

EPA 10/2.026 – (ARC: 38330)

This document has been prepared in compliance with conditions of the “*Final Report and Decision of the Board of Inquiry into the New Zealand Transport Agency Waterview Connection Proposal, Volume 2, Conditions of Consent*”. Schedule B of Volume 2 identifies the Conditions relevant to this Consent by the code and number as referenced throughout this document. In the event of dispute, Schedule B of Volume 2 shall take precedence over this Consent.

Type: Water Permit

Description: **Diversion of Water Other than Open Coastal Water (Sector 9):**

Structures for the road diverting the water flows of a floodplain and associated diversion and deposition of material in Sector 9.

Duration: 35 years

Code: RC = Standard Resource Consent Conditions

STW = Streamworks Conditions

F = Freshwater Conditions

GENERAL CONDITIONS

- 1) RC.1 Except as modified by the conditions below, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Agency (NZTA), in the resource consent applications and the supporting documents (as detailed in Condition DC.1), and in the supplementary information provided in evidence by the NZTA.
- 2) RC.1A The NZTA shall implement the conditions of these consents in accordance with Schedule B, which sets out the Conditions that are to be applied to each consent including the duration of each consent.
- 3) RC.2 The Conditions of these consents may be reviewed by the Major Infrastructure Team 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, on the one year anniversary of the commencement of the consents 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.
- 4) RC.4 Any Management Plans submitted to the Major Infrastructure Team Manager, 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.
- 5) RC.5 In the event of any dispute, disagreement or inaction arising as to any Auckland Council Manager certification/ approvals required by the consent conditions, or as to the implementation of or monitoring required by the 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.

Advice note: The dispute resolution process provided for in this condition does not prejudice any party's right to take enforcement action in relation to the implementation of the designation conditions. However, the dispute resolution process will be applied before any formal enforcement action is taken by the Council except in urgent situations.

- 6) RC.6 Pursuant to Section 36(1)(d) of the RMA, the requiring authority is required to pay to Auckland Council any administrative charge for the carrying out by the local authority of its functions in relation to the administration, monitoring, and supervision of designation conditions.
- 7) RC.7 The servants of agents of Auckland Council shall be permitted to have access to relevant parts of the Project at all reasonable times for the purpose of carrying out inspections, investigations, tests, measurements and/or to take samples.
- 8) STW.31 Design of flood defences for the southern portal shall be in accordance with the catchment management option preferred by Auckland Council with allowances for climate change, sea-level rise and Maximum Probable Development.

PRE-CONSTRUCTION CONDITIONS

- 9) RC.3 Within 3 months of the resource consents commencing for the Project (or at least 1 month prior to any Auckland Council approvals or certifications required by these Conditions, whichever is the earlier), the NZTA shall update and finalise to the satisfaction of the Major Infrastructure Team Manager, Auckland Council all drawings and Plans cited in Schedule A, together with a full set of the information and documentation referred to in Condition DC.1 and provide these to the Major Infrastructure Team Manager, Auckland Council. At the same time the NZTA shall prepare to the satisfaction of Auckland Council, a document for each resource consent which sets out the resource consent and have attached to it in text format a comprehensive set of the conditions imposed by the Board of Inquiry in its Final Decision as summarised in Schedule B, inclusive of any standard conditions and advice notes.
In particular (but not limited to), the following Plans will need to be amended in light of the Final Conditions:
 - (a) F.2 Operational Scheme Plans (refer Schedule A, Row 3) require amendment detailing the amended location of the ventilation stacks and southern ventilation buildings;
 - (b) F.5 Construction Scheme Plans (refer Schedule A, Row 4) require amendment to detail changes to construction footprint for the amended location of ventilation stacks and southern ventilation buildings and reconfiguration of Construction Yard 1);
 - (c) F.6 Construction Yard Plans 101 and 107 (refer Schedule A, Row 7), detailing amendments to the Construction Yard 1 in light of the reconfiguration of this Yard and for Construction Yard 7 in light of the relocation of the northern ventilation stack (refer Schedule A, Row 34);
 - (d) F.8 Plans of Structures and Architectural Features (refer Schedule A, Row 9), detailing the amended location of the Northern Ventilation Stack and the design and location of the Southern Ventilation Building and Stack;

- (e) The CNVMP (including flow diagram and the supplementary evidence produced by Ms Wilkening) (refer Schedule A, Rows 36, 37 and 39);
 - (f) Update to the areas of the Open Space Restoration Plans (Schedule A, Row 30) to:
 - (i) Extend these areas in geographic extent to provide for the works identified in the Management Plan notations identified in the OS Conditions (in particular OS.5 and OS.6). (e.g. these areas will (as relevant) include Eric Armishaw Park, Howlett Reserve and Waterview Esplanade Reserve); and
 - (ii) Exclude the operational area of designation required for the northern ventilation stack (as identified through the OPW process (refer Condition DC.8); and
 - (g) Schedule A, Row 28 the Plan detailing proposed open space impacts and replacements needs to be updated to recolour the two land parcels on Hendon Avenue (which are excluded from the replacement calculations) to 'brown' to confirm they are part of the operational impact and will not be returned as open space.
- 10) STW.2 Any future amendments that may affect the performance of the streamworks shall be approved by the Major Infrastructure Team Manager, Auckland Council in writing, prior to construction. Any amendments to the design shall be in accordance with the Western Ring Route: Oakley Creek Re-alignment and Rehabilitation Guidelines (Boffa Miskell, 2010), appended to Technical Report G.6 Assessment of Freshwater Ecological Effects.
 - 11) STW.3 The NZTA shall inform the Major Infrastructure Team Manager, 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.
 - 12) 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.
 - 13) STW.5 At least 20 working days 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 Major Infrastructure Team Manager, 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 freshwater habitat improvement and riparian planting;
 - (b) Construction erosion and sediment control plans (ESCP).
 - 14) STW.6 The NZTA shall forward a detailed construction programme and methodology to the Major Infrastructure Team Manager, 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.
 - 15) STW.16 The NZTA shall obtain approval of the constructed stream realignment works from the Major Infrastructure Team Manager, Auckland Council at least 20 working days prior to diversion of Oakley Creek into the new channel.
 - 16) STW.29 Any amendments to works by the NZTA in the floodplain that may increase the flooding effects shall be submitted to the Major Infrastructure Team Manager, 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.

CONSTRUCTION CONDITIONS

- 17) STW.1 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, appended to *Technical Report G.6 Assessment of Freshwater Ecological Effects*.
- 18) STW.7 No streamworks shall be undertaken between 1 May and 30 September unless written approval has been obtained from the Major Infrastructure Team Manager, Auckland Council. Any such approval shall be sought at least 10 working days prior to the proposed commencement of the works.
- 19) 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.
- 20) STW.9 The site shall be stabilised against erosion as soon as practicable and in a progressive manner as streamworks are finished.
- 21) STW.10 All uncompacted material shall be kept clear of the channel during and after streamworks.
- 22) 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).
- 23) 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.
- 24) 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.
- 25) 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.
- 26) STW.27 Works in the floodplain (including motorway embankments, ancillary earthworks and streamworks) shall be in accordance with the final design of the streamworks approved by the Major Infrastructure Team Manager, Auckland Council (as per Conditions STW.5 and STW.29) and 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*.

POST-CONSTRUCTION CONDITIONS

- 27) SWT.28 Within three months of completion of the works, the NZTA shall submit to the Major Infrastructure Team Manager, 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.
- 28) SWT.30 The NZTA shall submit to the Major Infrastructure Team Manager, 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.

MONITORING

- 29) SWT.15 The design engineer and Project ecologist shall monitor the construction of the streamworks. The NZTA shall submit to the Major Infrastructure Team Manager, 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 three months of completion of the streamworks.
- 30) F.5 The NZTAs ecologist/hydrologist (required by condition F.2) shall review, every six months, 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, including through review of the Condition G.10 monitoring results by the hydrologist and freshwater ecologist required by Condition G.12, the NZTA shall develop and submit for the approval of the Major Infrastructure Team Manager, Auckland Council appropriate contingency plans and/or remedial measures in accordance with the measures set out in the ECOMP.

EPA 10/2.027 – (ARC: 38331)

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Type: Water Permit

Description: **Taking and Use of Groundwater (Sectors 7 to 8):**

The taking of groundwater for the purposes of groundwater diversion during construction, under Rule 6.5.69.

Duration: 10 years

Code: RC = Standard Resource Consent Conditions

CEMP = Construction Environmental Management Plan Conditions

PI = Public Information Conditions

S = Ground Settlement Conditions

G = Groundwater Conditions

F = Freshwater Conditions

GENERAL CONDITIONS

- 1) RC.1 Except as modified by the conditions below, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Agency (NZTA), in the resource consent applications and the supporting documents (as detailed in Condition DC.1), and in the supplementary information provided in evidence by the NZTA.
- 2) RC.1A The NZTA shall implement the conditions of these consents in accordance with Schedule B, which sets out the Conditions that are to be applied to each consent including the duration of each consent.
- 3) RC.2 The Conditions of these consents may be reviewed by the Major Infrastructure Team 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, on the one year anniversary of the commencement of the consents 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.
- 4) RC.4 Any Management Plans submitted to the Major Infrastructure Team Manager, 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.
- 5) RC.5 In the event of any dispute, disagreement or inaction arising as to any Auckland Council Manager certification/ approvals required by the consent conditions, or as to the

implementation of or monitoring required by the 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.

Advice note: The dispute resolution process provided for in this condition does not prejudice any party's right to take enforcement action in relation to the implementation of the designation conditions. However, the dispute resolution process will be applied before any formal enforcement action is taken by the Council except in urgent situations.

- 6) RC.6 Pursuant to Section 36(1)(d) of the RMA, the requiring authority is required to pay to Auckland Council any administrative charge for the carrying out by the local authority of its functions in relation to the administration, monitoring, and supervision of designation conditions.
- 7) RC.7 The servants of agents of Auckland Council shall be permitted to have access to relevant parts of the Project at all reasonable times for the purpose of carrying out inspections, investigations, tests, measurements and/or to take samples.

PRE-CONSTRUCTION CONDITIONS

- 8) RC.3 Within 3 months of the resource consents commencing for the Project (or at least 1 month prior to any Auckland Council approvals or certifications required by these Conditions, whichever is the earlier), the NZTA shall update and finalise to the satisfaction of the Major Infrastructure Team Manager, Auckland Council all drawings and Plans cited in Schedule A, together with a full set of the information and documentation referred to in Condition DC.1 and provide these to the Major Infrastructure Team Manager, Auckland Council. At the same time the NZTA shall prepare to the satisfaction of Auckland Council, a document for each resource consent which sets out the resource consent and have attached to it in text format a comprehensive set of the conditions imposed by the Board of Inquiry in its Final Decision as summarised in Schedule B, inclusive of any standard conditions and advice notes.

In particular (but not limited to), the following Plans will need to be amended in light of the Final Conditions:
 - (a) F.2 Operational Scheme Plans (refer Schedule A, Row 3) require amendment detailing the amended location of the ventilation stacks and southern ventilation buildings;
 - (b) F.5 Construction Scheme Plans (refer Schedule A, Row 4) require amendment to detail changes to construction footprint for the amended location of ventilation stacks and southern ventilation buildings and reconfiguration of Construction Yard 1);
 - (c) F.6 Construction Yard Plans 101 and 107 (refer Schedule A, Row 7), detailing amendments to the Construction Yard 1 in light of the reconfiguration of this Yard and for Construction Yard 7 in light of the relocation of the northern ventilation stack (refer Schedule A, Row 34);

- (d) F.8 Plans of Structures and Architectural Features (refer Schedule A, Row 9), detailing the amended location of the Northern Ventilation Stack and the design and location of the Southern Ventilation Building and Stack;
 - (e) The CNVMP (including flow diagram and the supplementary evidence produced by Ms Wilkening) (refer Schedule A, Rows 36, 37 and 39);
 - (f) Update to the areas of the Open Space Restoration Plans (Schedule A, Row 30) to:
 - (i) Extend these areas in geographic extent to provide for the works identified in the Management Plan notations identified in the OS Conditions (in particular OS.5 and OS.6). (e.g. these areas will (as relevant) include Eric Armishaw Park, Howlett Reserve and Waterview Esplanade Reserve); and
 - (ii) Exclude the operational area of designation required for the northern ventilation stack (as identified through the OPW process (refer Condition DC.8); and
 - (g) Schedule A, Row 28 the Plan detailing proposed open space impacts and replacements needs to be updated to recolour the two land parcels on Hendon Avenue (which are excluded from the replacement calculations) to 'brown' to confirm they are part of the operational impact and will not be returned as open space.
- 9) CEMP.1 Except where provided for in Condition CEMP.1A below, the NZTA shall update and finalise the draft Construction Environmental Management Plan (CEMP) including all the Management Plans which form part of the CEMP and are included as appendices, 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 Major Infrastructure Team Manager, Auckland Council for review at least 20 working days prior to the commencement of works to certify compliance and consistency with the conditions. Construction shall not commence until certification is obtained.
- 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.*
- Advice Note: Particular care must be taken with development and operation of Construction Yard 7. When the CEMP is being updated and finalised, consideration must be given to the contents of the draft SSCEMP prepared for Construction Yard 7 (Row 41, Schedule A) recognising changes required by inclusion of the ventilation stack in this yard.*
- 10) CEMP.1B For the purposes of staging works, as some works may commence well in advance of others, the NZTA may provide staged or site specific CEMPs for those works to the Major Infrastructure Team Manager, Auckland Council. The NZTA shall consult with the Team Manager about the need and timing for any other site-specific or staged CEMPs and shall provide any required site-specific or staged CEMPs to the Major Infrastructure Team Manager, Auckland Council for review at least 20 working days prior to commencement of such the specific stage (including enabling) or site works.
- 11) CEMP.2 The certification process of the CEMP (and its appendices) shall confirm that the CEMP gives effect to the relevant conditions, as well as those matters in CEMP.6, and that it includes details of:
- (a) Staff and contractors' responsibilities;
 - (b) Training requirements for employees, sub-contractors and visitors;
 - (c) Environmental incident and emergency management;
 - (d) Communication and interface procedures (in accordance with the Communication Plan required under Condition PI.2);
 - (e) Environmental complaints management (including the procedures required under

- (f) Compliance monitoring;
 - (g) Reporting (including detail on the frequency of reporting to the Auckland Council);
 - (h) Environmental auditing; and
 - (i) Corrective action.
- 12) CEMP.3 The management of key environmental effects associated with the construction phase of the Project is detailed within environmental management plans that are included in the CEMP as appendices. This suite of management plans as shown on Figure CEMP.A comprises:
- (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);
 - (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 Condition CEMP.10) ;
and
 - (o) Temporary Construction Lighting Management Plan (to be prepared in accordance with Condition L.2).
- 13) 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 the following:
- (a) Details of the site or Project manager and the 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 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

- (h) Methods to stabilise ingress and egress points to construction sites, to the standard required by ARC Technical Publication 90 (Nov 2007);
- 14) CEMP.10 The NZTA shall finalise and implement the Hazardous Substances Management Plan (HSMP), through the CEMP (as per Condition CEMP.1), submitted with this application, prior to works commencing on site. The certification process of the CEMP shall confirm that the HSMP clearly identifies the requirements for proper storage, handling, transport and disposal of hazardous substances during the construction phase of the Project and confirm that there shall be no storage of explosives on the Project site.
- 15) CEMP.11 The NZTA shall develop and implement a Waste Management Plan in accordance with the waste management principles, controls and methods set out in the CEMP. The Plan shall be provided to the Major Infrastructure Team Manager, Auckland Council and be implemented throughout the entire construction period.
- 16) PI.1 A 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 on-going consultation on all matters of concern to affected parties arising from the Project.
- 17) PI.2 The NZTA shall prepare and implement a Communications Plan that sets out procedures detailing how the public, Ministry of Social Development, Housing New Zealand Corporation and other 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 prescribed in 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 include details of:
- (a) The site or Project manager and the 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) The appointed specialist in Environmental and Occupational Medicine, including contact details (as per Condition SO.13);
 - (f) Any stakeholder specific communication plans required; and
 - (g) 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 Major Infrastructure Team Manager, Auckland Council, Working Liaison Group 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.

- 18) PI.5 The NZTA shall establish Community Liaison Group(s) at least 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 on-going monitoring information can continue to be disseminated.

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;
- (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, Star Mills Preservation Group, Cycle Action Auckland and representatives from those organisations identified in the Communications Plan (as required by Condition PI.2) and local residents;
- (d) Department of Conservation;
- (e) Local Boards;
- (f) Iwi groups with Mana Whenua;
- (g) Public transport providers; and
- (h) Housing New Zealand Corporation.

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.

- 19) 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. Prior to construction (following detailed investigation and design), the total estimated settlements and building damage categories shall be confirmed using the methodology in 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 those allowed for in Figure E.14 (refer Schedule A, Row 26)) or building damage categories increase in ranking or buildings affected from those identified in Figures G1-G4 (refer Schedule A, Row 27), 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.

- 20) 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

- (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 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.

- 21) 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);
 - (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 (as per Unitec Site Plan in Schedule A, Row 31);
 - (e) 1510 Great North 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);
 - (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.
- 22) S.8 The NZTA shall consult with owners of buildings and structures identified in Condition S.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.
- 23) 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 and S.12 and identify this person in the SEMP.
- 24) 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 undertaking additional CCTV surveys throughout the construction period. If any damage is determined in relation to the Project, the NZTA shall undertake any remedial action as required in consultation with the service provider.

- 25) G.1 The NZTA shall finalise, and implement through the CEMP, the Groundwater Management Plan (GWMP), submitted with this application prior to commencement of construction dewatering.

It shall include but is not 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 continuous monitoring stations on Oakley Creek;
- (e) The methods and frequency for groundwater monitoring;
- (f) The groundwater trigger levels;
- (g) Procedures to follow in the event of trigger levels being exceeded;
- (h) Reporting requirements.

The NZTA shall submit the GWMP to the Auckland Council one month prior to commencement of construction dewatering for written approval of the Major Infrastructure Team Manager, Auckland Council.

CONSTRUCTION CONDITIONS

- 26) CEMP.4 The CEMP shall be implemented and maintained throughout the entire construction period.
- 27) CEMP.5 A copy of the CEMP shall be held on each construction site at all times and be available for inspection on request by the Auckland Council.

- 28) 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, provided annually to the Major Infrastructure Team Manager, Auckland Council and made available (with any related data) to the Auckland Council upon request.

- 29) CEMP.13 Following the review process (as described in Condition CEMP.12), the CEMP may require updating. Any material change proposed to the CEMP (including appended Management Plans) shall be submitted for approval to the Major Infrastructure Team Manager, Auckland Council at least 10 working days prior to the proposed changes taking effect.'

Advice Note: Material change will include amendment to any base information informing the CEMP or any process, procedure or method of the CEMP (such as the environmental constraints map, compliance monitoring process, complaints procedure or mitigation / remedial methods identified) which has the potential to increase adverse effects on a particular value. For clarity changes to personnel and contact schedules do not constitute a

material change.

- 30) PI.3 At least 15 working days prior to the commencement of construction, and at 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, and structure-borne noise, as identified in the conditions.
- 31) 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, 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, 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
 - (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 Major Infrastructure Team Manager, Auckland Council on a quarterly basis commencing at the beginning of the works and for the entire duration of construction.
- 32) PI.6 The Community Liaison Group(s) shall be provided opportunities to review and comment on the following (amongst other things):
- (a) The Outline Plan of Works detailing designs for the northern and southern ventilation buildings and stacks (the outcomes of this consultation will be reported in accordance with the processes required in DC.8(n) and DC.9(k));
 - (b) The Open Space Restoration Plans (as required by Condition OS.3);
 - (c) Finalisation and amendment to Urban Design and Landscape Plans (UDL Plans) (as required by Condition LV.1);

- (d) The Oakley Inlet Heritage Plan (as required by Conditions OS.5(b)(i) and ARCH.6);
- (e) The detail of the Oakley Creek restoration (as required by Condition STW.20);
- (f) Publicly available results of environmental monitoring as required by the designation and/or these Consents (e.g. air quality monitoring); and
- (g) The finalisation of the STEM assessment required by CEMP.6(o) and a schedule of trees that are required to be removed for consideration of timber use in heritage projects as required by Condition SO.7.

Advice Note: Attention is drawn to the Vegetation conditions concerning identification and protection of Significant Vegetation and Valued Vegetation.

- (h) Detailed design features of the Te Atatu underpass (e.g. lighting and architectural treatment).

33) 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*.

34) 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;
- (c) 1510 Great North Road, Unitec Residential Flats (two buildings);
- (d) Waterview Primary School (pool); and
- (e) Pak ‘n’ Save Supermarket

35) G.13 Authorised Quantity: Following completion of excavation and construction, the daily quantity of groundwater diverted and taken shall not exceed 750 m³ and the annual quantity diverted and taken shall not exceed 273,750 m³.

POST-CONSTRUCTION / OPERATION CONDITIONS

36) 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 arrangements for implementation and/or compensation. 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.

- 37) G.13 Authorised Quantity: Following completion of excavation and construction, the daily quantity of groundwater diverted and taken shall not exceed 750 m³ and the annual quantity diverted and taken shall not exceed 273,750 m³.
- 38) G.14 The NZTA shall, within 10 working days of completion of tunnelling, advise the Major Infrastructure Team Manager Auckland Council, in writing, of the date of completion.

MONITORING

- 39) S.3 The NZTA shall survey the settlement monitoring markers at the following frequency:
- (a) Pre-construction
 - i) All Framework Markers – Vertical and selected horizontal at 3 monthly intervals, starting at least 12 months prior to construction commencing; and
 - ii) All Intermediate Markers - Vertical and selected horizontal 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.
- 40) S.4 Within three days of 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 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) then this shall be considered to be an 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 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.
- 41) 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.
- 42) 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.
- 43) 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;
 - (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.
- 44) 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.
- 45) 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.
- 46) 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 Major Infrastructure Team Manager, Auckland Council at three monthly intervals.
- 47) 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.
- 48) 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.

- 49) 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.
- 50) 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).
- 51) 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.
- 52) 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 Scheme Plan, Drawing No: 20.1.11-3-D-N-910-117, Schedule A, Row 3);
 - (b) Chainage 2200 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3);
 - (c) Chainage 3500 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-114, Schedule A, Row 3);
 - (d) Between Chainage 3900 to 4200 ((Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-113, Schedule A, Row 3);
- 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 Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3).
- 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.

- 53) G.11 The continuous monitoring required by Condition G.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.
- 54) 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 Major Infrastructure Team Manager, Auckland Council for peer review.
- 55) F.5 The NZTAs ecologist/hydrologist (required by condition F.2) shall review, every six months, 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, including through review of the Condition G.10 monitoring results by the hydrologist and freshwater ecologist required by Condition G.12, the NZTA shall develop and submit for the approval of the Major Infrastructure Team Manager, Auckland Council appropriate contingency plans and/or remedial measures in accordance with the measures set out in the ECOMP.

REPORTING

- 56) 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.
- 57) 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 PI.1 shall be the contact person for owner(s) subject to assessment and reporting under Conditions S.1 to S.11 and S.16 and remedial works or compensation payments under Condition S.12 and S.16.
- 58) 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.

EPA 10/2.028 – (ARC: 38332)

This document has been prepared in compliance with conditions of the “*Final Report and Decision of the Board of Inquiry into the New Zealand Transport Agency Waterview Connection Proposal, Volume 2, Conditions of Consent*”. Schedule B of Volume 2 identifies the Conditions relevant to this Consent by the code and number as referenced throughout this document. In the event of dispute, Schedule B of Volume 2 shall take precedence over this Consent.

Type: Water Permit

Description: **Taking and Use of Groundwater (Sectors 7 to 8):**

The taking of groundwater for the purposes of groundwater diversion – operation, under Rule 6.5.69.

Duration: 35 years

Code: RC = Standard Resource Consent Conditions

S = Ground Settlement Conditions

G = Groundwater Conditions

GENERAL CONDITIONS

- 1) RC.1 Except as modified by the conditions below, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Agency (NZTA), in the resource consent applications and the supporting documents (as detailed in Condition DC.1), and in the supplementary information provided in evidence by the NZTA.
- 2) RC.1A The NZTA shall implement the conditions of these consents in accordance with Schedule B, which sets out the Conditions that are to be applied to each consent including the duration of each consent.
- 3) RC.2 The Conditions of these consents may be reviewed by the Major Infrastructure Team 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, on the one year anniversary of the commencement of the consents 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.
- 4) RC.4 Any Management Plans submitted to the Major Infrastructure Team Manager, 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.
- 5) RC.5 In the event of any dispute, disagreement or inaction arising as to any Auckland Council Manager certification/ approvals required by the consent conditions, or as to the implementation of or monitoring required by the 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.

Advice note: The dispute resolution process provided for in this condition does not prejudice any party's right to take enforcement action in relation to the implementation of the designation conditions. However, the dispute resolution process will be applied before any formal enforcement action is taken by the Council except in urgent situations.

- 6) RC.6 Pursuant to Section 36(1)(d) of the RMA, the requiring authority is required to pay to Auckland Council any administrative charge for the carrying out by the local authority of its functions in relation to the administration, monitoring, and supervision of designation conditions.
- 7) RC.7 The servants of agents of Auckland Council shall be permitted to have access to relevant parts of the Project at all reasonable times for the purpose of carrying out inspections, investigations, tests, measurements and/or to take samples.

PRE-CONSTRUCTION CONDITIONS

- 8) RC.3 Within 3 months of the resource consents commencing for the Project (or at least 1 month prior to any Auckland Council approvals or certifications required by these Conditions, whichever is the earlier), the NZTA shall update and finalise to the satisfaction of the Major Infrastructure Team Manager, Auckland Council all drawings and Plans cited in Schedule A, together with a full set of the information and documentation referred to in Condition DC.1 and provide these to the Major Infrastructure Team Manager, Auckland Council. At the same time the NZTA shall prepare to the satisfaction of Auckland Council, a document for each resource consent which sets out the resource consent and have attached to it in text format a comprehensive set of the conditions imposed by the Board of Inquiry in its Final Decision as summarised in Schedule B, inclusive of any standard conditions and advice notes.

In particular (but not limited to), the following Plans will need to be amended in light of the Final Conditions:

- (a) F.2 Operational Scheme Plans (refer Schedule A, Row 3) require amendment detailing the amended location of the ventilation stacks and southern ventilation buildings;
- (b) F.5 Construction Scheme Plans (refer Schedule A, Row 4) require amendment to detail changes to construction footprint for the amended location of ventilation stacks and southern ventilation buildings and reconfiguration of Construction Yard 1);
- (c) F.6 Construction Yard Plans 101 and 107 (refer Schedule A, Row 7), detailing amendments to the Construction Yard 1 in light of the reconfiguration of this Yard and for Construction Yard 7 in light of the relocation of the northern ventilation stack (refer Schedule A, Row 34);
- (d) F.8 Plans of Structures and Architectural Features (refer Schedule A, Row 9), detailing the amended location of the Northern Ventilation Stack and the design and location of the Southern Ventilation Building and Stack;

- (e) The CNVMP (including flow diagram and the supplementary evidence produced by Ms Wilkening) (refer Schedule A, Rows 36, 37 and 39);
- (f) Update to the areas of the Open Space Restoration Plans (Schedule A, Row 30) to:
 - (i) Extend these areas in geographic extent to provide for the works identified in the Management Plan notations identified in the OS Conditions (in particular OS.5 and OS.6). (e.g. these areas will (as relevant) include Eric Armishaw Park, Howlett Reserve and Waterview Esplanade Reserve); and
 - (ii) Exclude the operational area of designation required for the northern ventilation stack (as identified through the OPW process (refer Condition DC.8); and
- (g) Schedule A, Row 28 the Plan detailing proposed open space impacts and replacements needs to be updated to recolour the two land parcels on Hendon Avenue (which are excluded from the replacement calculations) to 'brown' to confirm they are part of the operational impact and will not be returned as open space.

- 9) 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. Prior to construction (following detailed investigation and design), the total estimated settlements and building damage categories shall be confirmed using the methodology in 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 those allowed for in Figure E.14 (refer Schedule A, Row 26)) or building damage categories increase in ranking or buildings affected from those identified in Figures G1-G4 (refer Schedule A, Row 27), 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.

- 10) 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, Row 26).
- (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 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.

- 11) 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);
 - (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 (as per Unitec Site Plan in Schedule A, Row 31);
 - (e) 1510 Great North 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);
 - (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.
- 12) S.8 The NZTA shall consult with owners of buildings and structures identified in Condition S.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.
- 13) 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 and S.12 and identify this person in the SEMP.
- 14) 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 undertaking additional CCTV surveys throughout the construction period. If any damage is determined in relation to the Project, the NZTA shall undertake any remedial action as required in consultation with the service provider.
- 15) G.1 The NZTA shall finalise, and implement through the CEMP, the Groundwater Management Plan (GWMP), submitted with this application prior to commencement of construction dewatering.
- It shall include but is not 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 continuous monitoring stations on Oakley Creek;
 - (e) The methods and frequency for groundwater monitoring;
 - (f) The groundwater trigger levels;
 - (g) Procedures to follow in the event of trigger levels being exceeded;
 - (h) Reporting requirements.
- The NZTA shall submit the GWMP to the Auckland Council one month prior to

commencement of construction dewatering for written approval of the Major Infrastructure Team Manager, Auckland Council.

CONSTRUCTION CONDITIONS

- 16) 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*.
- 17) 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;
 - (c) 1510 Great North Road, Unitec Residential Flats (two buildings);
 - (d) Waterview Primary School (pool); and
 - (e) Pak ‘n’ Save Supermarket

POST-CONSTRUCTION / OPERATION CONDITIONS

- 18) 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 arrangements for implementation and/or compensation. 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.
- 19) G.13 **Authorised Quantity:** Following completion of excavation and construction, the daily quantity of groundwater diverted and taken shall not exceed 750 m³ and the annual quantity diverted and taken shall not exceed 273,750 m³.
- 20) G.14 The NZTA shall, within 10 working days of completion of tunnelling, advise the Major Infrastructure Team Manager Auckland Council, in writing, of the date of completion.

MONITORING

- 21) S.3 The NZTA shall survey the settlement monitoring markers at the following frequency:
- (a) Pre-construction
 - i) All Framework Markers – Vertical and selected horizontal at 3 monthly intervals, starting at least 12 months prior to construction commencing; and
 - ii) All Intermediate Markers - Vertical and selected horizontal 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.
- 22) S.4 Within three days of 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 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) then this shall be considered to be an 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 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.
- 23) 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.
- 24) 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.

- 25) 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;
 - (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.

- 26) 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.

- 27) 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.

- 28) 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 Major Infrastructure Team Manager, Auckland Council at three monthly intervals.

- 29) 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.

- 30) 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.

- 31) 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.
- 32) 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).
- 33) 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.
- 34) 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 Scheme Plan, Drawing No: 20.1.11-3-D-N-910-117, Schedule A, Row 3);
 - (b) Chainage 2200 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3);
 - (c) Chainage 3500 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-114, Schedule A, Row 3);
 - (d) Between Chainage 3900 to 4200 ((Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-113, Schedule A, Row 3);
- 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 Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3).
- 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.
- 35) G.11 The continuous monitoring required by Condition G.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.

- 36) 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 Major Infrastructure Team Manager, Auckland Council for peer review.

REPORTING

- 37) 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.

- 38) 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 PI.1 shall be the contact person for owner(s) subject to assessment and reporting under Conditions S.1 to S.11 and S.16 and remedial works or compensation payments under Condition S.12 and S.16.

- 39) 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.

EPA 10/2.029 – (ARC: 38333)

This document has been prepared in compliance with conditions of the “*Final Report and Decision of the Board of Inquiry into the New Zealand Transport Agency Waterview Connection Proposal, Volume 2, Conditions of Consent*”. Schedule B of Volume 2 identifies the Conditions relevant to this Consent by the code and number as referenced throughout this document. In the event of dispute, Schedule B of Volume 2 shall take precedence over this Consent.

Type:	Water Permit
Description:	Diversion of Groundwater (Sectors 7 to 8): Diversion of groundwater for the tunnel (taking of groundwater for disposal).
Duration:	35 years
Code:	RC = Standard Resource Consent Conditions S = Ground Settlement Conditions G = Groundwater Conditions

GENERAL CONDITIONS

- 1) RC.1 Except as modified by the conditions below, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Agency (NZTA), in the resource consent applications and the supporting documents (as detailed in Condition DC.1), and in the supplementary information provided in evidence by the NZTA.
- 2) RC.1A The NZTA shall implement the conditions of these consents in accordance with Schedule B, which sets out the Conditions that are to be applied to each consent including the duration of each consent.
- 3) RC.2 The Conditions of these consents may be reviewed by the Major Infrastructure Team 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, on the one year anniversary of the commencement of the consents 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.
- 4) RC.4 Any Management Plans submitted to the Major Infrastructure Team Manager, 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.
- 5) RC.5 In the event of any dispute, disagreement or inaction arising as to any Auckland Council Manager certification/ approvals required by the consent conditions, or as to the implementation of or monitoring required by the 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.

Advice note: The dispute resolution process provided for in this condition does not prejudice any party's right to take enforcement action in relation to the implementation of the designation conditions. However, the dispute resolution process will be applied before any formal enforcement action is taken by the Council except in urgent situations.

- 6) RC.6 Pursuant to Section 36(1)(d) of the RMA, the requiring authority is required to pay to Auckland Council any administrative charge for the carrying out by the local authority of its functions in relation to the administration, monitoring, and supervision of designation conditions.
- 7) RC.7 The servants of agents of Auckland Council shall be permitted to have access to relevant parts of the Project at all reasonable times for the purpose of carrying out inspections, investigations, tests, measurements and/or to take samples.

PRE-CONSTRUCTION CONDITIONS

- 8) RC.3 Within 3 months of the resource consents commencing for the Project (or at least 1 month prior to any Auckland Council approvals or certifications required by these Conditions, whichever is the earlier), the NZTA shall update and finalise to the satisfaction of the Major Infrastructure Team Manager, Auckland Council all drawings and Plans cited in Schedule A, together with a full set of the information and documentation referred to in Condition DC.1 and provide these to the Major Infrastructure Team Manager, Auckland Council. At the same time the NZTA shall prepare to the satisfaction of Auckland Council, a document for each resource consent which sets out the resource consent and have attached to it in text format a comprehensive set of the conditions imposed by the Board of Inquiry in its Final Decision as summarised in Schedule B, inclusive of any standard conditions and advice notes.

In particular (but not limited to), the following Plans will need to be amended in light of the Final Conditions:

- (a) F.2 Operational Scheme Plans (refer Schedule A, Row 3) require amendment detailing the amended location of the ventilation stacks and southern ventilation buildings;
- (b) F.5 Construction Scheme Plans (refer Schedule A, Row 4) require amendment to detail changes to construction footprint for the amended location of ventilation stacks and southern ventilation buildings and reconfiguration of Construction Yard 1);
- (c) F.6 Construction Yard Plans 101 and 107 (refer Schedule A, Row 7), detailing amendments to the Construction Yard 1 in light of the reconfiguration of this Yard and for Construction Yard 7 in light of the relocation of the northern ventilation stack (refer Schedule A, Row 34);
- (d) F.8 Plans of Structures and Architectural Features (refer Schedule A, Row 9), detailing the amended location of the Northern Ventilation Stack and the design and location of the Southern Ventilation Building and Stack;

- (e) The CNVMP (including flow diagram and the supplementary evidence produced by Ms Wilkening) (refer Schedule A, Rows 36, 37 and 39);
 - (f) Update to the areas of the Open Space Restoration Plans (Schedule A, Row 30) to:
 - (i) Extend these areas in geographic extent to provide for the works identified in the Management Plan notations identified in the OS Conditions (in particular OS.5 and OS.6). (e.g. these areas will (as relevant) include Eric Armishaw Park, Howlett Reserve and Waterview Esplanade Reserve); and
 - (ii) Exclude the operational area of designation required for the northern ventilation stack (as identified through the OPW process (refer Condition DC.8); and
 - (g) Schedule A, Row 28 the Plan detailing proposed open space impacts and replacements needs to be updated to recolour the two land parcels on Hendon Avenue (which are excluded from the replacement calculations) to 'brown' to confirm they are part of the operational impact and will not be returned as open space.
- 9) 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. Prior to construction (following detailed investigation and design), the total estimated settlements and building damage categories shall be confirmed using the methodology in 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 those allowed for in Figure E.14 (refer Schedule A, Row 26)) or building damage categories increase in ranking or buildings affected from those identified in Figures G1-G4 (refer Schedule A, Row 27), 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.
- 10) 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, Row 26).
 - (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 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.
- 11) 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);
 - (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 (as per Unitec Site Plan in Schedule A, Row 31);
 - (e) 1510 Great North 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);
 - (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.
- 12) S.8 The NZTA shall consult with owners of buildings and structures identified in Condition S.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.
- 13) 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 and S.12 and identify this person in the SEMP.
- 14) 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 undertaking additional CCTV surveys throughout the construction period. If any damage is determined in relation to the Project, the NZTA shall undertake any remedial action as required in consultation with the service provider.
- 15) G.1 The NZTA shall finalise, and implement through the CEMP, the Groundwater Management Plan (GWMP), submitted with this application prior to commencement of construction dewatering.
- It shall include but is not 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 continuous monitoring stations on Oakley Creek;
 - (e) The methods and frequency for groundwater monitoring;
 - (f) The groundwater trigger levels;
 - (g) Procedures to follow in the event of trigger levels being exceeded;
 - (h) Reporting requirements.
- The NZTA shall submit the GWMP to the Auckland Council one month prior to

commencement of construction dewatering for written approval of the Major Infrastructure Team Manager, Auckland Council.

CONSTRUCTION CONDITIONS

- 16) 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*.
- 17) 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;
 - (c) 1510 Great North Road, Unitec Residential Flats (two buildings);
 - (d) Waterview Primary School (pool); and
 - (e) Pak ‘n’ Save Supermarket

POST-CONSTRUCTION / OPERATION CONDITIONS

- 18) 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 arrangements for implementation and/or compensation. 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.
- 19) G.13 Authorised Quantity: Following completion of excavation and construction, the daily quantity of groundwater diverted and taken shall not exceed 750 m³ and the annual quantity diverted and taken shall not exceed 273,750 m³.
- 20) G.14 The NZTA shall, within 10 working days of completion of tunnelling, advise the Major Infrastructure Team Manager Auckland Council, in writing, of the date of completion.

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 - i) All Framework Markers – Vertical and selected horizontal at 3 monthly intervals, starting at least 12 months prior to construction commencing; and
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 - 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.
- 22) S.4 Within three days of 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 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) then this shall be considered to be an 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 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.
- 23) 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.
- 24) 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.

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- (a) 14H and 14J Cradock Street
 - (b) 34 Cradock Street
 - (c) 40 Cradock Street
 - (d) 56 Powell Street;
 - (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.

- 26) 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.

- 27) 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.

- 28) 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 Major Infrastructure Team Manager, Auckland Council at three monthly intervals.

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- 30) 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.

- 31) 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.
- 32) 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).
- 33) 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.
- 34) 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 Scheme Plan, Drawing No: 20.1.11-3-D-N-910-117, Schedule A, Row 3);
 - (b) Chainage 2200 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3);
 - (c) Chainage 3500 (Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-114, Schedule A, Row 3);
 - (d) Between Chainage 3900 to 4200 ((Waterview Connection Operational Scheme Plan, Drawing No: 20.1.11-3-D-N -910-113, Schedule A, Row 3);
- 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 Scheme Plan, Drawing No: 20.1.11-3-D-N -910-116, Schedule A, Row 3).
- 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.
- 35) G.11 The continuous monitoring required by Condition G.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.

- 36) 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 Major Infrastructure Team Manager, Auckland Council for peer review.

REPORTING

- 37) 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.

- 38) 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 PI.1 shall be the contact person for owner(s) subject to assessment and reporting under Conditions S.1 to S.11 and S.16 and remedial works or compensation payments under Condition S.12 and S.16.

- 39) 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.