposed Earthworks (E) Conditions

E.5	Prior to the commencement of works for each specific area and/or activity, a "Contractors Erosion and Sediment Control Plan" (CESCP) shall be prepared. This document shall follow the principles and practices within Technical Report G.22 *Erosion and Sediment Control Plan* and shall detail any specific variations from that report. The CESCPs shall include, but not be limited to: (a) Contour information at suitable intervals; (b) Erosion and sediment controls including specific pond design; (c) Supporting calculations; (d) Catchment boundaries for the sediment controls; (e) Location of the works, and cut and fill operations; (f) Details of construction methods to be employed, including timing and duration; (g) A programme for managing exposed area, including progressive stabilisation considerations; (h) The identification of appropriately qualified and experienced staff to manage the environmental issues onsite; (i) The identification of staff who have clearly defined roles and responsibilities to monitor compliance with the Consent Conditions and CESCP; (j) Provision of details of a chain of responsibility for managing environmental issues and details of responsible personnel; and (k) The establishment of a sediment control team (including representatives from the contractor, Auckland Council and the NZTA) to meet and review erosion and sediment control on a weekly basis.
E.6	For each specific area of works, a CESCP shall be submitted a minimum of 20 working days prior to earthworks commencing, for the written approval of the Auckland Council, which shall be obtained prior to earthworks commencing. The approved CESCP shall be implemented accordingly.
E.7	Any amendments to the CESCPs must be approved by the Auckland Council in writing at least 10 working days prior to any amendment being implemented.
E.8	Erosion and sediment control measures shall be constructed and maintained in accordance with the ARC Technical Report 90 (TP90) (and any amendments to that document), except where a higher standard is detailed in the documents referred to in Conditions E.3 and E.5 above, in which case the higher standard shall apply.

Proposed Earthworks (E) Conditions

E.9	The NZTA shall ensure that all discharges from tunnel dewatering activities shall be treated and monitoring undertaken of the discharge into the Oakley Creek, and of the Oakley Creek itself, to determine an appropriate water quality standard for turbidity and pH for the discharge at the portal location. On completion of 3 months of the monitoring programme, this water quality standard shall be applied to the treatment pump system and set at a limit that reflects the monitoring results. The monitoring programme shall be developed by the NZTA and approved by the Auckland Council prior to any tunnel excavation works commencing. Initial pump treatment standards shall be set at a turbidity of 50NTU and pH of 7.5. Ongoing monitoring and changes to the turbidity and pH standards shall be implemented with the approval of the Auckland Council.
E.10	Prior to any decision to discharge waters that have collected in coffer dam sumps to the coastal marine area (CMA), the following procedures shall be followed; (a) Sump waters shall be tested for pH and turbidity; and (b) Discharge to the CMA shall only be permitted where; (i) pH does not exceed a threshold of pH 8.5; and (ii) turbidity or suspended solids concentrations do not exceed a threshold, to be agreed between NZTA and the Manager Major Consents, Auckland Council prior to use of temporary coffer dams. In the event that measured pH and/or turbidity exceeds these thresholds, the sump waters shall be treated to the appropriate standard prior to discharge to the CMA or shall be disposed of to an approved location outside of the CMA. The proposed treatment methodology shall be included within the CESP and shall be submitted to the Auckland Council for its approval at least 20 working days prior to implementation.
E.11	All 'cleanwater' runoff from stabilised surfaces, including catchment areas above the site, shall be diverted away from earthwork areas via a stabilised system, so as to prevent surface erosion.
E.12	All perimeter controls shall be operational before earthworks begin.
E.13	Prior to the construction of sediment retention ponds, super silt fences or other devices approved by the Auckland Council shall be constructed below the entire area of the sediment retention pond footprint.

Proposed Earthworks (E) Conditions

E.14	The NZTA shall ensure that procedures are adopted to prevent the deposition of slurry, clay or other materials on the roads by vehicles leaving the site. Should the exercise of this Consent result in material being deposited on the road, that material shall be removed immediately to the satisfaction of the Auckland Council.
E.15	Notice shall be given to the Auckland Council prior to any erosion and sediment control measures being removed and/or on completion of the works.
E.16	Prior to the commissioning of chemical treatments for sediment management purposes (as per Condition E.17), the NZTA shall provide Auckland Council with a Chemical Treatment Plan (CTP), for confirmation by Auckland Council that it will achieve the standards set out in the CESCP required under Condition E.6~~the written approval of the [Auckland Council]~~. The CTP shall follow the principles and chemical treatment details outlined within the Technical Report G.22 *Erosion and Sediment Control Plan* and shall include as a minimum: (a) Specific design details of the chemical treatment system; (b) Monitoring, maintenance (including post-storm) and contingency programme (including a Record Sheet); (c) Details of optimum dosage (including assumptions); (d) Results of the initial flocculation trial which will build on the information within Technical Report G.22 *Erosion and Sediment Control Plan*; (e) A spill contingency plan; (f) Details of the person or bodies that will hold responsibility for long-term maintenance of the flocculation treatment system and the organisational structure which will support this structure. Any amendments to the CTP shall be approved by the Auckland Council, in writing, at least 10 working days prior to implementation.
E.17	All sediment retention ponds and decanting earth bunds are to be chemically treated in accordance with the CTP ~~Chemical Treatment Plan~~ required under Condition E.16 of this consent.

Proposed Earthworks (E) Conditions

E.18	Prior to bulk earthworks commencing, a certificate signed by an appropriately qualified and chartered professional engineer ("as builts") shall be submitted to Auckland Council to certify that the erosion and sediment controls have been constructed in accordance with the CESCP as specified in Condition E.5 of this consent. Certified controls shall include sediment retention ponds, chemical treatment systems, decanting earth bunds, super silt fences, silt fences and diversion channels/bunds. The certification for any subsequent measures shall be supplied to the Auckland Council immediately upon completion of construction of those measures. Information supplied to Auckland Council, if applicable shall include: (a) Contributing catchment area; (b) Retention volume of structure (dead storage and live storage measured to the top of the primary spillway); (c) Shape of structure (dimensions of structure); (d) Position of inlets/outlets; and (e) Stabilisation of the structure.
E.19	A copy of the "as-built(s)" and approved CESCPs shall be kept on site, and all erosion and sediment control measures (including staging boundaries and particularly the extent of exposed areas) shall be updated as soon as practicable as changes are made. As-built plans shall be accompanied by text detailing the relevant earthworks methodology, constraints and likely progressions, and shall be revised as required to enable clear interpretation as to the day to day operation and management of erosion and sediment controls.
E.20	**Monitoring** The NZTA shall carry out monitoring in accordance with the Technical Report G.22 *Erosion and Sediment Control Plan* and the approved CESCP and shall maintain records detailing: (a) The monitoring undertaken; (b) The erosion and sediment controls that required maintenance; (c) The time when the maintenance was completed; and (d) Areas of non-compliance with the erosion and sediment control monitoring plan (if any) and the reasons for the non-compliance. This information shall be made available to the Auckland Council upon request.
E.21	**Stabilisation** The site shall be stabilised against erosion as soon as practicable, and in a progressive manner, as earthworks are finished over various areas of the site.

Proposed Earthworks (E) Conditions

E.22	The NZTA shall ensure that the following earthworks shall be stabilised as soon as practicable after completion thereof, or within 5 working days of completion, whichever shall occur first: (a) Temporary erosion and sediment controls; and (b) Construction yards.
E.23	**Seasonal Restriction** No surface earthworks on the site shall be undertaken between 1 May and 30 September in any year, without the written approval of the Auckland Council. Earthworks in this regard refers to bulk earthworks (cut/fill/waste) associated with the site.
E.24	Revegetation/stabilisation shall be completed by 30 April in the year of bulk earthworks in accordance with measures detailed in the approved CESCP, unless a later date is approved in writing by the Auckland Council Manager at least two weeks before 30 April.

Proposed Stormwater (SW) Conditions

	Construction
SW.1	Stormwater management during construction shall be undertaken in accordance with the plans and information submitted with this application and the information contained within Technical Report G.15 Assessment of Stormwater and Streamworks Effects. In particular this requires the construction and completion of stormwater management works to the treatment standards detailed in Tables 1 and 2 below: ~~Table 7.1 for the catchment areas detailed in Tables 7:20 and 7:21 of Technical Report G.15 Assessment of Stormwater and Streamworks Effects,~~

Table 1: Motorway catchment areas and treatment standards for Construction Phase of the Waterview Connection Project.

Sector	Existing Impervious		Additional Impervious		Total		Treatment		
	Area (ha)	Percentage proposed treatment (%)	Area (ha)	Percentage proposed treatment (%)	Area (ha)	Percentage proposed treatment (%)	TSS removal*1 (%)	Flood attenuation *2	Extended detention require*3
1	8.05	0	3.67	11.3	11.72	4.4	75	No	No
2	1.45	0	0.72	0	2.17	0	75	No	No
3	3.88	13.6	1.47	0	5.35	9.9	75	No	No
4	8.37	18 – 70*4	3.40	100	11.77	35 – 100	75	No	No
5	6.62	30.3	3.43	100	10.05	54	75	No	No
6	4.08	0	1.07	0	5.15	0	75	No	Yes
7	na	na	na	na	na	na	na	na	na
8	na	na	na	na	na	na	na	na	na
9	1.04	100	8.49	100	9.53	100	75	Yes	Yes
Total	33.49		22.25		55.74				

*1 TSS removal is on a long term average basis.

*2 Attenuation of the peak post-development runoff to the peak pre-development runoff for the 2, 10 and 20 year ARI rainfall events

*3 Extended detention of the 34.5mm rainfall event for 24 hours in accordance with ARC TP10 (2003) guidelines.

*4 Range depends on construction stage refer to Technical Report G.15 for details.

Proposed Stormwater (SW) Conditions

SW.1 cont.

Table 2: Construction Yard Catchment Areas for Water Quality Treatment during Construction Phase of the Waterview Connection Project

Sector	Construction Yards	New Impervious Construction Working Catchments		Treatment		
		Area (ha)	Percentage proposed treatment (%)	TSS removal*1 (%)	Flood attenuation *2	Extended detention require*3
1	1	4.20	100	75	No	No
2		na	na	75	No	No
3	2	0.37	100	75	No	No
4		na	na	75	No	No
5	3 & 4	7.78	100	75	No	No
6	5	1.22	100	75	No	Yes
7	6 & 7	1.90	100	75	No	Yes/No*4
8		na	na	Na	Na	na
9	8, 9, 10, 11 & 12	4.99	100	75	Yes	Yes
Total		20.46				

*1 TSS removal is on a long term average basis.

*2 Attenuation of the peak post-development runoff to the peak pre-development runoff for the 2, 10 and 20 year ARI rainfall events

*3 Extended detention of the 34.5mm rainfall event for 24 hours in accordance with ARC TP10 (2003) guidelines.

*4 Extended detention is to be provided for stormwater devices discharging to Oakley Creek (upstream of Great North Road), but is not required for stormwater devices discharging to Oakley Inlet (downstream of Great North Road).

SW.2 The NZTA shall inform the Auckland Council in writing at least 10 working days prior to the start date of the works authorised by this consent.

Proposed Stormwater (SW) Conditions

SW.3	The NZTA shall submit the final design of the construction stormwater system for approval to the Auckland Council at least 20 working days prior to the commencement of construction works. This certification shall confirm the final design meets Condition SW.1, including ~~include, but not be limited to~~: (a) Design calculations for the following: (i) flow attenuation devices, (ii) stormwater treatment device sizing, (iii) bypass device design, (iv) stormwater treatment device efficiency; (b) Design drawings, including all structures, outfalls, treatment devices, bypass devices, wetlands and ponds; (c) Catchment plans detailing the area draining to each device; and (d) Outfall locations.
SW.4	Any amendments to the final designs required by Condition SW.3 shall be submitted for approval in writing by the ~~[~~Auckland Council~~]~~ at least 20 working days prior to implementation.
SW.5	~~That~~ The NZTA shall arrange and conduct pre-construction site meetings between the ~~[~~Auckland Council ~~City]~~ and all relevant parties, including the site stormwater engineer, with regard to the temporary stormwater management works, prior to construction of these works. Any resulting amendments to the design of the works may be reviewed at that time and shall be approved in accordance with Condition SW.3.
SW.6	The NZTA shall finalise and implement the Temporary Stormwater Management Plan (TSMP) submitted with this application, as part of the CEMP. The purpose of the TSMP is to ensure appropriate controls are in place to manage stormwater during construction.
~~SW.7~~	~~Any amendments to the TSMP shall be approved by the [Auckland Council] in writing.~~
SW.6	The NZTA shall undertake regular inspections of all stormwater treatment devices installed during construction to ensure they are operating in accordance with the consent conditions and TSMP~~successfully~~.
SW.7	The NZTA shall arrange and conduct a post construction site meeting within 30 days of completion of installation of the stormwater management works between Auckland Council

Proposed Stormwater (SW) Conditions

	and all relevant parties, including the site stormwater engineer.
SW.8	The NZTA shall ensure that, for stormwater flows in excess of the capacity of the primary systems, major overland flow paths shall be provided and maintained to allow surplus stormwater from critical storms, up to the 100-year average recurrence interval (ARI) event, to discharge with the minimum of nuisance and damage. *Advice note: For the purposes of this Consent, "major overland flow paths" are those that accompany a primary drainage system of a nominal 600 mm diameter pipe or larger or with peak overland flow exceeding 0.5 m^3/s in the 100-year ARI event.*
SW.9	Any stormwater outfalls authorised by this Consent shall incorporate energy dissipation and/or erosion protection measures to minimise the occurrence of bed scour and bank erosion.

Proposed Stormwater (SW) Conditions

	Operation
SW.10	The permanent stormwater measures shall be installed and operated in accordance with the plans and information submitted with this application and the information contained within Technical Report G.15 *Assessment of Stormwater and Streamworks Effects*. In particular, this requires the construction and completion of stormwater management works to the treatment standards ~~detailed in~~ ~~Table 6.1~~ for the catchment areas detailed in Table 3~~1~~. ~~Tables 6:24 of Technical Report G.15 *Assessment of Stormwater and Streamworks Effects.*~~ Stormwater treatment ~~should~~ shall also be provided for adjunct activities associated with the Project including access roads and carparks for the tunnel ventilation buildings.

Table 3~~1~~: Catchment areas and treatment standards for Operational Phase of the Waterview Connection Project by Sector.

Sector	Existing Impervious		Additional Impervious		Total		Treatment		
	Area (ha)	Percentage proposed treatment (%)	Area (ha)	Percentage proposed treatment (%)	Area (ha)	Percentage proposed treatment (%)	TSS removal*1 (%)	Flood attenuation *2	Erosion protection require*3
1	8.05	100	3.67	100	11.72	100	80	No	No
2	1.45	100	0.72	100	2.17	100	80	No	No
3	3.88	100	1.47	100	5.35	100	80	No	No
4	8.37	100	3.40	100	11.77	100	80	No	No
5	6.62	92.1	3.43	100	10.05	94.8	80	No	No
6	4.08	68.7	1.06	100	5.14	75.2	75	No	Yes
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	1.04	100	8.49	100	9.53	100	75	Yes	Yes
Total	33.49	94.5	22.25	100	55.74	96.8			

*1 TSS removal is on a long term average basis.

*2 Attenuation of the peak post-development runoff to the peak pre-development runoff for the 2, 10 and 100 year ARI rainfall events

*3 Extended detention of the 34.5mm rainfall event for 24 hours in accordance with ARC TP10 (2003) guidelines.

SW.11	The NZTA shall inform the Auckland Council in writing at least 10 working days prior to the start date of the works authorised by this resource consent.

Proposed Stormwater (SW) Conditions

SW.12	The NZTA shall submit the final design of the operational stormwater system to the Auckland Council for approval at least 20 working days prior to the commencement of construction works on the permanent stormwater system. For certification purposes, these designs ~~This~~ shall include, but not be limited to: (a) Design calculations for the following: (i) flow attenuation devices, (ii) stormwater treatment device sizing, (iii) bypass device design, (iv) stormwater treatment device efficiency; (b) Design drawings, including all structures, outfalls, treatment devices, bypass devices, wetlands and ponds; (c) Planting plans and schedules for all stormwater treatment devices; (d) Catchment plans detailing the area draining to each device; and (e) Outfall locations.
SW.13	Any amendments to these final design of the operational stormwater system shall be submitted for approval in writing by the Auckland Council at least 20 working days prior to implementation.
SW.14	The NZTA shall arrange and conduct pre-construction site meetings between the ~~[~~Auckland ~~City]~~Council and all relevant parties, including the site stormwater engineer, with regard to the operational stormwater management works, prior to construction of the permanent stormwater devices. Any resulting amendments to the design of the works may be reviewed at that time and shall be approved in accordance with Condition SW.~~13~~12.
SW.15	Within ~~90 days~~ three months of the practical completion of the stormwater management system, "As Built" plans and documentation of the stormwater system which are certified as a true record of the stormwater management system by a suitably qualified Chartered Professional Engineer shall be supplied to the Auckland Council.

Proposed Stormwater (SW) Conditions

SW.16	The NZTA shall submit to the Auckland Council within ~~90 days~~ three months of the completion of installation of the stormwater management system an updated and final version of the Operational Stormwater Management Plan (OSMP) submitted with the application, to certify ~~confirm~~ it meets the performance standards specified in Technical Report G.15. The purpose of the OSMP is to set out operation and maintenance requirements for the long term operation of stormwater systems implemented as part of the Project. The OSMP shall include a monitoring programme for tunnel water quality to be agreed with the Auckland Council. The monitoring programme shall have a duration of two years. The water quality report shall be submitted to the Auckland Council at the end of each year. The OSMP shall be updated at the end of the monitoring programme to revise procedures for the treatment and disposal of tunnel water. The OSMP shall include, but not be limited to: (a) A programme for regular maintenance and inspection of works; (b) A programme for the collection and disposal of debris and sediment collected by the stormwater management devices or practices; (c) A programme for inspection and maintenance of outfall erosion; (d) A programme for post-storm maintenance; (e) General inspection checklists for all aspects of the stormwater management system; (f) Details of the person or bodies that will hold responsibility for long-term maintenance of the stormwater management system and the organisational structure which will support this process.
SW.17	Any amendments to the OSMP shall be submitted for approv~~ed~~al in writing by the Auckland Council ~~in writing~~ at least 20 working days prior to implementation.
SW.18	The NZTA shall arrange and conduct a post construction site meeting within 30 days of completion of installation of the stormwater management works between the Auckland Council and all relevant parties, including the site stormwater engineer.

Proposed Stormwater (SW) Conditions

SW.19	The NZTA shall ensure that, for major overland flow paths in excess of the capacity of the primary systems, secondary flow paths shall be provided and maintained to allow surplus stormwater from critical storms, up to the 100-year ARI event, to discharge with the minimum of nuisance and damage. *Advice note: For the purposes of this consent "major overland flow paths" are those that accompany a primary drainage system of a nominal 600 mm diameter pipe or larger, or with peak overland flow exceeding 0.5 m³/s in the 100-year ARI event.*
SW.20	Any stormwater outfalls authorised by this Consent shall incorporate energy dissipation and/or erosion protection measures to minimise the occurrence of bed scour and bank erosion. The design of stormwater outfalls shall assess various rainfall events and tailwater levels (stream and sea levels) to ensure the critical storm event is considered in the design.
SW.21	The NZTA shall finalise and implement through the CEMP, the Concrete Batching and Crushing Management Plan (CBCMP) submitted with the application~~. The NZTA shall provide the CBCMP to the [Auckland Council] prior to the commencement of any site works. The CBCMP shall be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing.~~ The CBCMP shall include, but not be limited to, details of: (a) Design of the stormwater treatment device(s); (b) Monitoring requirements; (c) Procedures to be undertaken in the event of unexpected discharges; and (d) Complaints, investigation, monitoring and reporting.
SW.22	In the second year of operation of stormwater treatment wetlands, during the months of December to February, the NZTA shall arrange and conduct a site meeting between the Auckland Council and the NZTA, including the design stormwater engineer, in order to assess plant health of the stormwater treatment wetlands. Any resulting amendments to the wetland design may be reviewed at that time and shall be approved by the Auckland Council.

Proposed Streamworks (STW) Conditions

STW.1.	**General conditions** The streamworks and associated works (such as stormwater outfalls) shall be undertaken in accordance with the plans and information contained within Technical Report G.15 *Assessment of Stormwater and Streamworks Effects* and Technical Report G.22 *Erosion and Sediment Control Plan*, submitted with this application. The design of streamworks and associated works shall follow the approach expressed in the Oakley Creek Re-alignment and Rehabilitation Guidelines, Appendix C of Technical Report G.6 Assessment of Freshwater Ecology Effects.
STW.2.	Any future amendments that may affect the performance of the streamworks shall be approved by the Auckland Council in writing, prior to construction. Any amendments to the design should be in accordance with the Western Ring Route: Oakley Creek Re-alignment and Rehabilitation Guidelines (Boffa Miskell, 2010).
STW.3.	The NZTA shall inform the Auckland Council in writing at least 10 working days prior to any streamworks commencing, and again 10 working days before any environmental protection measures are removed.
STW.4.	Prior to streamworks commencing on site, the NZTA shall arrange and conduct a pre-construction site meeting between Auckland Council, NZTA and the primary contractor~~, prior to any works commencing on the site~~.
STW.5.	At least 20 working days ~~P~~prior to commencement of streamworks associated with the realignments of Oakley Creek and the Stoddard Road tributary, the construction design details associated with these works shall be submitted to the Auckland Council for approval. The details shall include but not be limited to: (a) Detailed design of the proposed streamworks including long sections, cross sections and details of the design including any freshwater habitat improvement and riparian planting; (b) Construction erosion and sediment control plans (ESCP).
STW.6.	The NZTA shall forward a detailed construction programme and methodology to the Auckland Council at least 10 working days prior to the commencement of works, and shall provide monthly updates during the streamworks. These shall include details of: (a) The commencement date and expected duration of the streamworks; (b) The location of any works and structures in relation to the streamworks; and (c) Dates for the implementation of erosion and sediment controls.

Proposed Streamworks (STW) Conditions

STW.7.	No streamworks shall be undertaken between 1 May and 30 September unless written approval has been obtained from the Auckland Council. Any such approval shall be sought at least 10 working days prior to the proposed commencement of the works.
STW.8.	All erosion and sediment controls associated with the streamworks shall be constructed and installed in accordance with Technical Report G.22 *Erosion and Sediment Control Plan* submitted with this application.
STW.9.	The site shall be stabilised against erosion as soon as practicable and in a progressive manner as streamworks are finished.
STW.10.	All uncompacted material shall be kept clear of the channel during and after streamworks.
STW.11.	The NZTA shall ensure that any temporary dam structure built within the stream shall be constructed from non-erodible material (such as sandbags or sheet piles).
STW.12.	The NZTA shall ensure that when dewatering the in-stream works area, no sediment-laden water shall be discharged directly into a watercourse. Any sediment-laden water must be treated in an appropriate sediment treatment device in accordance with TP90.
STW.13.	All machinery shall be maintained and operated in a way which ensures that spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery servicing.
STW.14.	The NZTA shall ensure that: (a) Any excavated sediment that requires temporary stockpiling shall not be placed within the 100 year ARI flood plain, and (b) Erosion and sediment control measures around the stockpile perimeter shall be constructed in accordance with TP90.
STW.15.	The design engineer and Project ecologist shall monitor the construction of the streamworks. The NZTA shall submit to Auckland Council a certificate signed by an appropriately qualified and experienced engineer and ecologist to certify that the streamworks have been undertaken in accordance with the drawings supplied with this application, or as otherwise amended under Condition STW.2, within ~~60 working days~~ three months of completion of the streamworks.

Proposed Streamworks (STW) Conditions

STW.16.	The NZTA shall obtain approval of the constructed stream realignment works from the Auckland Council at least 20 working days prior to diversion of Oakley Creek into the new channel.
STW.17.	**Bridge Structure** The NZTA shall submit a certificate signed by an appropriately qualified and experienced engineer to certify that the Oakley Creek SH20 motorway bridge ~~(SH20)~~ has been constructed in accordance with the drawings supplied with this application, within 3 months ~~60 working days~~ of completion of the structure.
STW.18.	Any erosion occurring as a result of construction of the Oakley Creek bridge (SH20) shall be remedied as soon as possible and to the satisfaction of the Auckland Council.
STW.19.	The area of Oakley Creek beneath the Oakley Creek bridge (SH20) shall be maintained free of debris to ensure stream flows are not restricted.

Proposed Streamworks (STW) Conditions

STW.20.	**Streamworks Environmental Management Plan (SWEMP)** The NZTA shall submit for ~~approval~~ review to the Auckland Council a Streamworks Environmental Management Plan (SWEMP) which shall include details of the final freshwater mitigation and environmental enhancement works associated with the Project to confirm it is consistent with the design set out in Technical Report G.15 and principles of the "Western Ring Route – Maioro Street Interchange and Waterview Connection – Oakley Creek Realignment and Rehabilitation Guidelines" described in STW.22. This SWEMP shall cover the mitigation for the loss of an area of Pixie Stream, Oakley Creek and the Stoddard Road tributary. It shall be submitted to the Auckland Council at least ~~40~~ 20 working days prior to the proposed enhancement works being commenced under this consent and shall include, but not be limited to, the following: (a) The nature of works to be undertaken; (b) The location of works; (c) Detailed design and plans of all enhancements to the stream bed and/or stream channel, including any structures or other engineering works. This includes replication of the existing waterfall located on the Stoddard Road tributary near the confluence with Oakley Creek in a similar position within the new realignment; (d) Riparian planting programmes, including detailed planting plans and specifications relating to species mix, location, density, size and maintenance to achieve an overall average of 70% shading of stream at maturity within those reaches where realignments or the SEV off-setting mitigation associated with the Project are proposed; (e) Timing of implementation; and (f) The outcomes of consultation with Iwi (Ngati Whatua o Orakei and Te Kawerau Tribal Authority), the Community Liaison Group (see Condition PI.6), and Friends of Oakley Creek. *Advice Note: The intent is to include the SEV off-setting mitigation associated with the Maioro Interchange Project within Hendon Park and Alan Wood Reserve, and to the same shading standard as specified in Condition STW 20(d).*

Proposed Streamworks (STW) Conditions

STW.21.	The realignments necessary for highway construction will be rehabilitated separately to the Project's SEV off-set mitigation requirement of 343 metres. The Project's SEV off-set mitigation requirements will be undertaken within the areas demarcated as "Oakley Creek Rehabilitation A – D" as shown on Drawing No. 20.1.11-3-D-D-330-211 Rev A (Refer Schedule A, Row 23). *Advice Note: The SEV off-set mitigation associated with the Maioro Interchange Project is intended to be undertaken upstream and downstream of those areas shown for Realignment and Rehabilitation on Drawing No. 20.1.11-3.D-D-330-211 Rev A (Refer Schedule A, Row 23), for the purposes of creating a coherent ecological corridor in this area.*
STW.22.	The SWEMP shall be prepared in general accordance with the "Western Ring Route – Maioro Street Interchange and Waterview Connection – Oakley Creek Realignment and Rehabilitation Guidelines" (Boffa Miskell, 2010) appended to *Technical Report G.6 Assessment of Freshwater Ecological Effects*..
STW.23.	The NZTA shall implement the mitigation and environmental enhancement works contained in the approved SWEMP within 12 months of practical completion of the Project.
STW.24.	The NZTA shall supply to the Auckland Council within ~~30 working days~~ three months of the completion of the riparian planting works written confirmation from an appropriately qualified landscape architect or ecologist that the riparian plantings have been implemented in accordance with the SWEMP approved under Condition SW.20.
STW.25.	Any material amendments to the SWEMP shall be submitted for approval by the Auckland Council at least 20 working days prior to any amendment being implemented.
STW.26.	**Fish Passage** All proposed stream bed and/or stream channel structures shall not impede the passage of fish both upstream and downstream.

Proposed Streamworks (STW) Conditions

STW.27.	**Flooding** Works in the floodplain (including motorway embankments, ancillary earthworks and streamworks) shall be undertaken in accordance with the plans and information submitted with this application including, but not limited: (a) Waterview Connection Project. Assessment of Environmental Effects Report (Dated August 2010). (i) Plan F.2 Operation Scheme Plans (Refer Schedule A, Row 3); and (ii) Plan F.14 Streamworks and Stormwater Discharges (Refer Schedule A, Row 15). (b) Technical Report G.15 *Assessment of Stormwater and Streamworks Effects.*
STW.28.	Within ~~60 working days~~ three months of completion of the works, the NZTA shall submit to the Auckland Council "as built" plans certified by a qualified and experienced engineer to confirm that the works have been carried out in accordance with Condition STW.27.
STW.29.	Any amendments to works by the NZTA in the floodplain that may increase the flooding effects shall be submitted to the Auckland Council for approval in writing at least 20 working days prior to construction. These proposed amendments shall include updated drawings and hydraulic modelling using the Oakley Creek Catchment Model to assess the effects of the change.
STW.30.	The NZTA shall submit to the Auckland Council a certificate signed by an appropriately qualified and experienced engineer to certify that the flood protection works for the tunnels have been constructed in accordance with the drawings, approach and standards supplied with this application, prior to the opening of the Project.
STW.31.	Design of flood defences for the southern portal shall ~~take into account~~ be in accordance with the catchment management option preferred by Auckland Council with allowances for climate change and Maximum Probable Development.

Proposed Freshwater (F) Conditions

F.1.	The NZTA shall finalise, and implement through the CEMP, the ~~Ecological Management Plan (~~ECOMP~~)~~ submitted with this application. The ECOMP shall be updated to ensure compliance with the conditions of this consent and include changes to the details of construction processes prior to construction commencing. The ECOMP shall include, but not be limited to details of: (a) Monitoring of ~~the~~ freshwater ~~environment~~ ecology; (b) Monitoring of freshwater and stream sediment quality; (c) Trigger event criteria for undertaking additional monitoring; and (d) Procedures for responding to accidental discharges of contaminants to the freshwater environment.
F.2.	The NZTA shall engage a suitably qualified ecologist and water quality scientist to undertake freshwater monitoring programme prior to, during and following construction to monitor the effect of the Project on the freshwater ecology. The freshwater monitoring shall be undertaken in Oakley Creek, Pixie Stream and Meola Creek. The freshwater monitoring programme shall be undertaken in accordance with the details set out in the ECOMP and include: (a) Cross sectional profiles; (b) Macroinvertebrate sampling; and (c) Freshwater fish monitoring.

Proposed Freshwater (F) Conditions

F.3.	The freshwater monitoring programme shall, as a minimum, be undertaken in accordance with the following frequency: (a) Prior to construction – two baseline ecological surveys; (b) During construction – twice per year ~~annually~~ for fish and macroinvertebrates and ~~three times per year for~~ cross sectional profiles, within one month prior to the beginning of the earthworks season and within one month either side ~~, during and at the end~~ of the earthworks season; (c) Post construction – on an annual basis for a maximum period of three years, or less if the Auckland Council is satisfied that no adverse effects have occurred or are likely to occur from the Project. (d) Monthly water quality samples at the five existing Oakley Creek sample locations to be analysed for turbidity, suspended solids, metals (Zn, Cu and Pb) and nutrients. (e) Four "event based" samples per annum from each of the current two Oakley Creek sites. The samples are to be analysed for turbidity, suspended solids, metals (Zn, Cu and Pb), hydrocarbons (TPH) and nutrients. (f) Two sediment quality samples per annum (January and July) at the five existing water quality Oakley Creek sites (if there is sufficient sediment to sample). The samples are to be analysed for metals (Zn, Cu and Pb), polycyclic aromatic hydrocarbons (PAH), hydrocarbons (TPH) and semi-volatile organic compounds. *Advice note: The sample collection and analysis required under sub-clauses (d) to (f) shall be undertaken following an IANZ accredited methodology by a suitably accredited laboratory (International Accreditation New Zealand).*
F.4.	The NZTA shall undertake additional freshwater monitoring in the event of a 'trigger event' for freshwater habitats. For the purposes of this consent, a 'trigger event' for freshwater habitats is defined in the ECOMP.
F.5.	The NZTA shall review the freshwater monitoring results, provided from Conditions F.2 to F.4, and results in monitoring detailed in earthworks Conditions E.9 and E.19 and Groundwater Condition G.10. In the event that potential adverse effects are identified, the NZTA shall develop and implement appropriate contingency plans and/or remedial measures in accordance with the measures set out in the ECOMP.
F.6.	Freshwater monitoring reports shall be compiled from the monitoring undertaken pursuant to Conditions F.2 to F.4, and a report provided to the Auckland Council annually.

Proposed Coastal (C) Conditions

C.1	The NZTA shall provide to the Auckland Council plans and drawings (including dimensioned, cross sections, elevations and site plans of all areas of proposed reclamation (including associated permanent and temporary CMA occupation), permanent structures and temporary structures) at least 20 working days before the proposed date of commencement of the construction of the reclamation, bridge piers or temporary structure.
C.2	Construction shall be undertaken in accordance with the construction methodology detailed in the application, specifically Technical Report G.23 *Coastal Works* and Technical Report G.22 *Erosion and Sediment Control Plan*. The construction methodology shall include: (a) The use of temporary coffer dams to create dry working areas; (b) Realignment of sections of existing low-tide channels in Oakley inlet and Waterview Estuary that will be directly affected by the reclamation works; (c) Removal of mangroves to provide construction and ground-treatment access, placement of temporary coffer dams and to facilitate natural channel migration in the Whau River side drainage channel (east of Rosebank Domain); (d) Installation or removal works to be undertaken at the best practicable time to minimise potential sediment ~~generation~~ disturbance.
C.3	The NZTA shall notify the Auckland Council in writing of the proposed commencement date of the reclamation, structures and/or channel realignment works at least 10 working days prior to the proposed start date.
C.4	The NZTA shall notify the Auckland Council in writing within 10 working days of the completion of each discrete area of reclamation, structures and/or channel realignment works.
C.5	The NZTA shall supply to the Auckland Council and ~~the~~ LINZ Hydrographic Services and LINZ Topographic Services~~Office~~ ~~(Chief Hydrographer, National Topo/Hydro Authority,~~ Land Information New Zealand, ~~Private Box~~ PO Box 5501, Wellington 6145), a complete set of "as built" plans, final topographic and bathymetric data, and appropriate certification confirming that the new reclamations, structures and~~/or~~ channel realignment works have been built in accordance with sound engineering practice, within ~~60 working days~~ three months of the completion of the reclamation works.
C.6	The NZTA shall maintain the site in good order and shall, ~~as far as practicable~~, remedy all damage and disturbance caused by vehicle traffic, plant and equipment to the foreshore during construction, to the satisfaction of the Auckland Council.

Proposed Coastal (C) Conditions

C.7	Removal or pruning of vegetation in the CMA shall be limited to the areas of permanent and temporary occupation as shown on the Waterview Connection Project Assessment of Environmental Effects Plan Set F.12 and F.13 submitted with the application. Removal of ~~any~~ mangroves shall be implemented in accordance with the principles detailed in the Ecological Management Plan.
C.8	The NZTA shall ensure the~~, remove~~ removal of all equipment, erosion and sediment control measures, surplus ~~soil~~sediment and construction materials from the CMA within 20 working days following the completion of the construction works, to the satisfaction of the Auckland Council.
C.9	**Cleanfill** All imported fill material to be used in the reclamations shall be in accordance with the Ministry for the Environment "cleanfill" definition, as detailed in Publication ME418 "A Guide to the Management of Cleanfills, 2002" or subsequent updates.
C.10	The NZTA shall maintain a log recording the source of fill material imported onto each reclamation site. This log shall be made available to the Auckland Council for inspection on request.
C.11	**Navigation of Whau River Bridge** (a) ~~Boating access~~ Navigation of vessels beneath the Whau River Bridges during construction shall be maintained to the satisfaction of the Auckland Harbour Master. (b) For purposes of safe navigation, the NZTA shall identify an appropriate pier to mark on the Whau River Bridges, in consultation with the Te Atatu Boating Club and to the satisfaction of the Auckland Harbour Master. This pier shall be surveyed and marked with height graduations advising available minimum headspace under the Bridges for different stages of the tide with an appropriate safety margin.

Proposed Coastal (C) Conditions

C.12	**Shell Banks** On completion of the relevant stage of reclamation, the NZTA shall ensure that ~~reinstate the~~ stockpiled chenier shell deposits from the northern side of the existing Causeway are reinstated to suitable locations along the northern side of the newly reclaimed Causeway in consultation with the Department of Conservation and the Auckland Council. The placement of the shell bank material shall be to the satisfaction of the Auckland Council. The movement of these reinstated shell deposits should be monitored quarterly for the first year after placement to confirm they have been reworked by waves and re-attached to the unmodified shell banks by undertaking topographic survey transects at low tide and photographs to document the transition. The monitoring information shall be made available to the Auckland Council.
C.13	**Whau River side drainage channel** During preparation works in the CMA for ground improvement and reclamation works adjacent to the Rosebank Domain access road, mangroves required to be removed on the southern side of the existing drainage channel are to be extracted together with their root systems and removed from the CMA to facilitate the lateral migration of the channel to the south prior to infilling. The evolution of the channel shall be monitored by a baseline cross-section survey of the channel at two sites prior to construction, then monitoring the same sections every 2 months until 6 months after completion of the reclamation, together with photographs along the affected section, to confirm the natural migration of the channel is proceeding unimpeded by mangrove roots. The monitoring information shall be made available to the Auckland Council.
C.14	**Managed tidal channel realignments** Following final excavation of each of the three (3) realigned sections of low-tide channels in Waterview Estuary and Oakley Inlet (two sites), **these sites** shall be monitored quarterly for one year after completion of the excavation, to confirm that the channel (thalweg and the transition sections with the unmodified channel) has reached a stable configuration. The monitoring can be achieved around low tide (average tide range) by an on-water visual reconnaissance, spot depth soundings and documented with photographs. The monitoring information shall be made available to the Auckland Council.

Proposed Coastal (C) Conditions

C.15	**Rosebank culvert** Within a month of the closure of the Rosebank culvert under SH16 (adjacent to the Rosebank Westbound Off-ramp), the NZTA shall undertake a single tidal salinity survey on a high spring tide (High Water at or above 3.4 m at Port of Auckland) without significant prior rainfall, to confirm and document that tidal flushing of brackish waters occurs in the boardwalk area presently serviced by the culvert. Salinity, water depth and the length of time either side of high water that the area is effectively inundated shall be monitored at one site near the eastern end of the boardwalk section of the shared cycleway [WGS-84 Map ref: -36.87057° N, 174.67408° E]. The monitoring information shall be made available to the Auckland Council.
C.16	**Intertidal beach seaward of construction areas in the CMA to the north of the Causeway** On the northern side of the Causeway, from just before the commencement of construction in the CMA for each section of works, until 6 months after completion of each section, the NZTA shall undertake every two (2) months or after a severe wave-storm, intertidal beach profile surveys down to the spring low-tide mark along offshore-directed transects (one off the centre of the construction section and one either side at 20 m away from the ends of the construction site) and photographs documenting the physical state of the seabed around the perimeter of the cofferdam. If excessive erosion or accretion occurs from corner or end effects of the construction section, as confirmed by a coastal processes expert, then the NZTA shall ~~will~~ ensure that further seabed erosion control measures or a sediment by-passing method (for accretion) are implemented to reduce localised effects seaward of the temporary occupation or permanent occupation designation (whichever applies). The monitoring information shall be made available to the Auckland Council.
~~*Advice Note*~~	~~*All works during construction in the CMA shall be undertaken so as to meet the Project noise criteria, as specified in the Waterview Connection Assessment of Environmental Effects submitted with the application.*~~

Proposed Marine Ecology (M) Conditions

M.1.	The NZTA shall finalise and implement through the CEMP, the ~~Ecological Management Plan (~~ECOMP~~)~~ submitted with this application. The ECOMP shall be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing. The ECOMP shall include, but not be limited to, details of: (a) Monitoring of marine habitats and ecological values; (b) Trigger event criteria for undertaking additional monitoring; (c) Procedures for responding to accidental discharges to the marine environment; (d) Complaints investigation, monitoring and reporting; and (e) The identification of staff and contractors' responsibilities.
M.2.	The NZTA shall engage a suitably qualified ecologist to undertake a marine habitat monitoring programme, as described in Conditions M.3 to M.6.
M.3.	The marine benthic habitat monitoring programme shall be undertaken every 6 months: (a) At least 12 months prior to construction commencing, to allow for two baseline surveys to be undertaken; (b) During construction; and (c) For a maximum of 3 years following completion of the Project, or for a lesser time if the monitoring indicates no significant effects, as agreed with the Auckland Council.
M.4.	The marine benthic habitat monitoring programme shall be undertaken in accordance with the details set out in the ECOMP and include: (a) Sampling of the marine invertebrate community composition (collection of sediment cores to a depth of approximately 15cm); (b) Sampling of the sediment surface (top 2cm) for sediment grain size; and (c) Sampling of the sediment surface (top 2cm) for sediment quality (analysis of the concentration of copper, lead, zinc and polycyclic aromatic hydrocarbons).

Proposed Marine Ecology (M) Conditions

M.5.	The marine benthic habitat monitoring shall be undertaken within sampling grids (50m x 30m) broadly established at the following locations: (a) Two locations within Oakley Inlet; (b) Four locations within Waterview Estuary; and (c) Four locations north of the Causeway. Specific locations and experimental design shall be detailed in the ECOMP, and the design of the monitoring programme will be based on the *Estuarine Environmental Assessment and Monitoring: A National Protocol (Cawthron 2002)*.
M.6.	The NZTA shall undertake additional marine habitat monitoring in the event of a 'trigger event' for marine ecology habitats. For the purposes of this consent, a 'trigger event' for marine ecology habitats is defined in the ECOMP.
M.7.	The NZTA shall review the marine habitat monitoring results (pursuant to Conditions M.3 to M.6) and in the event that potential adverse effects are identified, the NZTA shall develop and implement appropriate contingency plans and/or remedial measures.
M.8.	The marine benthic habitat monitoring results shall be compiled by the NZTA, and a report provided to the Auckland Council annually.
M.9.	The NZTA shall undertake planting within the rock revetment of the reclamation along the alignment of SH16 where practicable, in places where such plantings will be sheltered from erosion and in such a way that they will not undermine the structural integrity of the revetment. Any such planting will be in general accordance with the Urban Design and Landscape Plans (Plan Set F.16) submitted with this application (Refer Schedule A, Row 17).
M.10.	The NZTA shall maintain the coastal marine area free of any gross litter, rubbish and debris ~~generated from~~ during construction ~~activities~~.
M.11.	Prior to excavation of sediment from the marine habitat remediation zone (MHRZ), mangrove vegetation will be removed from the sediment and disposed of at an appropriate offsite facility. The excavated sediment shall be stockpiled within an adjacent dry working area. When the sediment is returned to the MHRZ it will be levelled out to tie in with the existing mudflat. Where a routine marine benthic habitat monitoring site is within an area of MHRZ, additional monitoring of the depth of sediment overlying the improved ground/ mudcrete will also be undertaken.
M.12.	The NZTA shall ~~will~~ minimise the extent of the Causeway footprint to the greatest extent possible.

Schedule A – Waterview Connection Project Drawings and Plans

This is a schedule of all plans concerning the Project, including as to revisions, with notes about where the latter are to be found. This schedule is based upon *Part F – Plans and Drawings* of the application documentation and any plan or drawing that is referred to in the proposed conditions.

Where a cell in the location column is blank this indicates that the drawing remains unrevised and the same as found in Part F – Plans and Drawings in the application documentation lodged on 20 August 2010.

Row	Plan Title	Plan Number	Revision History	Location
1	F.0 – Notice of Requirements Plans	20.1.11-3-D-G-900-100 to 119	Rev B	
2	F.1 – Designation Plans	20.1.11-3-D-G-901-100 to 119	Rev B	
3	F.2 – Operation Scheme Plans	20.1.11-3-D-N-910-101 to 108	Rev D	
		20.1.11-3-D-N-910-100, 109 to 112, 114, 116, 118, 119	Rev F	
		20.1.11-3-D-N-910-113, 115, 117	Rev G[1]	Annexure A and F of Rebuttal Evidence 2 – Andre Walter
4	F.3 – Long Sections	20.1.11-3-D-C-102-131 to 134, 411 to 413	Rev B	
		20.1.11-3-D-C-102-301 to 304, 401 to 403, 411 to 413	Rev C	
5	F.4 – Cross Sections	20.1.11-3-D-C-101-201 to 205	Rev B	
		20.1.11-3-D-C-301-305	Rev C	
6	F.5 – Construction Scheme Plans (includes Accessible Open Space in Sector 9 During Construction Plan)	20.1.11-3-D-C-912-100	Rev A	
		20.1.11-3-D-C-912-101 to 112 and 114 to 119	Rev D	
		20.1.11-3-D-C-912-113	Rev E	Annexure G of Supplementary Evidence 2 – Amelia Linzey
		20.1.11-3-D-N-912-220	Rev A	Annexure H of Supplementary Evidence 2 – Amelia Linzey

[1] Revision F is located in Part F – Plans and Drawings

Schedule A – Waterview Connection Project Drawings and Plans

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Row	Plan Title	Plan Number	Revision History	Location
7	F.6 – Construction Yard Plans	20.1.11-3-D-C-913-100	Rev A	
		20.1.11-3-D-C-913-101 to 105 and 107 to 112	Rev B	
		20.1.11-3-D-C-913-106	Rev C	Annexure G of Supplementary Evidence 2 – Amelia Linzey
8	F.7 – Rail Alignment	20.1.11-3-D-C-170-117 to 119	Rev B	
9	F.8 – Plans of Structures and Architectural Features	20.1.11-D-N-919-471, 480, 800;	Rev A	
		20.1.11-D-N-917-910	Rev A	
		20.1.11-D-N-919-410 to 411	Rev A	These plans relating to the north and south vent building are superseded by Drawings 1-15 (Rev A) in Annexure A of Evidence In Chief 27 – David Gibbs
		20.1.11-D-N-919-420, 421, 422 20.1.11-D-S-917-410, 420	Rev B	
		20.1.11-D-S-917-400, 430, 431, 460, 480	Rev B	
		20.1.11-D-N-919-210, 220, 230, 600, 700, 430,431	Rev B	
		20.1.11-D-N-917-470	Rev B	Withdrawn
		20.1.11-D-N-917-210, 220, 221, 230, 231, 250, 251,	Rev C	
10	F.9 – Oakley Inlet Heritage Plan	20.1.11-3-D-C-914-109 20.1.11-3-D-4-810-224	Rev B	
		20.1.11-3-D-C-914-209	Rev B	Annexure E of Supplementary Evidence 2 – Amelia Linzey.

Schedule A – Waterview Connection Project Drawings and Plans

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Row	Plan Title	Plan Number	Revision History	Location
11	F.10 – Geological Profile	20.1.11-3-D-J-200-326 to 337	Rev B	
12	F.11 – Lighting Plans	20.1.11-3-D-C-161-100 20.1.11-3-D-E-161-101 to 108 20.1.11-3-D-C-161-109 to 119	Rev B	
13	F.12 – CMA Permanent Occupation Plans	20.1.11-3-D-N-941-100 to 109	Rev B	
14	F.13 – CMA Temporary Occupation	20.1.11-3-D-N-942-100 to 109	Rev B	
15	F.14 – Streamworks and Stormwater (SW) Discharges	20.1.11-3-D-N-931-100, 101, 111, 117 to 119, 301	Rev B	
16	F.15 – Coastal Discharges	20.1.11-3-D-N-943-100, 101, 103 to 106, 109	Rev A	
		20.1.11-3-D-N-943-301	Rev B	
17	F.16 – Urban Design & Landscape Plans	20.1.11-3-D-L-810-201 to 209	Rev C	
		20.1.11-3-D-L-810-200, 214 to 216, 226 to 228	Rev B	
		20.1.11-3-D-L-810-210-213, 217-224, 229	Rev C[2]	Annexure A and B of Rebuttal Evidence 26 – Lynne Hancock
		20.1.11-3-D-L-810-210	Rev B	Withdrawn – related to NOR6
18	F.17 – Noise Walls / Mitigation	20.1.11-3-D-N-918-100 to 103, 108 to 111, 113, 117 to 119	Rev B	
19	F.18 – Reclamation Extent	20.1.11-3-D-C-520-100, 101, 103 to 108	Rev B	

[2] Revision B is located in Part F – Plans and Drawings.

Schedule A – Waterview Connection Project Drawings and Plans

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Row	Plan Title	Plan Number	Revision History	Location
20	F.19 – Lane Marking & Sign Location	20.1.11-3-D-C-915-100	Rev A	
		20.1.11-3-D-C-915-101 to 119	Rev B	
21	F.20 – Cycleway Overview	20.1.11-3-D-N-916-140 to 144	Rev B	
22	PT & Active Mode Transport Routes Existing & Proposed	20.1.11-3-D-N-903-100 to 119	Rev C	Served to the Board of Inquiry on 28 January 2011
23	Operational Storm water and Stream works concept design drawings	20.1.11-3-D-D-300-100 to 119	Rev B	Appendix A of Technical Report G.15 *Assessment of Storm water and Stream works Effects*
		20.1.11-3-D-D-310-211 to 214	Rev B	
		20.1.11-3-D-D-317-201 to 202	Rev B	
		20.1.11-3-D-D-330-201 to 202	Rev B	
		20.1.11-3-D-D-330-211 to 219	Rev A	
		20.1.11-3-D-D-340-201, 304 to 306	Rev B	
		20.1.11-3-D-D-341-201 to 202	Rev B	
		20.1.11-3-D-D-345-221, 231	Rev B	
		20.1.11-3-D-D-346-210, 203, 204	Rev B	
		20.1.11-3-D-D-349-201,203, 204, 211, 213, 214	Rev B	
		20.1.11-3-D-D-349-215 to 216	Rev A	
		20.1.11-3-D-S-635-200	Rev B	

Schedule A – Waterview Connection Project Drawings and Plans

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Row	Plan Title	Plan Number	Revision History	Location
24	Construction Storm water and Stream works concept design drawings	20.1.11-3-D-D-350-100 to 119	Rev B	
		20.1.11-3-D-D-350-220 to 201	Rev A	
		20.1.11-3-D-D-360-201,301	Rev B	
		20.1.11-3-D-D-365-211,212	Rev B	
		20.1.11-3-D-D-150-301 to 303	Rev A	
25	Significant and Valued Vegetation	Figures 3A to 3E	–	Pages 9-13 of Technical Report G.17 *Assessment of Terrestrial Vegetation Effects*
26	Total Estimated Settlement – Tunnels and Approaches	Figure E14	Rev 4[3]	Annexure A of Rebuttal Evidence 13- Gavin Alexander
27	Settlement – Building Damage Categories	Figure G1 – G4	–	Appendix G of Technical Report G.13 *Assessment of Ground Settlement Effects*
28	Proposed Open Space Impacts and Replacement	GIS-3814238-23	Rev 2[4]	Annexure C of Rebuttal 33 – Amelia Linzey. Shows the 20m esplanade reserve replacement at Oakley Creek (Sector 5 and Sector 9)
29	Parcels Subject to Reserves Act in Alan Wood Reserve	GIS-3814238-47	–	Annexure D of Supplementary Evidence 2 – Amelia Linzey.

[3] Revision 3 is located in Appendix E of Technical Report
[4] Revision 1 is located in Appendix E.4 of Part E Appendices of the application documents

Schedule A – Waterview Connection Project Drawings and Plans

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Row	Plan Title	Plan Number	Revision History	Location
30	Open Space Restoration Plan Areas (OS.2)	*Pending*		