

Before the Board of Inquiry  
Waterview Connection Project

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*in the matter of:* the Resource Management Act 1991

*and*

*in the matter of:* a Board of Inquiry appointed under s 149J of the Resource Management Act 1991 to decide notices of requirement and resource consent applications by the NZ Transport Agency for the Waterview Connection Project

Third statement of evidence of Amelia Linzey (Planning – Designation) on behalf of the **NZ Transport Agency**

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## **THIRD STATEMENT OF EVIDENCE OF AMELIA LINZEY ON BEHALF OF THE NZ TRANSPORT AGENCY**

### **INTRODUCTION**

- 1 My name is Amelia Joan Linzey. I am the joint Planning Team Leader and Consultation Manager for the Waterview Connection Project (*Project*).
- 2 I have the qualifications and experience set out at paragraph 2 of my first statement of evidence dated 13 November 2010. I repeat the confirmation given in that statement that I have read, and agree to comply with, the Code of Conduct for Expert Witnesses (Consolidated Practice Note 2006).

### **SCOPE OF EVIDENCE**

- 3 This statement of evidence will deal with the following:
  - 3.1 Executive summary;
  - 3.2 Summary of assessment of effects;
  - 3.3 Overview of mitigation proposed for the Project;
  - 3.4 Statutory assessment for notices of requirement;
  - 3.5 Post-lodgement events;
  - 3.6 Proposed Conditions;
  - 3.7 Comments on Submissions; and
  - 3.8 Conditions.

### **EXECUTIVE SUMMARY**

- 4 The Assessment of Environmental Effects (AEE) lodged with the Project contains a comprehensive discussion of the actual and potential effects of the Waterview Connection Project. This is supported by technical assessment reports (contained within Part G of the AEE). I was the Joint Planning Team Leader for the preparation of this AEE, which included scoping of the technical assessments.
- 5 I have considered the effects on the environment of the elements of the Project that are the subject of the designations. In my view, Part D of the AEE (Chapters 12 through to 23) provides a comprehensive and complete description of the effects of the Project. As appropriate for a Project of this scale, the assessments consider the effects in terms of regional, Project wide and local

impacts and cover the temporal nature of these effects (particularly distinguishing between the construction and operational effects of the Project). Since lodgement and in response to the effects identified in the AEE, further design option development has been undertaken on the ventilation buildings and stacks. This work has been assessed by the relevant experts. I consider the design option development provides further opportunity to mitigate the effects of the Project, particularly potential adverse visual and amenity effects.

- 6 Chapter 24 of the AEE provides a summary of the measures identified to avoid or mitigate the actual and potential effects of the Project as identified in the Project Assessments in Chapters 13 - 23. This summary is based upon the mitigation recommended from the technical assessments (Part G of the AEE). These mitigation measures form the basis of the proposed conditions for the designations, which are contained in Part E.1 of the AEE.
- 7 In response to the further assessments undertaken since lodgement, including consideration of the issues and relief sought by submitters, the expert evidence has suggested revision and refinement to these conditions. Overall, on the basis of the assessments and opinion provided by the experts and subject to the mitigation measures proposed in the draft conditions, I am of the view that the potential adverse effects of the Project will be adequately and appropriately avoided, remedied and mitigated.
- 8 Section 171 of the Resource Management Act sets out those matters that a territorial authority (in this case Board of Inquiry) must consider. Having reviewed the technical documents prepared (Part G of the AEE) and the evidence of experts post lodgement, I consider that:
  - 8.1 Consideration has been given to the objectives and policies of relevant national policy statements, the New Zealand Coastal Policy Statement, the Auckland Regional Policy Statement and Plans and the Waitakere City and Auckland City District Plans. On balance, I consider the proposed designations and alteration to designations provide for works consistent with the relevant policy directions set out in these documents;
  - 8.2 As set out in my first statement of evidence, appropriate consideration has been given to alternative corridors, routes and construction methods for the works;
  - 8.3 The AEE and the evidence in support of the Project demonstrates that it is a work reasonably necessary for the NZTA to achieve its objectives, in that it will complete the Western Ring Route; providing an alternative route through the region and delivering improved trip reliability with appropriate capacity for current and future traffic demands,

enhancing the efficiency of the State highway and surrounding transport network, which will create opportunities for enhanced economic growth; and

- 8.4 The Project meets the definition of sustainable management as provided in section 5 of the RMA, appropriately provides for the relevant matters of section 6 and has regard to the matters of sections 7 and 8 of the RMA (as elaborated on in section 23.11 of the AEE).
- 9 In conclusion, I consider that the purpose of the Resource Management Act is achieved by the granting of the designations sought.

### **SUMMARY OF ASSESSMENT OF EFFECTS**

- 10 The existing environment has been discussed in my first statement of evidence. A comprehensive assessment of environmental effects (AEE) was prepared in support of the applications for designation and resource consents as lodged with the EPA for the Project. These assessments are based on the Notice of Requirement Plans (Plans F.1), the Project description provided in Chapters 4 and 5 (and the Operational and Construction Scheme Plans (Plans F.2 and F.5) of the AEE and the Technical Reports (Part G of the AEE documentation).
- 11 A key aspect to avoiding, remedying or mitigating the adverse effects on the environment was in the design and alignment of the Project. The assessment of alternative design features is provided in Chapter 11 of the AEE. In particular, the following key design features are noted:
- 11.1 Tunnelling 2.5km of SH20 to avoid adverse environmental (including social) effects of a surface road alignment;
  - 11.2 Stormwater treatment to treat existing (generally untreated) and new impervious surfaces thereby improving water quality outcomes for the receiving coastal marine area;
  - 11.3 Design of the Great North Road Interchange to balance land take requirements and appropriate recognition and protection of the significant heritage features and coastal marine area;
  - 11.4 Design of stormwater and stream realignment works for Oakley Creek to rehabilitate and restore the ecological values of this waterway; and
  - 11.5 Design and location of noise walls to balance the mitigation of noise and visual effects of the Project for surrounding receivers and the urban environment.

- 12 As set out in Chapter 12 of the AEE, the assessment has been reported at a regional and Project-wide basis (Chapter 13) and on a Sector by Sector from west to east (SH16) and north to south (SH20) for the Project (Chapters 14 through to 22). The purpose of this structure was to assist residents and other interested parties to address those areas of specific interest to them.
- 13 Table 12-1 of the AEE (a copy of which is attached as **Annexure A** to this evidence) provides an overview of the matters considered in the assessment Chapters, identifying the relevant Technical Reports (Part G) or supplementary information (Part E Appendices) which informed these assessment matters.
- 14 Pages 25 through to 31 inclusive of the Overview<sup>1</sup> submitted with the Notices of Requirement and Consent Applications provide a summary of the assessment of effects from the AEE report.
- 15 I have considered the effects on the environment of the elements of the Project that are the subject of the designations. In my view, Part D of the AEE (Chapters 12 through to 23) provides a comprehensive and complete description of the effects of the Project.
- 16 As appropriate for a Project of this scale, the assessments consider the effects in terms of regional, Project wide and local impacts and cover the temporal nature of these effects (particularly distinguishing between the construction and operational effects of the Project).

#### **OVERVIEW OF MITIGATION PROPOSED FOR THE PROJECT**

- 17 To address the potential adverse effects identified in Chapters 13 through to 22, a number of specific mitigation measures are proposed and set out in Chapter 24 of the AEE. Key conclusions of the mitigation and monitoring proposed for the Project, of relevance to the Notices of Requirement are set out in that chapter, for construction and operation.
- 18 A key element of the mitigation proposed for construction are those measures to manage potential adverse effects as provided for in the Construction Environmental Management Plan (CEMP). The CEMP includes a number of specific management plans (as presented in the evidence of Mr Hugh Leersnyder), which provide appropriate mitigation for land use impacts during construction<sup>2</sup>.

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<sup>1</sup> Which I wrote.

<sup>2</sup> The specific CEMP Management Plans relevant to the designation include: Temporary Traffic Management, Construction Noise and Vibration, Air Quality, Contaminated Soils, Erosion and Sediment Control, Temporary Stormwater, Construction Ecological Management, Archaeological Site Management, Contaminated Soils Management, Settlement Effects Management and the Communications Plans. The mitigation management process proposed by these

- 19 In addition, during construction the temporary relocation of land uses including the kindergarten at Waterview and the establishment of alternative recreation and active open space areas, provides for the ongoing functioning of the existing urban environment.
- 20 Mitigation is also proposed for the operation of the Project, as set out in Section 24.2.1 of the AEE. The following mitigation is proposed for the effects of the designations and alterations to designation:
- 20.1 Following construction activities, that the designation be withdrawn from areas not required for the operation or maintenance of the State Highways, to provide opportunity for redevelopment and reinstatement of land uses, particularly residential development;
- 20.2 Establishment of permanent noise walls and acoustic treatments in accordance with the plans included in the AEE (Plans F.17: Noise Walls) to mitigate adverse effects of noise on residents, education facilities and other 'sensitive receivers';
- 20.3 In agreement with the Auckland Council, reserves and open spaces are replaced and restored; providing for recreation areas and facilities lost by the Project footprint in general accordance with the concepts proposed in the Urban Design Landscape Plans lodged (Plans provided in F.16 of the AEE), but confirmed through the Open Space Restoration Plan process;
- 20.4 Landscaping and urban design is undertaken in general accordance with the Urban Design Landscape Plans lodged (Plans provided in F.16 of the AEE) to mitigate the visual and amenity impacts of the Project; and
- 20.5 Enhancement and restoration of streams in accordance with Oakley Creek Restoration and Rehabilitation Guidelines<sup>3</sup> providing riparian planting and stormwater treatment, mitigating ecological, water quality and amenity impacts of the Project<sup>4</sup>.
- 21 On the basis of the operational mitigation summarised above, and once the Project is established, I consider the adverse effects of the Project will abate (as the Project becomes a recognised 'part' of the

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Plans is described further in the evidence of Mr Hugh Leersnyder (particularly paragraph 31).

<sup>3</sup> Appendix C of Technical Report G.6 of the AEE.

<sup>4</sup> These proposed conditions were lodged in Appendix E.3 of the AEE, but have been reviewed and updated and are provided in **Annexure B** of this evidence. I will discuss this later in my evidence.

urban environment within which it sits) and that, on the basis of the assessments and opinion provided by the experts and subject to the mitigation measures proposed in the draft conditions, the Project will be adequately and appropriately avoided, remedied and mitigated.

### **STATUTORY ASSESSMENT FOR NOTICES OF REQUIREMENT**

- 22 Following from Chapter 6 (which sets out the statutory context for assessment and which was introduced in my second statement of evidence), Chapter 23 of the AEE provides an assessment of the Project against Part 2 of the RMA and the relevant planning documents (in accordance with section 171).
- 23 I undertook the assessment and (in collaboration with Mr Owen Burn) wrote Chapter 23. In the interests of brevity I will not repeat that assessment here but reiterate the conclusion that I made in the AEE that, in providing for sustainable management, there is a requirement to balance consideration of the sometimes competing resource values and the benefits with the adverse effects of a project. In particular, I consider that for the designation of a public work such as is proposed by this Project, the balance involves considering the regional and national benefits of the work for the wider community with the more localised adverse effects on the community upon which the Project impacts. I consider that this balance has been appropriately met.
- 24 The Project will enable people and communities to provide for their social and economic wellbeing by providing for economic and population growth, improving accessibility and connectivity, and providing resilience to the community through the transport network<sup>5</sup>. While it is acknowledged that the Project will adversely affect communities, particularly those immediately neighbouring the Project, I consider that the mitigation and management methods proposed (and reflected in the consent conditions<sup>6</sup>) achieves sustainable management of natural and physical resources and is consistent with the purpose and principles of the Resource Management Act.
- 25 Further to this assessment the following key conclusions are made from the planning assessment, relevant to the Notices of Requirement:
- 25.1 In Section 23.11 of the AEE, an assessment is made of the Project in respect of Part 2 of the RMA. Having reviewed the information presented in evidence, I continue to support the conclusion made in the AEE that the Project meets the

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<sup>5</sup> As presented in the evidence of Mr Tommy Parker, Mr Andrew Murray, Mr Michael Copeland and my own second statement (social effects).

<sup>6</sup> See **Annexure B**.

definition of sustainable management as provided in section 5, appropriately provides for the relevant matters of section 6 and has regard to the matters of sections 7 and 8 of the RMA (as elaborated on in that section of the AEE);

- 25.2 The Project represents a significant infrastructure development that will benefit transportation and economic growth for the City and wider region. This is recognised in the identified economic, transportation, growth and accessibility benefits that have been identified in the AEE (supported by technical reports and expert evidence presented);
- 25.3 The AEE and the evidence in support of the Project (particularly in the evidence of Mr Tommy Parker and Mr Andrew Murray) demonstrates that it is a work reasonably necessary for the NZTA to achieve its objectives, in that it will complete the Western Ring Route; providing an alternative route through the region and delivering improved trip reliability with appropriate capacity for current and future traffic demands, enhancing the efficiency of the State highway and surrounding transport network, which will create opportunities for enhanced economic growth; and
- 25.4 A thorough assessment has been undertaken of the Project and its effects against the relevant objectives and policies of Policy Statements and Plans (those matters set out in my first statement of evidence). This assessment is provided in Chapter 23, from sections 23.2 through to 23.10 inclusive. I acknowledge that the scale of the work and its extent within an established urban environment is recognised as a significant change in that environment, generating adverse effects. However, I consider that the Project is, on balance, consistent with these matters: providing for the City's growing transportation needs while appropriately avoiding, remedying and mitigating the adverse effects on the environment.

## **POST LODGEMENT EVENTS**

- 26 Since lodgement and in response to the effects identified in the AEE, further design option development has been undertaken on the ventilation buildings and stacks<sup>7</sup>. This work has been assessed by the relevant experts<sup>8</sup>. I consider the design option development

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<sup>7</sup> This work has been undertaken by and is presented in the evidence of Mr David Gibbs.

<sup>8</sup> In particular Mr Stephen Brown (introduced in paragraphs 108 – 110 and for the northern ventilation building assessed in paragraphs 117 – 122 and the southern ventilation building paragraphs 126-131), Ms Lynne Hancock (in paragraphs 130 – 132) and Mr David Little (where he assessing the southern ventilation building only over paragraphs 128 – 136).

provides further opportunity to mitigate the effects of the Project, particularly potential adverse visual and amenity effects. Delivery of this mitigation is discussed further in the conditions proposed for designation (presented later in my evidence).

27 I have reviewed the Section 149G reports prepared by the Auckland Regional, Auckland City and Waitakere City Council's which identify the relevant objectives and policies of National Environmental Standards, Policy Statements and Plans against which the proposal has been considered. As noted in my first statement of evidence, the Section 149G reports confirm the statutory framework as identified in the AEE, though in light of recent changes in the status of some planning documents and in response to some minor omissions from the AEE, additional objectives and policies have been identified (provided in Annexure D of my first statement of evidence).

28 In light of these matters, I make the following comments in respect of the assessment in Chapter 23:

28.1 The revised Policies of Chapter 11 of the Regional Policy Statement (in particular Policy 11.4.1(3)) strengthen the restriction on development in the 1% AEP flood plain. This matter has been considered in the assessment of floodplain and stormwater presented in the evidence of Dr Tim Fisher<sup>9</sup>. Overall, the proposed works alleviate flooding and Dr Fisher demonstrates that the flood hazard reduces for the habitable floors of two houses in the Project area. However, it is acknowledged that this is not the case for a small number of properties on Bollard Avenue where the works have the potential to exacerbate existing flooding (particularly for 12A Bollard Avenue where potential flooding of a basement garage is worsened). Dr Fisher considers that this effect is minor, however, further specific mitigation is proposed and this is being progressed with the Auckland Council.<sup>10</sup>

28.2 Policy 10 of the National Policy Statement of Electricity Transmission 2008 identifies and responds to issues of reverse sensitivity, seeking that activities are managed to avoid reverse sensitivity effects on the electricity transmission network and to ensure that operation, maintenance, upgrading, and development of the electricity transmission network is not compromised. I consider that this policy is met in the proposed designation conditions (**Annexure B** Condition CEMP.14<sup>11</sup>), requiring a specific management plan be prepared for works in the vicinity of Transpower's electricity transmission lines.

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<sup>9</sup> In paragraphs 96 through to 102 of his evidence.

<sup>10</sup> Refer evidence of Dr Tim Fisher, at paragraphs 101 and 113 to 119.

<sup>11</sup> This is presented in the evidence of Mr Hugh Leersnyder paragraphs 59 – 61.

- 28.3 I consider that the objectives and policies (5E.4.1, 5E.4.2. and 5E.4.3) of Part 5E Hazardous Facilities of the Auckland District Plan are appropriately addressed by the proposed designation conditions, requiring the management of environmental effects to be detailed within the Hazardous Substances Management Plan (required within the CEMP and as Condition CEMP.10 (see **Annexure B**)).
- 28.4 The NZCPS 2010 sets out 7 objectives and 29 policies to achieve the purpose of the Resource Management Act in relation to the coastal environment of New Zealand. This NZCPS effectively replaces the NZCPS of 2004. There are number of policy directions in the NZCPS 2010 which are consistent with or similar to its predecessor or to the objectives and policies of the Auckland Regional Policy Statement and/or Regional Plan: Coastal. Annexure D of my first statement of evidence provides the relevant objectives and policies from the NZCPS 2010. On the basis of these, I have undertaken an assessment of the Project and the following additional or amended conclusions are made with regard to the overall policy assessment:
- (a) The assessment of impacts on ecotones over the land / coastal marine area interface is consistent with the policies of the NZCPS to recognise the extent and characteristics of the coastal environment<sup>12</sup>;
  - (b) The conditions proposed and ongoing engagement with iwi provide opportunity for Maori involvement in decision making and recognition of tangata whenua to exercise kaitiakitanga and matauranga Maori<sup>13</sup>;
  - (c) The joint application (for designations and resource consents) as sought by the Project provides for an integrated assessment of the effects of the Project on the coastal environment<sup>14</sup>;
  - (d) The assessment has considered the impact of the Project on lands and waters managed under other Acts (particularly the Marine Reserves Act<sup>15</sup>, but also the Reserves Act and New Zealand Historic Places Trust);
  - (e) The evidence of Mr Jon Hind and Mr Jeff Hsi document the justifiable need for the reclamation and I consider that is consistent with this policy intent of Policy 6.

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<sup>12</sup> Policy 1 of the NZCPS 2010

<sup>13</sup> Policy 2 of the NZCPS 2010

<sup>14</sup> Policy 4 of the NZCPS 2010

<sup>15</sup> This is discussed in more detail in the evidence of Mr Owen Burn's second statement of evidence.

I note that Mr Owen Burn further assesses these matters in relation of the specific coastal consents required;

- (f) The Project is consistent with Policy 14 which promotes the restoration or rehabilitation of the natural character of the coastal environment by mitigation seeking to restore habitats (e.g. ecotone planting) using local eco-sourced plant stock, by reducing the discharge of contaminants through improved stormwater treatment and by restoration of cultural landscape features associated with the Star Mill / Garrett Tannery and the Oakley Stone Wall;
- (g) The Project includes protection and managed restoration of historic heritage in the coastal environment which will provide for the ongoing use and appreciation of the site by the public. This, alongside the proposed conditions which provide for collaboration with Council and the NZHPT recognise and provide for Policy 17; and
- (h) The Project provides appropriate public walking access to and along the coastal marine area, balancing this with the need to recognise ecological values in the Motu Manawa (Pollen Island) Marine Reserve and the public health and safety associated with access adjacent to a State highway<sup>16</sup>;
- (i) More specific planning assessment of those matters related to the coastal consents is considered in the evidence of Mr Owen Burn.

29 In response to page 6 of the Section 149G Report from Waitakere City Council, I consider that the AEE does assess the Project in relation to sections 7 and 8 of the Hauraki Gulf Marine Park Act (as set out in section 23.4 of Chapter 23 of the AEE). On the basis of that assessment, I conclude that the Project is consistent with the Objectives set out in Section 8 of that Act, for the reasons provided in that section of the AEE.

### **COMMENTS ON SUBMISSIONS**

- 30 I have reviewed the submissions lodged on the Project and sought specific technical comment on matters raised where relevant. These are responded to in the evidence of the relevant experts.
- 31 I have further read the submissions lodged on the Project that raise planning related issues, relevant to my area of expertise and to the

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<sup>16</sup> Policy 19 of the NZCPS

designations sought. In this section of my evidence, I will address submissions to the extent that the issues and/or concerns raised have not already been addressed in the Assessment of Environmental Effects or elsewhere in my evidence.

- 32 Where appropriate I have grouped key issues/concerns and addressed these as a whole as follows:
- 32.1 Submissions relating to Part 2 RMA Assessment and other Planning Documents;
  - 32.2 Submissions relating to the adequacy of the assessment of environmental effects;
  - 32.3 Submissions relating to adequacy of mitigation;
  - 32.4 Submissions relating to amendments to proposed designation conditions; and
  - 32.5 Submissions relating to specific Project design elements.
- 33 I address submission points regarding the overall planning process and statutory process within my first statement of evidence.

**Part 2 RMA Assessment and other Planning Documents**

- 34 A number of submitters<sup>17</sup> raised concern that the Project does not promote sustainable management and does not meet the purposes and provisions of the RMA – Part 2 (particularly in absence of appropriate conditions) because the Project represents inefficient use and development of resources causing significant adverse effects on the environment<sup>18</sup>.
- 35 A number of submitters<sup>19</sup> stated the Project does not meet the needs of future generations, for example The Ministry of Education<sup>20</sup> and Waterview Primary School Board of Trustees<sup>21</sup> state *"the Project will not meet the reasonably foreseeable needs of future generations nor will it enable social, health, economic and cultural wellbeing of the people of Waterview"*. A number of submitters including the submission of Living Communities Incorporated<sup>22</sup> and Eden Albert Community Board<sup>23</sup> further state that *"the Project does not adequately provide for the needs of future generations, which are*

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<sup>17</sup> Including Submitter Nos. 121, 126, 153, 175, 176, 199, 202, 203, 225 and 230.

<sup>18</sup> This is discussed specifically in more detail in the following section of my evidence.

<sup>19</sup> Including Submitter Nos. 170, 175, 176, 203 and 213.

<sup>20</sup> Submission No. 175

<sup>21</sup> Submission No. 176

<sup>22</sup> Submitter No. 167.

<sup>23</sup> Submitter No. 129

*likely to involve the greater provision of public transport; The Project does not adequately provide for mitigation of adverse effects on the environment through which it passes”.*

- 36 As noted earlier, I consider that there has been a full and appropriate assessment of the relevant planning documents and in particular, I consider:
- 36.1 That there has been specific consideration of the matters in Part 2 of the RMA, as provided in section 23.11 of the AEE. In relation to the specific concerns raised by these submitters, I further note that there has been a specific social impact assessment for the Project (Technical Report G.14 of the AEE), cultural assessments and comment has been sought from Ngati Whatua and Kawerau a Maki (provided in Part E.6 of the AEE), assessment has been undertaken in respect of the transport and resulting economic benefits (provided in Technical Report G.18 of the AEE) and those matters relating to health effects have been considered (particularly in respect of emissions (Technical Reports G.5 and G.12 (construction and operation noise respectively), G.1 (air quality), G.9 (land and groundwater contamination) and in respect of health and wellbeing (Technical Report G.14). The assessments of these reports have informed my consideration of the relevant statutory matters (including Part 2) and, in the absence of any further detail in these submissions, on this basis my conclusion that the purpose and principles of the RMA are met is not changed;
- 36.2 That the use of resources for the designation for the Project is on balance efficient; particularly taking into account the following (as identified in the AEE):
- (a) The significant existing physical resource of the State highway network and the conclusion from the assessment of Mr Andrew Murray that this Project will improve the effectiveness and efficiency of the use of this network<sup>24</sup>;
  - (b) The Project complements wider strategic objectives of the Region, improving connectivity and accessibility within the greater Auckland City (between the south, west and north), thereby facilitating growth and enabling more intensive land use patterns within the existing Metropolitan Urban Limits (both outcomes sought by the Regional Policy Statement);

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<sup>24</sup> In his evidence, Mr Andrew Murray states that the Project is consistent with the Project objectives which include efficiency and effectiveness.

- (c) Many adverse land use and social effects of the land required for the Project are avoided (by tunnelling) and residual impacts are mitigated (for example, through the maintenance of a future rail corridor, provision for the reinstatement and replacement of open space / recreation areas, the withdrawal of designation to enable reinstatement of housing following construction and the provision of amenity planting, noise mitigation and other measures proposed in Chapter 24 of the AEE to address the 'edge effects' of the Project); and
- (d) Furthermore, as noted in the evidence of Mr Michael Copeland<sup>25</sup>, the Project represents an economically efficient use of resources (reflected through the economic assessments of Benefit Cost Ratios); and

36.3 That the Project meets the reasonably foreseeable needs of future generations, by providing transportation infrastructure (including road, passenger transport and pedestrian / cycle modes) that will support the region and the region's anticipated population growth, and by maintaining the land corridor for future implementation of the Avondale-Southdown Rail.

37 The need to balance conflicting objectives as set out in relevant statutory documents was also raised as a concern. For example Ngati Whatua o Orakei<sup>26</sup> states that "*while there is a need to provide an integrated transport network under the ARLTS, this should not be at the expense of the City's remnant natural environment*". Also concerned with the Auckland Regional Land Transport Strategy 2010-2040 is the submission by the Springleigh Residents Association<sup>27</sup> who assert that "*the Auckland Regional Land Transport Strategy is not a statutory document but a strategic document. It does not override other strategic documents. It is not a planning document that defines single proposals*".

38 In my opinion, as noted earlier, there is a need to consider the overall purpose and provisions of the RMA – Part 2 and I consider that the Project assessment has done so. While the Auckland Regional Land Transport Strategy is not an RMA document, it represents the Region's major transportation direction and is recognised as a method to deliver on the Policies of the Regional Policy Statement (as an illustration, Policy 2.6.7 providing for enabling, planning and developing necessary new Regional infrastructure and the Policies of Chapter 4). As such, I consider that the assessment of this document as set out in the planning assessment is appropriate.

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<sup>25</sup> In Paragraph 11.

<sup>26</sup> Submitter No. 170.

<sup>27</sup> Submitter No. 43.

39 In relation to other planning documents, Transpower<sup>28</sup> raised concern that the National Policy Statement on Electricity Transmission (March, 2008) was not cited in the AEE documentation. The provisions of the National Policy Statement are assessed above and it is acknowledged that Policy 10 is of relevance to this Project. I consider that the proposed amended conditions (as presented in the evidence of Mr Hugh Leersnyder) appropriately respond to this policy and the concerns raised by this submitter.

**Inadequacy of Assessment of Environmental Effects**

40 A number of submitters<sup>29</sup> raised general concerns that the Project as a whole has significant adverse effects (including environmental, natural, social and cultural effects) which are not sufficiently mitigated.

41 I consider that there has been a comprehensive assessment of the effects of the Project on the physical, natural, social and cultural environment, reflected in the 20 Technical Reports submitted with the AEE that assess different aspects of environmental effects, the 8 Technical Reports which support these assessments by providing greater understanding of the existing environment (e.g. the geotechnical factual reports) and the numerous Draft Management Plans provided in the CEMP and Erosion and Sediment Control Plan, which together provide proposals for the management, monitoring and mitigation of identified environmental effects and potential effects for both construction and operation of the Project. I have reviewed the assessment and management plan reports, as well as those undertaken post-lodgement. It is my opinion that there has been a thorough assessment of the environmental effects of the Project and that appropriate measures have been proposed to mitigate the identified adverse effects.

42 Subject to the mitigation proposed, which can be delivered through conditions imposed on the consents and designations, I consider that the potential adverse effects of the Project will be sufficiently avoided, remedied and mitigated.

43 A number of submitters<sup>30</sup> raised concern that the AEE does not consider cumulative effects. The Friends of Oakley Creek – Te Auaunga<sup>31</sup> consider that the combined impacts of the Mt Roskill SH20 Project and the Maioro Interchange Project on the Oakley Creek must be assessed as part of the Project. The North Western Community Association<sup>32</sup> state that "*the cumulative effects of traffic (noise, emissions, increase in vehicle numbers and movements) will*

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<sup>28</sup> Submitter No. 52.

<sup>29</sup> Including Submitter Nos. 26, 35, 60, 136, 165, 178, 184, 210, 235 and 238.

<sup>30</sup> Including Submitter Nos. 43, 130, 179 and 185.

<sup>31</sup> Submitter No. 179.

<sup>32</sup> Submitter No. 185.

*have a significant adverse effect on the environment and do not represent a sustainable use of resources”.*

- 44 Consideration has been given to cumulative effects within the AEE and by a number of specific assessments (including the visual, flooding, streamworks and air quality effects assessments).
- 45 More specifically, in respect of the combined impacts of the Mt Roskill SH20 Project and the Maioro Interchange Project, the cumulative impact on the water quality and natural character of the Oakley Creek has been considered. The evidence of Mr Eddie Sides<sup>33</sup> discusses the assessment of cumulative effects on Oakley Creek in further detail, and concludes that the proposed mitigation and implementation of the Oakley Creek Restoration and Rehabilitation Guidelines<sup>34</sup> will appropriately off-set impacts on this waterway. Furthermore, as presented in the evidence of Mr David Little<sup>35</sup>, these measures, together with the open space restoration and development of the pedestrian-cycle way through this area, will enhance the wider ecological values of open space and reserve areas (consistent with the policy directions of the Auckland Council).
- 46 On this basis, I consider that there has been appropriate consideration of cumulative effects both generally and with specific consideration to the impacts on the natural character of Oakley Creek.
- 47 Additionally David Mead<sup>36</sup> states that *“there does not appear to be any long term assessment of the environmental, social and economic consequences of the project. This is important when considering costs and benefits. The AEE appears to say that negative impacts on the environment and the community are outweighed by the positive impacts of improved regional accessibility, yet there is no discussion of the rate at which future positive transport impacts start to abate (they are not permanent)”*.
- 48 The points raised in the above submission are analysed in the evidence of Mr Andrew Murray<sup>37</sup>. In relation to effects changing over time, I consider that while the benefits of transport reduction may reduce, the benefits will generally appear greater when compared to a future scenario without the Project. The evidence of Mr Michael Copeland addresses more specifically the economic principles of cost benefit analysis.

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<sup>33</sup> In paragraph 77.

<sup>34</sup> Technical Report G.6, Appendix C.

<sup>35</sup> Paragraph 40 refers to the Auckland Council Parks Plan and paragraphs 97 and 98 assess ecological considerations in respect of the Oakley Creek / Alan Wood Reserve area.

<sup>36</sup> Submitter No. 130.

<sup>37</sup> In paragraphs 152 to 157.

### **Inadequacy of Mitigation**

- 49 A number of submitters<sup>38</sup> raise concern regarding the inadequacy of mitigation proposed for affected communities. Examples, sought by these submitters, include those that follow.
- 50 Insufficient proposed open space replacement mitigation (either in quality and/or quantity) or additional replacement open space<sup>39</sup>.
- 50.1 *Response:* The evidence of Mr David Little assesses the proposed open space replacement mitigation (quality and quantity) in further detail<sup>40</sup>. He concludes that, providing the mitigation identified in his evidence is delivered, the quantum, connectivity and quality of open space has been mitigated. I consider that the proposed Conditions as amended (**Annexure B**) generally provide for this mitigation.
- 50.2 It is recognised that some elements of the replacement open space identified are beyond the designation footprint (for example, the area around Saxon Park, Oakley Avenue and 36 Cradock Street<sup>41</sup>). I can confirm that 36 Cradock Street is owned by the NZTA and therefore establishment of this reserve area is not subject to any further landowner requirements.
- 50.3 The NZTA continues to work with landowners and the Auckland Council on appropriate mechanisms to secure the land at Saxon Park. At the time of writing this evidence, I understand that this is progressing<sup>42</sup>.
- 50.4 In the case of land linking the Howlett Reserve to Oakley Avenue, it is noted that there are a number of alternative properties that Auckland Council has identified that could establish this reserve linkage. I understand that the NZTA is progressing discussions on these options, as part of the Public Works Act process for equivalent reinstatement of reserve facilities.
- 51 Extension of the pedestrian/cycle way network to connect SH20 with SH16<sup>43</sup>.

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<sup>38</sup> Including Submitter Nos. 55, 135, 176, 179, 185, 186, 203, 213, 221 and 228.

<sup>39</sup> Including Submitter Nos. 26, 36, 129, 165, 184, 204 210, 220, and 221.

<sup>40</sup> This is a summation of Mr David Little's statements over paragraphs 21 to 23. It is acknowledged while Mr David Little does conclude that the effects are mitigated he notes residual effects of noise and the physical form of the southern ventilation building on the Alan Wood Reserve area of open space.

<sup>41</sup> The latter is no longer within the designation as NOR 6 is being withdrawn.

<sup>42</sup> In terms of the development proposed at Saxon Reserve, depending on the final configuration of facilities, additional resource consents **may** be required.

<sup>43</sup> Including Submitter Nos. 79, 111, 167, 179, 185 and 204.

- 51.1 *Response:* In development of the Project, particularly the SH20 elements of the Project, extensive consultation has been undertaken on a number of different route, alignment and mitigation options. This has included alternatives for pedestrian and cycle way networks and these have been put forward by both the NZTA and by the community. In confirming the final scope of the Project, the NZTA has identified a designation footprint and works to achieve the Project objectives and to avoid, remedy and mitigate the effects of the Project on the environment.
- 51.2 In determining the designation required for the Project, no provision was made for pedestrian / cyclists within the tunnel nor was land identified discontinuous from the State highway for this network. For the NZTA to provide a continuous pedestrian / cycle way connection between SH16 and SH20, it would require either resource consent approvals<sup>44</sup> or surface designation. As the Project is in tunnel for some 2.5km through the Avondale/Mt Albert area, it is considered that the adverse effects (particularly social and land use effects) of the Project in this area are avoided. As such, provision of this facility is not considered mitigation for the Project (as no severance or change is proposed to existing transport networks or connections) and the NZTA has therefore not sought its provision.
- 51.3 The evidence of Mr Tommy Parker describes the scope of the Project, including the elements of the pedestrian/cycle way network proposed. While provision for the extension of the pedestrian/cycle way (to connect between SH16 and SH20) is generally supported by the NZTA (for example, it is included in the Western Ring Route (North-West) Network Plan<sup>45</sup>), it is considered to be a separate Project and not a 'mitigation' measure for the Waterview Connection.
- 52 Provision of pedestrian / cycle bridge or connection between Waterview and Point Chevalier and / or between Waterview and Eric Armishaw Park<sup>46</sup>, including the option to provide upgrading of the bridge between Waterview and Unitec<sup>47</sup>.
- 52.1 *Response:* As noted above, over the extensive periods of consultation on the Project, numerous alternatives for

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<sup>44</sup> Including likely non-complying land use consent approvals for any bridge crossings of Oakley Creek in Open Space 2 Zone.

<sup>45</sup> The Western Ring Route (North-West) Network Plan can be viewed at: <http://www.waterviewapplication.nzta.govt.nz/> under 'Non-Lodged Documents'.

<sup>46</sup> For example, Submitter Nos. 79, 88, 136, 167, 179, 180, 192, 200 and 221 identify such connections as 'mitigation'.

<sup>47</sup> As identified by Friends of Oakley Creek (Submission No. 179) and suggested by Auckland City Council (Submission No. 111).

pedestrian and cycle way networks and linkages have been put forward. A number of these connections recognise and promote community connectivity between residential and business or residential and open space areas.

52.2 The Project has recognised the importance of community connection to and along the coastal marine area, and as discussed in the evidence of Mr David Little<sup>48</sup>, provides such linkages (e.g. around Howlett Reserve and through the proposed pedestrian / cycle connection through and along the northern boundary of the Great North Road interchange to Eric Armishaw Park). I consider that these measures provide appropriate mitigation and respond to relevant policy directions to recognise the need for walking access to and along the coast.

52.3 Further, the works suggested by submitters, including more significant examples such as a bridge crossing over SH16 to Eric Armishaw Park, would require significant structures which would in turn have their own potential impacts (e.g. visual and on coastal processes) and specific consenting challenges. On this basis, I consider that such work is not mitigation for the Project and is clearly a separate project to be assessed on its own merits.

52.4 Similarly, I also consider the connections proposed by some submitters (for a linkage between Waterview and Unitec), as beyond the scope of mitigation for the Project, as the existing connection (via the pedestrian/cycle overbridge on Great North Road) is not affected by the Project.

53 Replacement of residential dwellings in the future<sup>49</sup>.

53.1 *Response:* The AEE concludes that the replacement of housing from those areas of designation not required for its operation and maintenance (or for other key mitigation works), will reduce environmental effects of the Project. It is proposed that the designation be withdrawn from such construction areas on completion of works. However, it is also recognised that the NZTA has a limited role in providing replacement residential developments and it is considered that this requires a multi-agency approach (as discussed in my evidence on the social impact assessment). I have put forward the proposed condition (SO.12 in **Annexure B**) for the establishment of a Working Liaison Group to further work with agencies (such as the Auckland Council and Housing New Zealand) to progress opportunities to integrated the

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<sup>48</sup> Paragraphs 78 to 79.

<sup>49</sup> For example, Submitter Nos. 111, 175, 176, 185 and 191.

retraction of the designation with works to replace housing developments.

- 54 Potential for early works to occur which benefit the community (including pedestrian bridges across Oakley Creek, open space replacement, noise walls and bunds)<sup>50</sup>.
- 54.1 *Response:* Construction work has been identified as generating potentially significant adverse effects (albeit of a non-permanent nature). In response to this, a Construction Environmental Management Plan (CEMP) has been developed, presented in the evidence of Mr Hugh Leersnyder. The CEMP identifies a number of mitigation works for construction activities. While the opportunity for early development of permanent mitigation works (such as noise walls) is identified in the CEMP, it is recognised that undertaking such works must be balanced against the engineering constraints and challenges. I consider that undertaking the works in accordance with the standards and requirements of the CEMP and the conditions proposed for the designation, will adequately mitigate the effects of construction for residents, the community and the environment, without the need to **require** that 'early works' occur (e.g. temporary noise barriers will achieve the necessary mitigation without requiring permanent noise walls).
- 54.2 One notable exception to this is the provision of recreation and open space facilities over the construction period. This impact is discussed in the evidence of Mr David Little<sup>51</sup> and I support the conditions he has proposed to provide recreation facilities prior to construction commencing (to off-set the loss of existing facilities by the establishment of Construction Yards 5, 7 and the construction area in Sector 9). I do however, consider that early provision needs to be balanced with health and safety considerations. As such, while I support in principle the relief sought by Friends of Oakley Creek – Te Auaunga<sup>52</sup>; that the bridges across Oakley Creek be constructed as early as possible, this needs to be cautioned with where this is practicable and safe.

#### **Amendments to Proposed Designation Conditions**

- 55 A number of submitters requested amendments to the proposed designation conditions<sup>53</sup>. The proposed changes have been reviewed and comments sought from the specific technical expertise to revise the conditions as appropriate.

<sup>50</sup> Including Submitter Nos. 179 (Friends of Oakley Creek – Te Auaunga), 185 (North Western Community Association) and 211 (Graeme East).

<sup>51</sup> Paragraph 86

<sup>52</sup> Submission No. 179.

<sup>53</sup> Including Submitter Nos. 52, 80, 158, 179, 211, 213, 221, 225, 230 and 241.

56 Some of these submitters sought condition amendments relating to planning matters. To the extent these are not covered by other witnesses, these are addressed below:

56.1 Amendments to management plan approvals<sup>54</sup>:

I recommend that a review and approvals process is established for:

- (a) Management plans to implement conditions – to ensure that the management plan is consistent with the conditions of consents (e.g. CEMP and associated management plans);
- (b) Areas where subsequent design is proposed, for review and consultation with stakeholders and approval that such plans are consistent with the design concepts (urban design) (e.g. structural design of the ventilation buildings) or where there are other agencies with kaitiaki role (Oakley Creek or Heritage Inlet); and
- (c) Where the asset will be returned to a third party (e.g. open space restoration plans).

56.2 Process for withdrawing designation post construction<sup>55</sup>.

I recommend that the NZTA Working Liaison Group<sup>56</sup> discusses which parts of the designation can be removed post construction and the potential future development proposed.

56.3 Conditions requiring mitigation measures to not conflict with the future development of rail<sup>57</sup>.

I am of the opinion that the proposed temporary planting of the rail corridor does not preclude rail use within this corridor in the future.

57 A revised set of Conditions is included in **Annexure B**. Each of the expert witnesses also has a copy of the conditions of consent relevant to their field of expertise appended to their evidence.

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<sup>54</sup> Including Submitter Nos. 111 (Auckland City Council) and 207 (Auckland Regional Council).

<sup>55</sup> Including Submitters such as Auckland City Council (Submitter No. 111), Ministry of Education (Submitter No. 176) and Friends of Oakley Creek (Submitter No. 179).

<sup>56</sup> Condition SO.12

<sup>57</sup> Including Campaign for Better Transport (Submitter No. 146), and Margi Watson (Submitter No. 225).

### **Specific Project design elements**

#### ***Open Space, Residential and Business Land Take***

- 58 A large number of submitters<sup>58</sup> raised concern regarding significant open space<sup>59</sup>, residential and business land impacts resulting from the Project, particularly in Waterview and Owairaka. Other submitters<sup>60</sup> also raised concerns regarding the impact of the Project on businesses in the community which are zoned or consented for business activities.
- 59 My second statement of evidence addresses the social impacts of the Project (including those relating to residential and business land take) and as set out in my first statement of evidence, I consider that the NZTA has assessed the options for the Project and provided an appropriate balance on the sometimes competing issues and environmental effects, while also ensuring that its Project objectives are met.
- 60 In addition, Sandra Murray<sup>61</sup> asks whether *"the amount of open space which will remain available in the area meets the Councils own planning measures, if this was a new housing development planned in the area. I believe that minimum recreational spaces in the councils own planning policies requires greater availability to recreational spaces (parks etc) than will remain in Waterview after this development occurs"*.
- 61 In my opinion, the Council's reserve contribution policies are not relevant or appropriate to apply to this Project as the explicit purpose of these policies is to accommodate the additional residents a new development provides for. Further, as noted in the evidence of Mr David Little, the proposed mitigation of open space provides for a maintained quantum of replacement area compared to that lost<sup>62</sup>.

#### ***Inadequate recognition of Te Waka Mataatua***

- 62 The Springleigh Residents Association and Hiltrud Gruger<sup>63</sup> raised concern about the removal of 'Te Waka Mataatu' – the Waka landing site on Unitec Campus/rear of Phyllis Street Reserve. The Springleigh Residents Association states that *"the removal of 'Te Waka Mataatu' has a large negative effect"* and the *"applicant understates the effects"* and *"does not identify those people who have a significant link to 'Te Waka Mataatu'". As a road building*

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<sup>58</sup> Including Submitter Nos. 13, 26, 33, 78, 129, 140, 165, 184, 185 and 210.

<sup>59</sup> Response to these issues is considered to be covered in the discussion on Open Space above.

<sup>60</sup> Including Submitter Nos. 163, 177, 185 and 191.

<sup>61</sup> Submitter No. 33.

<sup>62</sup> Paragraphs 21 to 23

<sup>63</sup> Submitter Nos. 42 and 43.

*organisation it has no authority to decide or comment on intellectual, spiritual or social aspects of 'Te Waka Mataatu'".*

- 63 I can confirm that this site was identified in early consultation and site investigations for the Project and was identified on the Constraints Mapping undertaken in the early route option development and assessment phases. Following this, further consultation and comment has been sought from tangata whenua (Ngati Whatua o Orakei) in regard to this site (as recorded in the Draft Cultural Statement provided and appended to the AEE, in Appendix E.6). This Report, which also cites other cultural assessment, raises uncertainty on the accuracy of the identification of this site and states that *'None of these people retain whakapapa or korero actually showing Wairaka of Mataatua living in Auckland or establishing a lineage here'*<sup>64</sup>. On this basis, and given the depth of tunnelling beneath this area, I do not consider the Project will adversely impact on cultural values in respect of Te Waka Mataatua.

#### **Impact on Trees**

- 64 The Tree Council and Friends of Oakley Creek – Te Auaunga<sup>65</sup> raised concern that the AEE provided inadequate information relating to the Project impacts on trees. The Tree Council states that the information provided within the application *"makes it impossible to tell what is the fate for trees within the designated areas"*. The list provided in Appendix E.7 of the AEE is considered *"completely inadequate"*.
- 65 I confirm that a schedule of amenity trees (those generally protected by District Plan rules) located within the new or altered designation as sought by the NZTA was included as Appendix E.7 of the AEE. This schedule informed the land use impact assessment within the AEE (Part D) of the Project<sup>66</sup>.
- 66 On the basis of the potential effects of tree removal identified in the AEE, the CEMP provides a management approach that seeks to retain identified amenity trees in construction yards and other areas at the edge of the Project where the construction management may be able to be undertaken to avoid the removal. The process includes mapping of these trees within the CEMP GIS layers and proposes a case-by-case assessment of how amenity trees will be assessed and where practicable protected. In cases where amenity

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<sup>64</sup> Paterson, Dr M. 2009, *'Ngati Whatua o Orakei Heritage Assessment for the Widening of the Nor-Western Motorway between Waterview and Westgate'* approved by Ngarimu Blair & Ngati Whatua o Orakei, December 2009 (p4).

<sup>65</sup> Submitter Nos. 161 and 179.

<sup>66</sup> I also note that the visual assessment undertaken by Mr Stephen Brown also considered the amenity impacts of the Project and the effect of tree removal (from a visual and amenity perspective), and the terrestrial vegetation assessment led by Mr David Slaven considered the ecological impacts of the Project on vegetation of ecological value.

trees cannot be retained and require removal, the CEMP proposes that replacement trees will be provided.

- 67 I am of the opinion that the information provided within the AEE is adequate. Until a contractor is appointed it is difficult to ascertain exactly which trees are required to be removed. However, I am of the opinion that the CEMP adequately provides for the avoidance, mitigation or remediation of effect on amenity trees from construction activities.

***Use of fill for Onehunga Bay***

- 68 Three submissions<sup>67</sup> request the use of the tunnel spoil for fill at Onehunga Bay due to its close proximity to the Project.

- 69 The Onehunga Foreshore project is in a comparative early stage of development. In particular, this includes consenting for reclamation of the CMA. While the opportunity to divert the fill from the tunnel to this location is not precluded by the Project, it has not been relied upon in the assessment of spoil disposal options (e.g. the temporary traffic effects as discussed by Mr Gottler).

***Relocation of Te Atatu Pony Club***

- 70 A number of submitters<sup>68</sup> requested alternative locations for Construction Yard 1 in order to provide for the existing level of use and operation of the Pony Club. Specifically, these submitters request the Construction Yard to be moved to the north of the tenancy boundary.
- 71 Chapter 11 of the AEE provides an assessment of alternatives undertaken on the location of Construction Yard 1. While other areas were investigated, preference was given to areas within close proximity to the Project area (considering engineering constraints and environmental effects of the alternatives). The land at Harbourview Orangihina Park was identified as appropriate due to offering sufficient flat usable land adjacent to the Project works with good site access and access to services. In considering alternatives within Harbourview Orangihina Park, the social and environmental effects of alternatives were also considered (in particular, archaeological sites and ecological values of bird roosting areas).
- 72 In consideration of these submissions, however, it is proposed that a 30m wide corridor be maintained to the east of Construction Yard 1 (including the bridle path that has already been excluded from the proposed designation). This corridor provides additional land for connectivity between the two remaining areas of the Te Atatu Pony Club Land. Subject to further consultation with the Club and Auckland Council (as landowners), I consider that this will enable the Club to maintain use of their facilities over the construction

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<sup>67</sup> Including Submitter Nos. 187, 189 and 234.

<sup>68</sup> Including Submitter Nos. 37, 64, 105, 145, 150, 174 and 212.

period and therefore that this provision is appropriate mitigation to address the submitter's concerns.

### **Specific Submissions**

- 73 In addition to the points addressed above, the following sections respond to other specific submissions<sup>69</sup>.

#### ***Auckland City Council***

- 74 Council<sup>70</sup> seeks approval for the Urban Design and Landscape Plans and Works on Council Land. I consider that amendments proposed to conditions by other technical experts as well as the discussion on conditions below and presented in the proposed conditions (**Annexure B**) address these submission matters.

#### ***Unitec Institute of Technology***

- 75 Unitec<sup>71</sup> raises the following issues:

75.1 Permitted Baseline - Future environment should be taken into account when establishing BPO mitigation.

75.2 *Response:* I am aware that Unitec has a Concept Development Plan for the Special Purpose 2 Zone and I have reviewed the information provided in the City of Auckland – District Plan; Isthmus. While it is acknowledged that 'Area B' provides for education and residential facilities amongst other things (including car parking, restaurants and commercial activities), it is also noted that such development is subject to development controls including Tree Protection (which relates to a number of trees on the sites northern boundary with SH16), Yards and Building Coverage.

Further, the area of Development Area – Area B is large and includes potential building platform areas at the north, south and east of the site (many beyond the area of emissions effect of the Project). No specific building platforms are indicated on the Concept Plan. As such, while there is a reasonable expectation of permitted residential development on this site, it is respectfully considered that the range of development options precludes specific assessment of a specific development as 'permitted baseline'.

Furthermore, and more significantly in this case, as reported in the modelling results of the noise assessment (presented in the evidence of Ms Siiri Wilkening<sup>72</sup>), the actual change in noise resulting from the Project at the northern boundary of

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<sup>69</sup> Again, for clarity I note that my first statement of evidence addresses matters raised by these submitters in regard to the designation process.

<sup>70</sup> Submitter No. 111.

<sup>71</sup> Submitter No. 160.

<sup>72</sup> Paragraphs 55 to 57

the site is minor (e.g. in the order of 1 decibel, which I am advised is not discernable) and as such any development of residential activity on the northern portion of this development area would have had to consider an existing noise environment similar to that with the Project. On this basis, I do not consider that it is necessary for any additional assessment of impact on this possible future development.

75.3 The submitter notes that the Oakley heritage building has Category 1 heritage status, and any alteration to the building will require the approval of the New Zealand Historic Places Trust.

75.4 The Historic Places Register is an information and advocacy tool for the protection of heritage that does not directly create regulatory controls for items registered. Any alterations required in future to the building as a result of Ms Siiri Wilkening's Category C assessment will be considered against the Auckland Council District Plan requirements. However, it is recommended that the NZTA consult with the NZHPT regarding the proposal due to its Category 1 status.

### **CONDITIONS**

76 To support the applications for designation and resource consents, the AEE included a complete suite of proposed conditions with the application (contained in Appendix E.1 of the AEE, updated in Appendix 9 of Technical Report G.31 prior to notification)<sup>73</sup>.

77 These conditions reflect the outcomes of the assessment of environmental effects and the relevant consent requirements. This suite of conditions was proposed to assist potential submitters to the applications to see how it was proposed that the potential adverse effects of the Project would be managed and mitigated.

78 In preparing the conditions, relevant authors/reviewers of the Technical Reports of the AEE were asked to review or draft conditions. The Planning Team was responsible for overall compilation of these proposed conditions.

79 Since lodgement and public notification of the applications for the Project, there have been a number of further inputs which have resulted in proposed amendments to these conditions. These include:

79.1 Ongoing consultation with landowners and other stakeholders including Iwi, Council's and schools;

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<sup>73</sup> As discussed at the conclusion of this evidence, in light of the evidence presented and in response to the submissions, a number of amendments are proposed to these Conditions (provided as **Annexure B** of my evidence).

- 79.2 Submissions received which have either sought specific amendment to conditions or sought relief which can best be implemented through conditions;
- 79.3 The 149G reports received by the EPA from the Councils; and
- 79.4 Further development of specific technical requirements in response to potential adverse effects identified in the AEE document (e.g. in relation to the southern and northern ventilation buildings and stacks).
- 80 In light of these inputs, the experts have reviewed and as appropriate suggested amendments to the proposed conditions. The specific reasons for the technical recommendations for these amendments are presented in the relevant expert evidence (where otherwise not obvious).
- 81 There are other issues that have been raised in respect of the proposed conditions. I now provide further consideration of these.

#### **Approvals Process – Construction Management**

- 82 In their submissions, the Auckland City Council and Auckland Regional Council<sup>74</sup> seek subsequent approval processes for a number of management plans, detailed design plans and monitoring. Similarly other submissions<sup>75</sup> seek that further approval processes are provided through the Outline Plan of Works and similar for the design of building, structures and other elements of the Project.
- 83 The Project provides detail on the height, shape, and bulk of the proposed State Highway project (set out in the Plans F.1, F.2 and F.8 of the AEE), the location on the work and construction yards, including vehicle accesses and parking (set out in the Plans F.2 of the AEE), the likely finished contour of the site (set out in the Plans F.3 of the AEE), and the landscaping proposed (set out in the Plans F.16 of the AEE). As such I consider that the details of the proposed works (required by Section 176A(3) have been provided and that as such an Outline Plan of Works is not required (pursuant to Section 176A(2)).
- 84 Furthermore, in my view, it is important that the conditions do not create a subsequent 'consenting process' duplicating the assessment that has already been presented and is currently the subject of this Hearing.
- 85 However, balanced with this, there is the need to recognise the detailed design and construction planning that has yet to be undertaken and the intent of the NZTA to contract the delivery of

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<sup>74</sup> Submission Nos. 111 and 207.

<sup>75</sup> Including Submitter Nos. 185, 186, 199, 202, 223, 225 and 230.

the Project through an Alliance (a consortia of designer, contractor and client).

- 86 In response to these factors, and as presented in the AEE and the evidence of Mr Leersnyder, it is proposed that a series of management plans are prepared to reflect how the specific performance standards (for example the noise criteria proposed by the conditions) will be met through the construction methodology. Combined, the construction management will be delivered through the Construction Environmental Management Plan (CEMP) prior to construction commencing. Given that these Plans will be reviewed, I consider it is appropriate that a review of the CEMP is undertaken by the Auckland Council to confirm that the specific construction methods and management techniques proposed will deliver the specific conditions imposed on the designations and consents. Amendment is made to the conditions (**Annexure B**) to reflect this approach.

#### **Approvals Process – Council Assets**

- 87 In some instances, it is recognised that the proposed conditions refer to planning and mitigation on Council assets. In particular, this relates to the proposed Open Space Restoration Planning process, integration with the transport network and the works to monitor and mitigate and effects on Council owned landfills (e.g. Phyllis Reserve)<sup>76</sup>.
- 88 In cases where the asset is owned by a third party (or where the intention is to transfer the ongoing operation and maintenance of assets to a third party), it is considered appropriate that there is an approval process in the development of mitigation and restoration plans. Amendment is made to the proposed conditions (**Annexure B**) to reflect this approach.

#### **Approvals Processes – Other**

- 89 It is acknowledged that in some areas of the Project, further detailed design will be undertaken and that the community and stakeholders should be involved in and inform this process. In particular, this relates to major structural elements of the Project such as the southern and northern ventilation buildings and the Great North Road interchange (as it relates to the Waterview Park). In response to this, it is proposed that these aspects of the Project include further consultation and review with stakeholders (including Iwi, Council and the community) prior to finalisation. Amendment is made to the proposed conditions (**Annexure B**) to reflect this approach.
- 90 In addition, it is recognised that the community and other groups have a kaitiaki or stewardship function. For example, it is important to acknowledge kaitiakitanga and the relationship tangata whenua

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<sup>76</sup> Refer specific conditions CL.9 and CL.10.

(Te Kawerau a Maki and Ngati Whatua) have with their taonga (particularly the Waitemata Harbour, Whau River and Oakley Creek / Te Auaunga) and the kaitiaki role of other groups such as Friends of Oakley Creek – Te Auaunga. Following review of the submissions from these submitters, and in response to ongoing discussions with these parties, amendments to the proposed conditions for the Community Liaison Group and Working Liaison Group are proposed to reflect and recognise these roles (**Annexure B**).



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**Amelia Linzey**  
**November 2010**

**Annexures:**

Annexure A – Table 12-1 of the AEE: Assessment and Technical Reports Presented in this AEE

Annexure B – Amended Proposed Conditions (as of 14 November 2010)

**ANNEXURE A: TABLE 12-1 OF THE AEE**

**Table 12-1 Assessment and Technical Reports Presented in the AEE**

<b>Matters Considered</b>	<b>Technical Reports in AEE (Part G) or (Appendices in Part E)</b>
<b>Human Environment (this assessment includes effects on neighbourhood and wider community including socio-economic and cultural effects (s2(a))<sup>1</sup></b>	
Land Use assessment, including assessment of impacts on Open Space	<i>E.4: Open Space Restoration Option</i>
Transport assessment, including assessment of impacts on the transport network during construction and operation	<i>G.16: Assessment of Temporary Traffic Effects</i> <i>G.18: Assessment of Transport Effects</i>
Effects of <b>Ground Settlement</b> (resulting from construction and operation of the Project) on built resources and the neighbourhood	<i>G.13: Assessment of Ground Settlement Effects</i>
<b>Social</b> impact assessment, including assessment of impacts of the construction and operation of the Project on communities and neighbourhoods	<i>G.14: Assessment of Social Impacts</i>
<b>Cultural</b> assessment, including assessment of impacts of the construction and operation of the Project on cultural values	<i>E.6: Cultural Impact Reports – Ngati Whatua o Orakei</i>
<b>Physical Locality Effects (this assessment includes effects on the locality, including landscape and visual (s2(b)))</b>	
<b>Visual and Landscape</b> assessment, including consideration of amenity impacts during construction and operation	<i>G20: Assessment of Visual and Landscape Effects</i>
Assessment of impacts of construction and operation of the Project on <b>Amenity Trees</b>	<i>E.7: Schedule of Trees</i>
<b>Effects on Natural and Physical Resources (this assessment includes effects on natural and physical resources of special value (s2(d)))</b>	
Assessment of <b>Archaeology and Heritage</b> effects, including identification and assessment of impacts of construction and operation of the Project on sites and areas of heritage and historic value	<i>G.2: Assessment of Archaeological Effects</i>
Assessment of the effects on <b>Streams</b> (as a natural resource), including the effects of stream realignment associated with the construction and operation of the Project	<i>G.15: Assessment of Stormwater and Streamworks Effects</i>
Assessment of the effects on <b>Coastal Processes</b> : the impacts and changes to the physical processes of the coastal marine environment (as a natural resource)	<i>G.4: Assessment of Coastal Processes</i>
Assessment of <b>Groundwater</b> (as a natural resource) effects of the construction and operation of the Project	<i>G.7: Assessment of Groundwater Effects</i>
<b>Ecosystem Effects (this assessment includes effects on plants, animals and habitats (s2(c)))</b>	
<b>Avian Ecology</b> , including consideration of impacts on avifauna and habitats for avifauna over construction and operation of the Project	<i>G.3: Assessment of Avian Ecological Effects</i>
<b>Marine Ecology</b> , including consideration of impacts on fauna and habitats for fauna in the coastal marine area	<i>G.11: Assessment of Marine Ecological Effects</i>
<b>Herpetofauna Ecology</b> , including consideration of impacts herpetofauna and habitats for herpetofauna over construction and operation of the Project	<i>G.8: Assessment of Herpetofauna Ecological Effects</i>
<b>Freshwater Ecology</b> , including consideration of impacts on fauna and habitats for fauna in freshwater areas	<i>G.6: Assessment of Freshwater Ecological Effects</i>
<b>Vegetation</b> ecology, including consideration of impacts of construction and operation of the project on significant vegetation and habitats for fauna	<i>G.17: Assessment of Terrestrial Vegetation Effects</i>

<sup>1</sup> In reference to Section 2 of Schedule 4 of the RMA.

Matters Considered	Technical Reports in AEE (Part G) or (Appendices in Part E)
<b>Effects of the Discharge of Contaminants into the Environment (this assessment includes the effects of discharge of noise, air, light and vibration (s2(e)))</b>	
<b>Air</b> Emissions, including assessment of impacts from the emissions to air during construction and operation of the Project	<i>G.1: Assessment of Air Quality Effects</i>
<b>Noise</b> Emissions, including assessment of impacts from noise emitting from the Project during construction and operation	<i>G.5: Assessment of Construction Noise Effects G12: Assessment of Operational Noise Effects</i>
<b>Vibration</b> Emissions, including assessment of impacts from vibration emitting from the Project during construction and operation	<i>G.19: Assessment of Vibration Effects</i>
<b>Light</b> Emissions, including assessment of impacts from light-spill from the Project during construction and operation	<i>G.10: Assessment of Lighting Effects</i>
Discharge of Contaminants ( <b>stormwater</b> ): including the effects of land disturbing activities and the discharge of contaminants from these activities to receiving environments	<i>G.15: Assessment of Stormwater and Streamworks Effects G.22 Erosion and Sediment Control Plan</i>
<b>Contamination Effects</b> , including the effects of construction works on contaminated land	<i>G.9: Assessment of Land and Groundwater Contamination</i>
<b>Other Effects on the neighbourhood and community through natural hazards or the use of hazardous substances (s2(f))</b>	
Effects of <b>Flooding</b> (resulting from construction and operation of the Project in the floodplain)	<i>G.15: Assessment of Stormwater and Streamworks Effects</i>

**ANNEXURE B: AMENDED PROPOSED CONDITIONS (AS OF  
14 NOVEMBER 2010)**

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14 November 2010

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## Proposed General Designation Conditions

DC.1	<p>Except as modified by the conditions below and subject to final design, the works shall be undertaken in general accordance with the information provided by the New Zealand Transport Authority (NZTA being the Requiring Authority), the Notice(s) of Requirement and the supporting documents, <u>and supplementary information provided in evidence</u>, as follows:</p> <p>(a) Waterview Connection Project. Assessment of Environmental Effects Report (dated August 2010). Parts A–E;</p> <p>(b) Waterview Connection Project. Assessment of Environmental Effects Report (dated August 2010). Part F: Plans and Drawings; and</p> <p>(c) Waterview Connection Project (SH16/SH20 Assessment of Environmental Effects Report (dated August 2010). Part G: Technical Reports:</p> <ul style="list-style-type: none"> <li>(i) Technical Report G.1 Assessment of Air Quality Effects</li> <li>(ii) Technical Report G.2 Assessment of Archaeological Effects</li> <li>(iii) Technical Report G.3 Assessment of Avian Ecological Effects</li> <li>(iv) Technical Report G.4 Assessment of Coastal Processes</li> <li>(v) Technical Report G.5 Assessment of Construction Noise Effects</li> <li>(vi) Technical Report G.6 Assessment of Freshwater Ecological Effects</li> <li>(vii) Technical Report G.7 Assessment of Groundwater Effects</li> <li>(viii) Technical Report G.8 Assessment of Herpetofauna Ecological Effects</li> <li>(ix) Technical Report G.9 Assessment of Land and Groundwater Contamination</li> <li>(x) Technical Report G.10 Assessment of Lighting Effects</li> <li>(xi) Technical Report G.11 Assessment of Marine Ecological Effects</li> <li>(xii) Technical Report G.12 Assessment of Operational Noise Effects</li> <li>(xiii) Technical Report G.13 Assessment of Ground Settlement Effects</li> <li>(xiv) Technical Report G.14 Assessment of Social Effects</li> <li>(xv) Technical Report G.15 Assessment of Stormwater and Streamworks Effects</li> <li>(xvi) Technical Report G.16 Assessment of Temporary Traffic Effects</li> <li>(xvii) Technical Report G.17 Assessment of Terrestrial Vegetation Effects</li> <li>(xviii) Technical Report G.18 Assessment of Transport Effects</li> <li>(xix) Technical Report G.19 Assessment of Vibration Effects</li> <li>(xx) Technical Report G.20 Assessment of Visual and Landscape Effects</li> <li>(xxi) Technical Report G.21 Construction Environmental Management Plan (CEMP)</li> <li>(xxii) Technical Report G.22 Erosion and Sediment Control Plan (ESCP)</li> <li>(xxiii) Technical Report G.23 Coastal Works</li> <li>(xxiv) Technical Report G.24 Geotechnical Interpretive Report</li> <li>(xxv) Technical Report G.25 Traffic Modelling Report</li> <li>(xxvi) Technical Report G.26 Operational Model Validation Report</li> <li>(xxvii) Technical Report G.27 Stormwater Design Philosophy Statement</li> <li>(xxviii) Technical Report G.28 Geotechnical Factual Report – 500 Series</li> <li>(xxix) Technical Report G.29 Geotechnical Factual Report – 700 Series</li> </ul>
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**Proposed General Designation Conditions**

	(xxx) Technical Report G.30 Assessment of Associated Sediment and Contaminant Loads
DC.2	The period within which this designation shall lapse if not given effect to shall be 10 years from the date on which it is confirmed in accordance with Section 184(1) of the Resource Management Act 1991.
DC.3	The NZTA shall <u>update and finalise</u> <del>submit</del> the relevant <u>construction and operational Management Plans</u> required under these conditions ( <del>Construction Environmental Management Plan, Construction Traffic Management Plan, Construction Noise and Vibration Management Plan, Construction Air Quality Management Plan, Ecological Management Plan</del> <u>to ensure compliance with the designation conditions imposed by the Board of Inquiry. The relevant Management Plans shall be submitted to the Auckland Council within the timeframes specified in the following conditions.</u> <del>for review at least 20 working days prior to the commencement of works to ensure compliance and consistency with the conditions.</del>
DC.4	Any Management Plans submitted to the Auckland Council 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.
DC.5	The works shall be undertaken in accordance with the Management Plans referred to in Conditions DC.3 and DC.4.

**Proposed CEMP Conditions**

CEMP.1	<p>The NZTA shall update and finalise the draft Construction Environmental Management Plan (CEMP) submitted with this application to ensure compliance with the [consent and designation] conditions imposed by the Board of Inquiry. The CEMP shall be provided to the <u>Manager, Major Consents</u>, Auckland Council for <u>review</u> at least 20 working days <u>prior to the commencement of works to ensure compliance and consistency with the conditions before construction commences.</u></p>
CEMP.2	<p>The CEMP shall include, but not be limited to, details of:</p> <ul style="list-style-type: none"> <li>(a) Staff and contractors' responsibilities;</li> <li>(b) Training requirements for employees, sub-contractors and visitors;</li> <li>(c) Environmental incident and emergency management;</li> <li>(d) Communication and interface procedures;</li> <li>(e) Environmental complaints management;</li> <li>(f) Compliance monitoring;</li> <li>(g) Reporting;</li> <li>(h) Environmental auditing;</li> <li>(i) Corrective Action.</li> </ul>
CEMP.3	<p>Complaints shall be managed in accordance with the environmental complaints section detailed in the CEMP. A record of any complaints received in relation to the construction activities and the responses made shall be provided on a three monthly basis to the Auckland Council.</p>

**Proposed CEMP Conditions**

CEMP.4	<p>The management of key environmental effects associated with the construction phase of the Project shall be detailed within environmental management plans that are included in the appendices to the CEMP. This suite of management plans shall be:</p> <ul style="list-style-type: none"> <li>(a) Construction Noise and Vibration Management Plan (CNVMP);</li> <li>(b) Construction Air Quality Management Plan (CAQMP);</li> <li>(c) Erosion and Sediment Control Plan (ESCP);</li> <li>(d) Temporary Stormwater Management Plan (TSMP);</li> <li>(e) Ecological Management Plan (ECOMP);</li> <li>(f) Groundwater Management Plan (GWMP);</li> <li>(g) Settlement Effects Management Plan (SEMP);</li> <li>(h) Contaminated Soils Management Plan (CSMP);</li> <li>(i) Hazardous Substances Management Plan (HSMP);</li> <li>(j) Archaeological Site Management Plan (ASMP);</li> <li>(k) Construction Traffic Management Plan (CTMP);</li> <li>(l) Concrete Batching and Crushing Plant Management Plan (CBCPMP); <u>and</u></li> <li>(m) <u>Electrical Infrastructure Site Development and Construction Management Plan (EISDCMP)</u></li> </ul>
CEMP.5	<p>The CEMP shall be implemented and maintained throughout the entire construction period.</p>
CEMP.6	<p>A copy of the CEMP shall be held on the construction site at all times and be available for inspection on request by the Auckland Council.</p>

### Proposed CEMP Conditions

CEMP.7	<p>The finalised CEMP shall include specific details on demolition, construction and management of all works associated with the Project, including:</p> <ul style="list-style-type: none"> <li>(a) Details of the site or project manager and the construction liaison person, including their contact details (phone, facsimile, postal address, email address);</li> <li>(b) The location of large notice boards that clearly identify NZTA and the Project name, together with the name, telephone, email address and address for service of the site or project manager and the construction liaison person;</li> <li>(c) An outline construction programme of the work indicating in particular likely time periods for road closures and anticipated traffic diversion effects;</li> <li>(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 nights, on Sunday and during public holidays;</li> <li>(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;</li> <li>(f) Location of workers offices and conveniences (e.g. portaloos);</li> <li>(g) Procedures of controlling sediment run-off, dust and the removal of soil, debris and demolition and construction materials from public roads or places. Dust mitigation measures should include use of water sprays to control dust nuisance on dry or windy days;</li> <li>(h) Methods to stabilise ingress and egress points to construction sites, to the standard required by ARC Technical Publication 90 (Nov 2007);</li> <li>(i) Procedures for ensuring that residents in the immediate vicinity of construction areas are given notice of the commencement of construction activities and are informed about the expected duration of the works, potentially through the construction liaison person;</li> <li>(j) Procedures to be followed to ensure that those working in the vicinity of identified heritage and ecological features are aware of the heritage or ecological values of these features and the steps which need to be taken to meet the conditions applying to work on the site;</li> <li>(k) Means of ensuring the safety of the general public;</li> </ul>
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**Proposed CEMP Conditions**

	<ul style="list-style-type: none"> <li>(l) Procedures for the construction liaison person to receive and respond to complaints about construction activities, including dust and odour from the works;</li> <li>(m) Methods of mitigating the local and network wide effects of construction of individual elements of the Project, including measures to ensure that parking of staff vehicles on surrounding streets is restricted;</li> <li>(n) The layout of the 12 Construction Yards, including associated buildings, fencing and site access, in accordance with Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112. The layout drawings shall, as far as practicable, incorporate the following: <ul style="list-style-type: none"> <li>(i) The main access to the construction yards to be located as far as practicable from residential dwellings, in the locations shown on Waterview Connection Project Construction Yards Drawing No.s 20.1.11-3-D-C-913-101 to 112;</li> <li>(ii) Noisy construction activities to be located as far as practicable, and preferably no less than 100m, from residential dwellings;</li> <li>(iii) Construction of temporary boundary/ security fences to be undertaken in a manner which minimises impacts on existing trees;</li> <li>(iv) Temporary acoustic fences and visual barriers;</li> <li>(v) Temporary buildings greater than 8 metres in height to be located in a position which minimises visual impact on adjacent residential dwellings.</li> </ul> </li> <li>(o) All temporary boundary/ security fences shall be maintained in good order, with any graffiti removed as soon as possible;</li> <li>(p) Methods to minimise <b>removal</b> and protect trees identified in Schedule E.7 of the Waterview Connection Assessment of Environmental Effects.</li> </ul>
CEMP.8	All storage of material and equipment associated with the construction works shall take place within the boundaries of the designation.

**Proposed CEMP Conditions**

CEMP.9	Temporary protection shall be installed to prevent vehicles damaging drains, footpaths, berms, kerbs, vehicle crossings and the roads during the site preparation and construction phase of the Project. Any damage to the drains, footpaths, berms, kerbs, vehicle crossings and the road attributable to any vehicle associated with construction activities shall be repaired to the same or similar standards as existed prior to such damage at no cost to the Auckland Council
CEMP.10	The NZTA shall finalise and implement a Hazardous Substances Management Plan (HSMP), through the CEMP, submitted with this application, prior to works commencing on site. The HSMP shall clearly identify the requirements for proper storage, handling, transport and disposal of hazardous substances during the construction phase of the Project.
CEMP.11	The NZTA shall develop and implement a Waste Management Plan in general accordance with the waste management principles, controls and methods set out in the CEMP. The Plan shall be provided to the Auckland Council and be implemented throughout the entire construction period.
CEMP.12	<p>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:</p> <ul style="list-style-type: none"> <li>(a) Compliance with designation and consent conditions;</li> <li>(b) Any changes to construction methods;</li> <li>(c) Key changes to roles and responsibilities within the project;</li> <li>(d) Changes in industry best practice standards;</li> <li>(e) Changes in legal or other requirements;</li> <li>(f) Results of inspections, monitoring, incidents, corrective actions, internal or external assessments; and</li> <li>(g) Public complaints.</li> </ul> <p>A summary of the review process undertaken shall be kept by the NZTA and made available to the Auckland Council upon request.</p>
CEMP.13	Following the review process, the CEMP may require updating. Any material changes proposed to the CEMP (such as changes to the complaints procedure or changes to the construction methodology) shall be submitted for the approval of the Auckland Council at least 10 working days prior to the proposed changes taking effect. (Note: For clarity, changes to personnel and contact schedules do not constitute a material change).

## Proposed CEMP Conditions

CEMP.14	<p><u>The CEMP shall include, as an appendix, an Electrical Infrastructure Site Development and Construction Management Plan (EISDCMP). That Plan is to include:</u></p> <p>(a) <u>Methods and measures:</u></p> <p>(i) <u>To ensure that the existing high voltage infrastructure can be accessed for maintenance at all reasonable times, or emergency works at all times, during and after construction activities.</u></p> <p>(ii) <u>To appropriately manage the effects of dust and any other material potentially resulting from construction activities and able to cause material damage, beyond normal wear and tear, to the overhead transmission lines</u></p> <p>(iii) <u>To ensure that no activity is undertaken during construction that would result in ground vibrations and/or ground instability likely to cause material damage to the transmission lines, including support structures.</u></p> <p>(iv) <u>To ensure that changes to the drainage patterns and runoff characteristics do not result in adverse effects from stormwater on the foundations for any high voltage transmission line support structure.</u></p> <p>(b) <u>Sufficient detail to confirm that new planting and maintenance of vegetation will comply with the New Zealand Electricity (Hazard from Trees) Regulations 2003, including, but not limited to, the provisions of Schedule (Growth Limit Zones) to those Regulations.</u></p> <p>(c) <u>Sufficient detail to confirm that the works will comply with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP 34:2001), including, but not limited to, the provisions of:</u></p> <p>(i) <u>Clause 2.2 with respect to excavations near overhead support structures;</u></p> <p>(ii) <u>Clause 2.4 with respect to buildings near overhead support structures;</u></p> <p>(iii) <u>Section 3 with respect to minimum separation between buildings and conductors;</u></p> <p>(iv) <u>Section 5 with respect to minimum safe distances for the operation of mobile plant; and,</u></p> <p>(v) <u>Table 4 with respect to minimum safe separation distances between the ground and the overhead conductors.</u></p> <p><u>Note: With respect to clause (c), specific consideration must be given to the height and location of temporary structures (such as project offices and other construction site facilities) and permanent structures (such as lighting poles, signage, gantries and acoustic barriers).</u></p>
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**Proposed Public Information Conditions**

<p>PI.1.</p>	<p>A construction liaison person shall be appointed by the NZTA for the duration of the construction phase of the Project to be the main and readily accessible point of contact for persons affected by the Project. The liaison person's name and contact details shall be made available in the CEMP and on site signage by the NZTA. This person must be reasonably available for ongoing consultation on all matters of concern to affected parties arising from the Project.</p>
<p>PI.2.</p>	<p>The NZTA shall prepare and implement through the CEMP, a Communications Plan that sets out procedures detailing how the public will be communicated with throughout the construction period. The Communications Plan shall be written in accordance with the external communication procedures set out in the CEMP <u>and provided to the Auckland Council and the Community Liaison Group(s) established by Condition PI.5.</u></p>
<p>PI.3.</p>	<p>At least three weeks prior to the commencement of construction, and at three weekly 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 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:</p> <ul style="list-style-type: none"> <li>(a) Any traffic disruptions or controls or changes to property access; and</li> <li>(b) Any other construction activities as highlighted in the conditions.</li> </ul>

**Proposed Public Information Conditions**

<p>PI.4.</p>	<p>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:</p> <ul style="list-style-type: none"> <li>(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;</li> <li>(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;</li> <li>(c) Upon receiving a complaint, within 10 days of complaint receipt, a formal written response will be provided to the complainant and Auckland Council;</li> <li>(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; and</li> <li>(e) All information collected in conditions PI.4 (b), (c) and (d) shall be detailed in a Construction Compliance Report (including the means by which the complaint was addressed, whether resolution was reached and how the response was carried out) prepared by the NZTA. This Report shall be submitted to the Auckland Council on a quarterly basis commencing at the beginning of the works and for the entire duration of construction.</li> </ul>
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**Proposed Public Information Conditions**

<p>PI.5.</p>	<p>The NZTA shall establish Community Liaison Group(s) at least 2 months prior to construction commencing <u>in each of the following key construction areas:</u></p> <ul style="list-style-type: none"> <li>(a) <u>Te Atatu</u></li> <li>(b) <u>Waterview</u></li> <li>(c) <u>Owairaka</u></li> </ul> <p>and hold regular meetings throughout the construction period <u>relevant to these areas.</u></p> <p>The Community Liaison Group shall be open to all interested parties within the Project area including, but not limited to the following groups:</p> <ul style="list-style-type: none"> <li>(a) <u>Auckland Council and Community Boards;</u></li> <li>(b) Educational facilities within the Project area (including schools, kindergartens, childcare, <u>Unitec Institute of Technology</u>);</li> <li>(c) Relevant community/ environmental groups and representatives of local residents;</li> <li>(d) Department of Conservation;</li> <li>(e) Auckland Council;</li> <li>(f) Relevant Iwi groups; and</li> <li>(g) Public transport providers.</li> </ul> <p><del>The purpose of the Community Liaison Group 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</del></p>
<p>PI.6.</p>	<p><del>The purpose of the Community Liaison Group(s) is to provide a regular forum through which information about the Project can be provided to the community, and an opportunity for concerns or issues to be raised. The Community Liaison Group(s) shall be provided an opportunity to review and comment on the following (amongst other things):</del></p> <ul style="list-style-type: none"> <li>(a) <u>Open Space and Restoration Plans;</u></li> <li>(b) <u>Finalisation and amendment to Urban Design and Landscape Plans;</u></li> <li>(c) <u>Finalisation of designs for the northern and southern ventilation buildings and stacks; and</u></li> <li>(d) <u>The Oakley Inlet Heritage Plan.</u></li> </ul>
<p>PI.7.</p>	<p><u>Where access to Oakley Creek will be disrupted for more than 3 days, or over a weekend, or there is no provision for a walkway detour, the Community Liaison Person shall notify the Friends of Oakley Creek at least 20 working days in advance of any planned disruption (except where the disruption is of shorter duration, or an emergency situation).</u></p>

**Proposed Temporary Traffic Conditions**

<p>TT.1</p>	<p>The NZTA shall update and finalise the Construction Traffic Management Plan (CTMP) submitted with this application, in accordance with these conditions, and implement it through the CEMP.</p> <p>In finalising the CTMP, the NZTA shall:</p> <p>(a) <del>Use advanced traffic</del> <u>Provide simulation</u> modelling <del>demonstrations tools</del> to better understand the effects of construction of the Project on the affected road network; and</p> <p>(b) As far as practicable, include measures to avoid road closures and also restrictions of vehicle and pedestrian movements.</p>
<p>TT.2</p>	<p>The CTMP shall require the development of Site Specific Traffic Management Plans (SSTMPs) <u>and approval by the Manager, Auckland Transport,</u> for each construction activity that may affect traffic or transportation infrastructure and services. <u>The SSTMPs shall be provided at least 10 working days prior to each construction activity.</u></p>

**Proposed Temporary Traffic Conditions**

<p>TT.3</p>	<p>Each SSTMP shall describe the measures that will be undertaken to address as far as practicable methods of avoiding, remedying or mitigating the local and network wide effects of construction of the Project, as far as practicable. In particular, the SSTMP shall include the following matters:</p> <ul style="list-style-type: none"> <li>(a) Traffic management measures to address and maintain, traffic capacity, including bus services, at traffic peak hours during weekdays and weekends (in Te Atatu Road, Great North Road and Richardson Road);</li> <li>(b) Methods to manage the effects of traffic during construction including the requirement to detour or divert traffic. These methods shall seek to avoid, remedy or mitigate effects on access to and from businesses and other organisations in the area;</li> <li>(c) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses;</li> <li>(d) Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the project (e.g. intersections/ overbridges) and the use of staging to allow sections of the Project to be opened to the traffic while other sections are still under construction;</li> <li>(e) Methods to manage the effects of the delivery of construction material, plant and machinery (including cranes and oversized trucks) during construction;</li> <li>(f) Any routes where construction traffic movements will be restricted (either for particular times for construction periods);</li> <li>(g) Measures to maintain existing vehicle access, as far as practicable, or where the existing property access is to be removed or becomes unsafe as a result of the construction works, measures to provide alternative access arrangements in consultation with the Auckland Council and the affected landowner; and</li> <li>(h) Measures to maintain pedestrian access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, where practicable. Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours.</li> </ul>
<p>TT.4</p>	<p>The SSTMPs shall include traffic management measures developed in consultation with the Auckland Transport Authority (ATA), Bus and Coach Association and the Auckland Council, to address and maintain, where practicable, traffic capacity at peak hours to provide for passenger transport services on the road network.</p>

**Proposed Temporary Traffic Conditions**

TT.5	The NZTA shall consult with the Auckland Council with regard to the most appropriate means for providing access on Council roads within and adjacent to the designation. The NZTA shall also coordinate and consult directly with the proponents of any major construction occurring concurrently with, and in the vicinity of the Project.
TT.6	The NZTA shall maintain, as far as practicable, continued public walking and cycling passage along the existing Northwestern Cycleway (between Te Atatu Interchange and St Lukes Interchange) and along Great North Road <u>and the Oakley Creek walkway</u> .
TT.7	The NZTA shall undertake construction works so as to avoid the full closure of Te Atatu Road for residents on the Te Atatu Peninsula.
TT.8	<p>The NZTA shall restrict construction truck movements during peak hours (6:00 to 9:00 and <del>15:00</del> to <del>18:00</del>) to avoid the following:</p> <ul style="list-style-type: none"> <li>(a) Te Atatu Road Interchange, during both morning and afternoon peak hours</li> <li>(b) Great North Road Interchange, city bound during the morning peak hours</li> <li>(c) Great North Road Interchange, west bound and onto Great North road during the afternoon peak.</li> </ul> <p>Construction truck movements during these hours shall only be allowed under exceptional circumstances agreed in advance with the Auckland Council.</p>
TT.9	<p><u>The NZTA shall maintain at least the existing land configuration capacity on SH16, at the Te Atatu Interchange area, and on Great North Road during peak periods being 6:00 to 9:00 and 16:00 to 19:00 for the duration of the temporary construction programme.</u></p>
TT.10	<p>The NZTA shall monitor the impact of construction traffic in terms of traffic speeds and volumes on SH16, Great North Road, Te Atatu Road and Richardson Road throughout the construction period to confirm the expected traffic effects as set out in the <i>Temporary Traffic Assessment</i> (Technical Report G.16) submitted with this application.</p> <ul style="list-style-type: none"> <li>(a) This monitoring will be undertaken [monthly / weekly / daily]; and</li> <li>(b) Monitoring results will be made available to the Auckland Council on request.</li> </ul>

### Proposed Temporary Traffic Conditions

TT.11	If monitoring undertaken pursuant to Condition TT.9 indicates that traffic volumes are significantly different from those expected, the SSTMPs will be reviewed and as appropriate amended to the satisfaction of <del>the [Auckland Council]</del> <u>the Traffic Management Project Governance Group</u> .
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### Proposed Operational Traffic Conditions

	<p><b>Integration with Local Road Network</b></p>
<p>OT.1</p>	<p>The NZTA shall prepare <u>in consultation with Auckland transport agencies</u> a Network Integration Plan (NIP) to demonstrate how the Project integrates with the existing local road network and with future improvements (identified in the <u>Western Ring Route (Northwest) Network Plan</u>) planned by the Auckland Council. The NIP shall include details of <del>completed</del> <u>proposed</u> physical works at the interface between the State highway and the local road network, and shall address such matters as <u>pedestrian/ cycle ways</u>, lane configuration, traffic signal co-ordination, signage and provision for buses.</p> <p><u>In addition, the NIP will consider and identify:</u></p> <ul style="list-style-type: none"> <li>(a) <u>Opportunities to progress bus priority measures and pedestrian way on Great North Road between Oakley Avenue and the Great North Road Interchange (northbound) and to the existing pedestrian/cycle bridge over Great North Road (where these can be achieved in the existing designation).</u></li> <li>(b) <u>Opportunities to provide a 2m footpath on Richardson Road Bridge, subject to confirming appropriate bus stop locations; and</u></li> <li>(c) <u>Integration of the works proposed on Te Atatu Road to appropriately transition between the Waterview Connection Project and any projects being progressed by Auckland Transport</u></li> </ul> <p>The NIP, for either the Project or relevant Project stage, shall be submitted <u>for review</u> to the <u>Manager, Auckland Transport</u><del>[Auckland Council]</del>.</p>
	<p><b>Tunnel Traffic <u>Operation Management</u> Plan</b></p>
<p>OT.2</p>	<p>The NZTA shall prepare a Tunnel Traffic <u>Operation Management</u> Plan in consultation with the <del>[Auckland Council]</del> <u>Auckland Transport</u>. The plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) Procedures for maintenance requirements.</li> <li>(b) Procedures for managing traffic to avoid or minimise potential congestion within the tunnel, particularly during peak periods.</li> <li>(c) Procedures for the management of traffic during incidents.</li> <li><u>d) Procedures for the operation of tunnel fans and the management of portal emissions.</u></li> </ul> <p><u>The Tunnel Traffic Operation Plan shall be completed within 3 months of practicable completion of SH20.</u></p>

**Proposed Noise and Vibration Conditions – Construction**

<p>CNV.1</p>	<p>The NZTA shall <del>finalise and</del> implement <del>through the CEMP, and maintain</del> a Construction Noise and Vibration Management Plan (CNVMP) throughout the entire construction period of the Project.</p> <p>The CNVMP shall describe the measures adopted to, as far as practicable, meet:</p> <p>(a) the noise criteria set out in Condition CNV.2 <del>and 3</del> below; and</p> <p>(b) the vibration criteria set out in Condition CNV.<del>34</del> below.</p> <p>The CNVMP shall, as a minimum, address the following:</p> <ul style="list-style-type: none"> <li>(i) Construction noise and vibration criteria;</li> <li>(ii) Hours of operation, including times and days when noisy and/or vibration inducing construction activities would occur;</li> <li>(iii) Machinery and equipment to be used;</li> <li>(iv) Vibration testing of equipment to confirm safe distances to buildings prior to construction;</li> <li>(v) Preparation of building condition surveys of critical dwellings prior to, during and after completion of construction works;</li> <li>(vi) Roles and responsibilities of personnel on site;</li> <li>(vii) Construction operator training procedures;</li> <li>(viii) Methods for monitoring and reporting on construction noise and vibration;</li> <li>(ix) Mitigation options, including alternative strategies where full compliance with the relevant noise and/or vibration criteria cannot be achieved;</li> <li>(x) Management schedules containing site specific information;</li> <li><del>(xi)</del> Measures for liaising with and notifying potentially affected receivers of proposed construction activities; <del>and</del></li> <li><del>(xii)</del> Methods for receiving and handling complaints about construction noise and vibration; <del>and-</del></li> <li><u>(xi) Measures for preventing the occurrence of rogue fly rock, including management of charge weights and face loading procedures, stemming of charge holes and profiling of the face to maintain minimum burden (face cover).</u></li> </ul>
<p>CNV.2</p>	<p>Construction noise <del>(excluding noise from blasting Monday to Saturday inclusive)</del> shall be measured and assessed in accordance with NZS 6803:1999 “Acoustics – Construction Noise” and shall, as far as practicable, comply with the following criteria:</p>

**Proposed Noise and Vibration Conditions – Construction**

CNV.2  
cont.

i. Project Construction Noise Criteria: Residential Receivers

Time of week	Time period	Project Construction Noise Criteria (Long Term Construction) dB		
		Sectors 1 to 7	Sectors 8 and 9	All Sectors
		L <sub>Aeq</sub> (10 - 60 min)	L <sub>Aeq</sub> (10 - 60 min))	L <sub>A</sub> F <sub>max</sub>
Monday – Saturday	0630–0730	60	45	75
	0730–1800	70	70	85
	1800–2000	65	65	80
	2000–0630	60	45	75
Sundays and Public Holidays	0630–0730	45	45	75
	0730–1800	60	45	85
	1800–2000	45	45	75
	2000–0630	45	45	75

ii. Project Construction Noise Criteria: Commercial and Industrial Receivers

Time period	Project Construction Noise Criteria (Long Term Construction) dB
	L <sub>Aeq</sub> (10 to 60 min)
0730–1800	70
1800–0730	75

**Proposed Noise and Vibration Conditions – Construction**

CNV.2  
cont.

iii. Project Construction Noise Criteria: Internal Structure-borne Noise for Residential Receivers

<b>Time period</b>	<b>Project Construction Noise Criteria Inside</b>	
<del>0600-2200</del> <del>0730-1800</del>	35 dB LAeq(16hr)	All habitable rooms
<del>2200-0600</del> <del>1800-0730</del>	30 dB LAeq( <del>+6hr</del> )(8hr)	Bedrooms

iv. Project Construction Noise Criteria: Internal noise for Licensed Educational Facilities

<u>Time period</u>	<u>Project Construction Noise Criteria Inside</u>	
<u>0900 - 1500</u>	<u>45 dB LAeq(6hr)</u>	<u>Classrooms, library, offices</u>
<u>0900 - 1500</u>	<u>40 dB LAeq(6hr)</u>	<u>School hall</u>

**Proposed Noise and Vibration Conditions – Construction**

<u>CNV.3</u>	<u>Project Construction Noise Criteria: Airblast (excluding Sundays)</u>		
	Category	Type of Blasting Operations	Peak Sound Pressure Level (L <sub>Zpeak</sub> dB)
	<b>Human Comfort Limits</b>		
	Sensitive Site	Operations lasting longer than 12 months or more than 20 Blasts	<b>115 dB</b> for 95% blasts per year. <b>120 dB</b> maximum unless agreement is reached with occupier that a higher limit may apply
	Sensitive Site	Operations lasting less than 12 months or less than 20 Blasts	<b>120 dB</b> for 95% blasts per year. <b>125 dB</b> maximum unless agreement is reached with occupier that a higher limit may apply
	Occupied non-sensitive sites such as factories and commercial premises	All blasting	<b>125 dB</b> maximum unless agreement is reached with the occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer’s specifications of levels that can be shown to adversely affect the equipment operation
	<b>Damage Control Limits</b>		
	Structures that include masonry, plaster and plasterboard in their construction and also unoccupied structures of reinforced concrete or steel construction	All Blasting	<b>133 dB</b> unless agreement is reached with owner that a higher limit may apply.
Service structures such as pipelines, powerlines and cables located above ground	All Blasting	Limit to be determined by structural design methodology	
CNV.4	Construction vibration received by any building shall be measured and assessed in accordance with the German Standard DIN 4150-3:1999 “Structural vibration – Part 3: Effects of vibration on structures”, and shall, as far as practicable, comply with the criteria set out in that Standard.		
CNV.5	Notwithstanding Condition CNV.3 above,  (a) Blasting activities shall be conducted so that 95% of the blasts undertaken (measured over any twenty blasts on the foundation of any building outside the designation boundary) shall produce peak particle velocities not exceeding 5mm/s and 100% of the blasts undertaken shall produce peak particle velocities not exceeding 10mm/s		

**Proposed Noise and Vibration Conditions – Construction**

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

**Proposed Noise Conditions – Operation**

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

**Proposed Noise Conditions – Operation**

<p>ON.3</p>	<p>The detailed design of the structural mitigation measures of the “Preferred Mitigation Options” (the Detailed Mitigation Options) shall be undertaken by a suitably qualified acoustics specialist prior to construction of the Project, and, subject to [Condition 4], shall include, as a minimum, the following:</p> <ul style="list-style-type: none"> <li>(a) Noise barriers with the location, length and height in general accordance with Appendix E; and</li> <li>(b) A requirement that Open Graded Porous Asphalt (“OGPA”) or equivalent low-noise generating road surface be used on all surface roads throughout the Project, except at the Great North Road Interchange; and</li> <li>(c) For the Great North Road Interchange, a requirement that Twin Layer Open Graded Porous Asphalt (“Twin Layer OGPA”) or equivalent low-noise generating road surface be used as shown in Appendix E.</li> </ul>
<p>ON.4</p>	<p>Where the design of the Detailed Mitigation Options identifies that it is not practicable to implement a particular structural mitigation measure in the location or of the length or height included in the “Preferred Mitigation Options”, either:</p> <ul style="list-style-type: none"> <li>(a) If the design of the structural mitigation measures could be changed and would still achieve the same Identified Category at all relevant PPFs, and a suitably qualified planner approved by the Auckland Council certifies to the Auckland Council that the changed structural mitigation measure would be consistent with adopting BPO in accordance with NZS 6806:2010, the Detailed Mitigation Options may include the changed mitigation measures; or</li> <li>(b) If the changed design of the structural mitigation measure would change the Noise Criteria Category at any relevant PPF from Category A or B to Category C but Auckland Council confirms that the changed structural mitigation measure would be consistent with adopting BPO in accordance with NZS 6806:2010, the Detailed Mitigation Options may include the changed structural mitigation measures.</li> </ul>
<p>ON.5</p>	<p>The Detailed Mitigation Options shall be implemented prior to completion of construction of the Project.</p>

### Proposed Noise Conditions – Operation

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

**Proposed Noise Conditions – Operation**

<p>ON.9</p>	<p>Subject to Condition ON.8, within 6 months of the assessment required under Condition [7(b)], the NZTA shall give written notice to the owner of each Category C Building:</p> <p>(a) Advising of the options available for Building Modification Mitigation to the building; and                  (b) Advising that the owner has three months within which to decide whether to accept Building Modification Mitigation for the building, and if the NZTA has advised the owner that more than one options for building modification mitigation is available, to advise which of those options the owner prefers.</p>																								
<p>ON.10</p>	<p>Once an agreement on Building Modification Mitigation is reached between the NZTA and the owner of an affected building, the mitigation shall be implemented in a reasonable and practical timeframe agreed between the NZTA and the owner.</p>																								
<p>ON.11</p>	<p>Subject to Condition 8, where Building Modification Mitigation is required, the NZTA shall be deemed to have complied with [Condition 10] above where:</p> <p>(a) The NZTA has completed Building Modification Mitigation to the Category C Building; or                  (b) The owner (s) of the Category C Building did not accept the NZTA’s offer to implement Building Modification Mitigation prior to the expiry of the timeframe stated in [Condition 9(b)] above (including where the owner9s) did not respond to the Requiring Authority within that period); or                  (c) The owner of the Category C Building cannot, after reasonable enquiry, be found prior to completion of construction of the Project.</p>																								
<p>ON.12</p>	<p>The NZTA shall manage and maintain the Detailed Mitigation Options to ensure that, to the extent practicable; those mitigation works are maintained to retain their noise attenuation performance until the Design Year.</p>																								
<p>ON.13</p>	<p>All mechanical services associated with the general operation of the tunnels shall be designed such that noise emissions do not exceed the following noise limits, when measured at or within the boundary of any residential-zoned site:</p> <table data-bbox="395 1697 1407 1877"> <tr> <td>Monday to Saturday</td> <td>7 am to 10 pm</td> <td>50</td> <td>dB</td> <td>L<sub>Aeq</sub>(15</td> <td>min)</td> </tr> <tr> <td>Sunday &amp; Public Holidays</td> <td>9 am to 6 pm</td> <td>50</td> <td>dB</td> <td>L<sub>Aeq</sub>(15</td> <td>min)</td> </tr> <tr> <td>At all other times</td> <td></td> <td>40</td> <td>dB</td> <td>L<sub>Aeq</sub>(15</td> <td>min)</td> </tr> <tr> <td></td> <td></td> <td>75 dB</td> <td>L<sub>Amax</sub></td> <td></td> <td></td> </tr> </table>	Monday to Saturday	7 am to 10 pm	50	dB	L <sub>Aeq</sub> (15	min)	Sunday & Public Holidays	9 am to 6 pm	50	dB	L <sub>Aeq</sub> (15	min)	At all other times		40	dB	L <sub>Aeq</sub> (15	min)			75 dB	L <sub>Amax</sub>		
Monday to Saturday	7 am to 10 pm	50	dB	L <sub>Aeq</sub> (15	min)																				
Sunday & Public Holidays	9 am to 6 pm	50	dB	L <sub>Aeq</sub> (15	min)																				
At all other times		40	dB	L <sub>Aeq</sub> (15	min)																				
		75 dB	L <sub>Amax</sub>																						

**Proposed Noise Conditions – Operation**

<p><del>ON.14</del></p>	<p><del>Emergency mechanical services associated with the operation of the tunnels shall be designed such that noise emissions do not exceed the following noise limits, when measured at or within the boundary of any residential-zoned site:</del></p> <p style="text-align: center;"><del>At all times <math>65 \text{ dB } L_{Aeq}(15 \text{ min})</math></del></p> <p><del>Any testing of these emergency mechanical services shall occur between the weekday hours of 7am to 10am or 4pm to 6pm.</del></p>
<p>ON.14</p>	<p>(a) <u>Prior to construction, the NZTA shall arrange for a suitably qualified acoustics specialist to undertake a minimum of 8 (eight) representative measurements of ambient noise levels. Measurements shall be undertaken in accordance with the requirements of Section 5.2 of NZS6806:2010.</u></p> <p>(b) <u>Following completion of the work, the NZTA shall arrange for a suitably qualified acoustics specialist to undertake traffic noise monitoring at the same sites surveyed in ON.14 (a) above, within 2 to 3 years following completion of construction of the Project. Measurements shall be undertaken in accordance with the requirements of Section 5.2 of NZS6806:2010.</u></p>

**Proposed Vibration Conditions – Operation**

<p>V.1</p>	<p>Existing ambient vibration levels shall be measured at critical locations nominated by the NZTA, and submitted to the Auckland Council prior to the commencement of works. These baseline measurements will establish pre-Project vibration levels for comparison with future vibration levels.</p>
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**Proposed Air Quality Conditions – Construction**

	GENERAL CONDITIONS
AQ.1.	<p>The NZTA shall finalise and implement, through the CEMP, the Construction Air Quality Management Plan (CAQMP) and Concrete Batching and Crushing Management Plan (CBCMP) submitted with the application. <del>The NZTA shall provide the CAQMP and CBCMP to the [Auckland Council] prior to the commencement of any site works.</del></p> <p>The CAQMP and CBCMP shall be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing. The CAQMP and CBCMP shall include, but not be limited to, details of:</p> <ul style="list-style-type: none"> <li>(a) Daily visual monitoring of dust emissions;</li> <li>(b) Procedures for responding to process malfunctions and accidental dust discharges;</li> <li>(c) Criteria, including consideration of weather conditions and procedures for use of water sprays on stockpiles and operational areas of the site;</li> <li>(d) Continuous monitoring of Total Suspended Particulate (TSP) concentrations and meteorology;</li> <li>(e) <del>Monitoring of odour emissions</del> <u>Monitoring of the times of detectable odour emissions from the ground;</u></li> <li>(f) Procedures for responding to discharges of odour (including in the event of excavation of contaminated sites);</li> <li>(g) Monitoring of construction vehicle maintenance;</li> <li>(h) Process equipment inspection, maintenance, monitoring and recording, including baghouses, pressure relief valves and high level alarms;</li> <li>(i) Complaints investigation, monitoring and reporting; and</li> <li>(j) The identification of staff and contractors' responsibilities.</li> </ul>
AQ.2.	<p>The NZTA shall review the CAQMP and CBCMP at least annually and as a result of any material change to the Project. <del>Any material changes to the CAQMP and CBCMP shall be submitted to the [Auckland Council] for review at least 10 working days prior to the changes taking effect. Any consequential changes will be undertaken in accordance with CEMP.13.</del></p>
AQ.3.	<p>All construction activities shall be operated, maintained, supervised, monitored and controlled at all times so that <u>all</u> emissions authorised by this consent are maintained at the minimum practicable level.</p>
AQ.4.	<p>The NZTA shall undertake construction activities in accordance with the CEMP, CAQMP and CBCMP, such that:</p> <ul style="list-style-type: none"> <li>(a) Hard surfaced areas of the construction yards and active construction areas are vacuum swept or scraped down at least twice each week and additionally as reasonably required;</li> </ul>

**Proposed Air Quality Conditions – Construction**

	<p>(b) All unsealed areas of the site used for vehicle movement are maintained visibly damp by the use of water sprays or a water cart during weather conditions where the potential for dust emissions exist;</p> <p>(c) Wheel wash systems are installed at all truck exits from unpaved areas of the site onto public roads are used for all trucks that depart from the site;</p> <p>(d) All stockpiles are constructed and positioned to minimise the potential for dust emissions. The surfaces of all stockpiles are maintained adequately damp at all times to minimise the release of particulate matter;</p> <p>(e) Belt conveyors for moving dry materials are fitted with water sprays or enclosed to minimise wind entrainment of dust. Where installed, water suppression is used whenever the conveyors are used for moving dry materials.</p>
	<b>PROCESS CONDITIONS – CONCRETE BATCHING:</b>
AQ.5.	<p>Air displaced from concrete batching plant during silo filling or concrete batching shall be vented to atmosphere via filter units as follows:</p> <p>(a) Cement silos – a pulse jet baghouse mounted on top of the silo designed to meet a particulate discharge <u>concentration</u> limit of 30 mg/m<sup>3</sup>, a collection efficiency of 99.9% and a maximum air to cloth ratio of 3.0 m<sup>3</sup>/m<sup>2</sup>/min.</p> <p>(b) Cement weigh hopper – a static baghouse mounted on top of the weigh hopper designed to meet a particulate discharge <u>concentration</u> limit of 30 mg/m<sup>3</sup>, a collection efficiency of 90% and a maximum air to cloth ratio of 1.0 m<sup>3</sup>/m<sup>2</sup>/min.</p> <p>(c) Mixer drum – either via the cement silo or via a separate baghouse designed to meet a particulate discharge <u>concentration</u> limit of 30 mg/m<sup>3</sup>, a collection efficiency of 99.9% and a maximum air to cloth ratio of 3.0 m<sup>3</sup>/m<sup>2</sup>/min. If a separate baghouse is used, the pressure drop across this baghouse shall be continuously monitored.</p>
AQ.6.	<p>Each cement silo on site shall be fitted with a high fill alarm that shall be adequately maintained and be operating whenever bulk cement is being transferred into that silo. In the event of the alarm operating, filling into that silo shall cease immediately and shall not be resumed until the cause has been located and remedied.</p>
AQ.7.	<p>No part of the concrete batching process shall be operated without the associated emission control equipment being fully operational and functioning correctly.</p>
	<b>PROCESS CONDITION – ROCK CRUSHING</b>
AQ.8.	<p>Air extract ventilation from the rock crushing plant shall be ducted to a baghouse that shall either discharge entirely within the building or be designed to meet a particulate discharge <u>concentration</u> limit of 30 mg/m<sup>3</sup>, a collection efficiency of 99.9% and a maximum air to cloth</p>

**Proposed Air Quality Conditions – Construction**

	ratio of 3.0 m <sup>3</sup> /m <sup>2</sup> /min. If the baghouse does not discharge entirely within the building, the pressure drop across this baghouse shall be continuously monitored.
AQ.9.	No part of the rock crushing process shall be operated without the associated emission control equipment being fully operational and functioning correctly.
	<b>MONITORING</b>
AQ.10.	The NZTA shall undertake visual inspections of dust emissions as follows:  (a) Visual inspections of all active construction areas at least three times daily during October to April inclusive, <u>whenever there are construction activities</u> . The results of visual monitoring shall be logged.  (b) Visual inspections of dust emissions from the concrete batching plants and rock crushing plant shall be undertaken daily while the plant is operating.
AQ.11.	The operation of water sprays shall be checked at least once each day.
AQ.12.	Continuous monitoring of TSP concentrations shall be undertaken in at least one location in Sector 1, in at least two locations in Sectors 5 and/or 7, and in at least two locations in Sector 9 while construction activities are being undertaken in those Sectors. The locations of continuous TSP monitors shall, as far as practicable, comply with the requirements of AS/NZ 3580.1.1:2007 Method for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment.
AQ.13.	Continuous monitoring of wind speed and direction shall be undertaken in at least one location in each of Sector 1, Sectors 5 or 7 and Sector 9 while construction activities are being undertaken in those Sectors. The locations of wind speed and direction monitors shall, as far as practicable, comply with the requirements of AS 2923:1987 Ambient Air – Guide for the Measurement of Horizontal Wind for Air Quality Applications and be at the same locations as the TSP monitors required by Condition <u>AQ.12 AQ.13</u> .
AQ.14.	The locations <u>and types</u> of continuous TSP and meteorological monitoring sites required by Conditions AQ.12 and AQ.13 shall be selected by the NZTA in consultation with the Auckland Council.  <u>In the event of a failure of the monitoring equipment this shall be repaired or replaced within two working days.</u>
	<b>REPORTING</b>
AQ.15.	All records, logs, monitoring and test results that are required by the conditions of this consent shall be made available on request, during operating hours, to an Auckland Council

**Proposed Air Quality Conditions – Construction**

	enforcement officer and shall be kept for the duration of the consent.
AQ.16.	If the monitoring required by Condition A.12 shows that concentrations of TSP in ambient air at or beyond the boundary of the site exceeds 80 µg/m <sup>3</sup> as a 24-hour average, the NZTA shall undertake an investigation into the cause of the exceedance.
AQ.17.	A report into the outcome of any investigation required by Condition AQ.16 shall be forwarded to the Auckland Council within 20 working days of the exceedance. If the cause of the exceedance is identified as being an activity undertaken on the site, the report shall also identify additional measures to be taken to reduce discharges of particulate matter into air from that activity.
AQ.18.	Log books shall be maintained that record all relevant information that is required to demonstrate compliance with the conditions of this consent. This information shall include, but is not limited to: <ul style="list-style-type: none"> <li>(a) Visual assessments of any dust emissions from the site and the source;</li> <li>(b) Any dust control equipment malfunction and any remedial action taken;</li> <li>(c) When a water cart was used and, if so, the frequency of use and the volume of water used (including identification of location);</li> <li>(d) All relevant details of the TSP and meteorological monitoring required by Conditions AQ.12 and AQ.13;</li> <li>(e) Any additional dust control measures undertaken; and</li> <li>(f) The date and time of the entry and the signature of the person entering the information.</li> </ul>
AQ.19.	The NZTA shall maintain a log of any complaints received relating to air quality. Details of each complaint received shall be forwarded to the Auckland Council within 24 hours of receipt of the complaint. The log shall include any complaints lodged with the Auckland Council where the Council has informed the NZTA of the complaint. The log shall include, but not be limited to the following: <ul style="list-style-type: none"> <li>(a) The date, time, location and nature of the complaint;</li> <li>(b) Weather conditions at the time of the complaint (including approximate wind speed, wind direction, cloud cover);</li> <li>(c) <u>Any possible other contributing factors (such as a fire, smokey vehicle, a local chimney emission, etc.)</u></li> <li>(d) The name, phone number and address of the complainant (unless the complainant elects not to supply these details);</li> </ul>

**Proposed Air Quality Conditions - Construction**

	<p>(e) Any remedial actions undertaken; and</p> <p>(f) The date and time of the entry and the signature of the person entering the information.</p>
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### Proposed Operational Air Quality Conditions

OA.1	<u>The vents used to discharge emissions in the tunnel shall be a minimum height of 25m above the ground.</u>
OA.12	Prior to the tunnels becoming operational, the Requiring Authority shall establish two ambient air quality monitoring stations. The location <u>and types</u> of these monitoring stations shall be <u>selected by the NZTA in consultation determined and agreed</u> with the Auckland Council. Ambient air quality shall be monitored continuously in real time, to monitor potential effects associated with the operation of the ventilation system from the tunnels. Monitoring shall include fine particulates (PM10 and PM2.5) and nitrogen dioxide. Results shall be compared with the relevant National Standards for air quality and Auckland Regional air quality targets. Monitoring shall be undertaken for at least 24 months once the tunnels are operational, unless it has been agreed with the Auckland Council that monitoring is no longer required. The locations <u>and maintenance schedules</u> of the continuous monitors shall, as far as practicable, comply with the requirements of AS/NZ 3580.1.1:2007 Method for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment, <u>and with methods specified in the National Environment Standards.</u>
OA.23	Continuous monitoring of wind speed and direction shall be undertaken at each ambient air quality monitoring location as required by Condition OA.12. The locations of wind speed and direction monitors shall, as far as practicable, comply with the requirements of AS 2923:1987 Ambient Air – Guide for the Measurement of Horizontal Wind for Air Quality Applications.
OA.34	For the first 12 months of tunnel operation, the results of the ambient air quality monitoring shall be reported via validated reports and issued for information via the Project website. Following this period, reporting shall take place quarterly <u>as follows: Quarter 1 (December to February) by 31 March, Quarter 2 (March to May) by 30 June, Quarter 3 (June to August) by 30 September and Quarter 4 (September to November) by 31 December.</u>
QA.45	If the monitoring required by Condition OA.12 shows that concentrations of contaminants in ambient air at the monitoring locations exceeds the relevant air quality standards, the NZTA shall undertake an investigation into the cause of the exceed <del>ance</del> ance.
OA.56	The air quality monitoring shall be undertaken in general accordance with the Operational Air Quality Management Procedure (Appendix O of <i>Technical Report G.1 Assessment of Air Quality Effects</i> ) submitted with this application.

## Proposed Landscape and Visual Conditions

LV.1.	<p>The Urban Design and Landscape Plans (UDL Plans) (<u>Drawing Numbers 20.1.11-3-D-L-810-200 to 228 (and planting schedules)</u>) shall be reviewed and revised in accordance with the conditions and submitted to the Auckland Council for their <u>confirmation that they comply with the conditions of the consents / designation approval</u> prior to construction of the relevant Project stage. The UDL Plans shall include:</p> <ul style="list-style-type: none"> <li>(a) Planting to screen houses and noise walls;</li> <li>(b) Planting along the corridor on Traherne Island, in accordance with these conditions and the Ecological Management Plan;</li> <li>(c) Specimen planting on the Great North Road Interchange and the Te Atatu Road Interchange;</li> <li>(d) Specimen planting at the tunnel portals;</li> <li>(e) The final form of the <u>following structures northern and southern ventilation buildings and stacks in accordance with the design principles of Section B of the Urban Landscape and Design Framework (ULDF June 2010) and the following conditions:</u> <ul style="list-style-type: none"> <li><del>(i) Northern vent building and stack; and</del></li> <li><del>(ii) Cradock Street exhaust; and</del></li> <li><del>(iii) Southern vent building and stack;</del></li> </ul> <p><u>For the Northern vent building:</u></p> <ul style="list-style-type: none"> <li>(i) <u>The design shall maintain the same components underground as does the lodged design</u></li> <li>(ii) <u>A fragmented form such that the above-ground building is broken down into small, discrete elements;</u></li> <li>(iii) <u>Any required roof linkages shall not dominate the form of the building; and</u></li> <li>(iv) <u>Lighting integrated with the façade design to illuminate the building and shared path along Great North Road</u></li> </ul> <p><u>For the southern vent building:</u></p> <ul style="list-style-type: none"> <li>(v) <u>A slim, linear plan arrangement that maximises the separation of the building from the houses on Hendon Avenue to the east and the pedestrian / cycle way to the west</u></li> <li>(vi) <u>Modulation of the building such that the operation facility is separated from the remainder of the building to allow a pedestrian / cycle cross-connection at or near the portal</u></li> </ul> <p><u>For both buildings and stacks:</u></p> <ul style="list-style-type: none"> <li>(vii) <u>Treatment of the structures as objects of urban sculpture</u></li> </ul> </li> </ul>
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## Proposed Landscape and Visual Conditions

	<p>(f) <u>The appearance of the Great North Road Interchange ramps:</u></p> <p>(i) <u>The design shall take into consideration the impact of the structures on the visual quality of the open space underneath; and</u></p> <p>(ii) <u>The design of the piers and underside of ramps shall be reviewed by the Auckland Council urban design panel.</u></p>
LV.2.	<p>The UDL <u>Plans</u> shall be revised to take into consideration the following:</p> <p>(a) Finalisation of the noise barriers (as required by Condition ON.3) <u>in accordance with the design principles for noise walls in the ULDF (Section B);</u></p> <p>(b) Any relevant Open Space Restoration Plans prepared in accordance with these conditions;</p> <p>(c) Oakley Inlet Heritage Plan, prepared in accordance with these conditions;</p> <p>(d) Ecological Management Plan, prepared in accordance with these conditions; and</p> <p>(e) Western Ring Route: Maioro Street Interchange and Waterview Connection – Oakley Creek Rehabilitation and Restoration Guidelines (Boffa Miskell, 2010).</p> <p>(f) <u>Revisions to the UDL Plans, as follows:</u></p> <p>(i) <u>Drawing No: 20.1.11-3-D-L-810-210 and 211: change in planting type to low-lying area northwest of Waterview Interchange from ‘coastal forest’ to ‘flax/ cabbage tree wetland’;</u></p> <p>(ii) <u>Drawing No: 20.1.11-3-D-L-810-211: change in small area of planting north of the Interchange from ‘existing’ to ‘proposed’</u></p> <p>(iii) <u>Drawing No: 20.1.11-3-D-L-810 -213: provision of a boundary wall of 2m in height (with agreement of the St Francis School)</u></p> <p>(iv) <u>Drawing No: 20.1.11-3-D-L-810-217: Amend and update to reflect the final design of the northern ventilation building.</u></p> <p>(v) <u>Drawing No: 20.1.11-3-D-L-810-219: Addition of one toilet facility (Auckland City standard or similar); and Increase planting between playground and westbound ramp. Amend and update to reflect the final design of the southern ventilation building.</u></p> <p>(v) <u>Drawing No: 20.1.11-3-D-L-810-221: Addition of one toilet facility (Auckland City standard or similar).</u></p> <p>(vi) <u>Drawing No: 20.1.11-3-D-L-810-222: Increase of Oakley Creek riparian margin 20m width and realignment of Hendon bridge to western edge of this area: recreation of existing carpark to back of tavern following completion of works;</u></p>

### Proposed Landscape and Visual Conditions

	<p><u>change of flax planting in rail designation south of 6 Hendon Avenue to grass.</u></p> <p><u>(v) Drawing No: 20.1.11-3-D-L-810-224: Deletion, smoke exhaust removed from project.</u></p> <p><u>(vi) New Sheet: Rehabilitation of 'Waterview Glades' area (Sector 7).</u></p>
LV.3.	<p>In revising the UDL <u>Plans</u>, consultation shall be undertaken with the <u>Community Liaison Group and</u> Manager, Urban Design Auckland Council on the final appearance of the following structures:</p> <p>(a) Northern vent building and stack; <u>and</u></p> <p><del>(b) Craddock Street exhaust; and</del></p> <p>(c) Southern vent building and stack.</p>
LV.4.	<p>The NZTA shall have implemented the UDL <u>Plans</u> within 6 months of practical completion of construction of the Project.</p>
LV.5.	<p>The landscaping shall be implemented in accordance with the UDL <u>Plans</u> within the first planting season following the completion of the construction works provided that climatic conditions are suitable, otherwise at the first practicable opportunity thereafter, and shall be maintained for the next 2 years thereafter. Should the landscaping be implemented in stages (depending on construction phases), landscaping may be implemented after the first planting season of each stage.</p>
LV.6.	<p>The NZTA shall implement the UDL <u>Plans</u> taking into account the pest plant management guidelines detailed in the Ecological Management Plan.</p>
LV.7.	<p><u>The UDL Plans shall make provision for close planting of fast growing native shrubs or small trees (Griselina, Karo, Pittosporums, Tara or similar) along the security boundary of Construction Yard 1 facing Te Atatu Road. This planting shall be implemented prior to operational use of the yard and maintained in a healthy state for the duration of the works programme. Such planting shall occur at no greater than 1.0m centres and shall comprise plants that are Pb28 or larger at the time of planting.</u></p>
LV.8.	<p><u>The NZTA shall ensure that the Temporary Embankments constructed for the Causeway Project are located on the seaward side of SH16 between the motorway end of Rosebank Road and the bridge over the Waterview Inlet.</u></p>

### Proposed Social Conditions

SO.1	<p>The NZTA shall prepare Open Space Restoration Plans to outline how the reserve land occupied during construction will be reinstated or replaced on completion of construction, for handover to Auckland Council. <u>The Open Space Restoration Plans shall be submitted to Auckland Council for approval at least 3 months prior to practicable completion of construction works in the specific areas set out in SO.2.</u></p>
SO.2	<p>The Open Space Restoration Plans shall be prepared in consultation with the Auckland Council, iwi, <u>Community Liaison Group, Working Liaison Group, NZHPT</u>, recreation users and other users representatives, <u>and</u> shall comprise the following specific plans:</p> <ul style="list-style-type: none"> <li>(a) Waterview Reserve Restoration Plan;</li> <li>(b) Alan Wood Restoration Plan (Including Hendon Park and 25 Valonia Street);</li> <li>(c) Oakley Creek Esplanade Restoration Plan (<u>Waterview Glades</u>); <del>and</del></li> <li>(d) Jack Colvin Park Restoration Plan;</li> <li>(e) <u>Rosebank Domain Restoration Plan; and</u></li> <li>(f) <u>Harbourview–Orangihina Reserve Restoration Plan.</u></li> </ul>

**Proposed Social Conditions**

<p>SO.3</p>	<p>The Open Space Restoration Plans <u>shall be prepared in general accordance with the UDL Plans (Drawing Numbers 20.1.11-3-D-L-810-200 to 228 (and planting schedules))</u>, <del>shall outline measures to mitigate the adverse effects of the Project on local residents</del> and shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>(a) Proposed reinstatement of open space by “like for like” quantity <del>and quality</del> of open space lost;</li> <li><del>(b) Urban design and landscape plans;</del></li> <li>(b) In the case of the Waterview Reserve Restoration Plan, measures to enhance the Oakley Inlet Heritage Area, including interpretative signage and pedestrian access;</li> <li>(c) Details of any proposed pedestrian/ cycle access within and to/from the reserve areas (including Hendon Park Bridge) including a full CPTED review and response;</li> <li>(d) Creation of esplanade reserve along Oakley Inlet and Craddock Street;</li> <li>(e) <u>Integration with the Oakley Creek restoration works;</u></li> <li>(f) <u>Location of any artworks and educational signage; and</u></li> <li>(g) Details of any vehicle access through the reserves and parking areas.</li> </ul>
<p>SO.4</p>	<p>In preparing the Open Space Restoration Plans, consideration shall be given to the <u>equivalent reinstatement replacement</u> of <u>the following</u> <del>existing</del> recreational facilities <u>including</u>:</p> <ul style="list-style-type: none"> <li>(a) <u>Benched seating area at Jack Colvin Park;</u></li> <li>(b) Three senior sports fields, one training field and associated parking requirements;</li> <li>(c) A children’s playground;</li> <li>(d) Two ablution blocks;</li> <li>(e) Two <del>Half</del> basketball court; and</li> <li>(f) A volleyball court.</li> </ul> <p><u>These facilities are all to be provided locally within the affected area, generally as per the plans lodged with the application Drawing Numbers 20.1.11-3-D-L-810-212, 219, 221 and 222.</u></p>

**Proposed Social Conditions**

<p>SO.5</p>	<p><u>At least 20 working days p</u>Prior to the occupation of the construction areas within Waterview Reserve and Alan Wood Reserve, <u>and where practicable,</u> the NZTA shall, in consultation and agreement with the Auckland Council, provide:</p> <ul style="list-style-type: none"> <li>(a) <u>A temporary playing field, basketball court and volleyball court within the relocated/ facilities within the Waterview Reserve and/or Saxon Reserve;</u></li> <li>(b) <u>Development of Saxon Reserve as a community park;</u></li> <li>(c) <u>Improvements to the existing pathway connections at Howlett Reserve, providing wider and safer access out to either Howlett Street or Oakley Avenue;</u></li> <li>(d) <u>Formalisation of the pathway linkage north of “Waterview Glades”, connecting to Oakley Creek;</u></li> <li>(e) <u>A pedestrian connection to Eric Armishaw Reserve;</u></li> <li>(f) Three soccer playing fields within the Alan <del>w</del>Wood Reserve area <u>including associated access, ablution block and carparking; and</u></li> <li>(g) <u>A temporary basketball court at Alan Wood Reserve.</u></li> </ul>
<p>SO.6</p>	<p><u>The “Hendon Bridge”, as well as pedestrian connections south of the motorway in Alan Wood Reserve, along Oakley Creek shall be provided as early as practicable.</u></p>
<p>SO.7</p>	<p>In addition to the Community Liaison Group established pursuant to Condition PI.5, the NZTA shall establish an Education Liaison Group, to provide a forum through which:</p> <ul style="list-style-type: none"> <li>(a) Relevant monitoring data can be provided (e.g. air quality monitoring);</li> <li>(b) Notice can be provided of when particularly noisy activities will occur in close proximity;</li> <li>(c) Particular concerns can be raised by educational facilities or parents, discussed and potentially addressed.</li> </ul> <p>The Education Liaison Group shall be established at least 2 months prior to construction commencing and shall have regular meetings throughout the construction period. The Education Liaison Group shall continue to meet for at least 12 months following the completion of the Project (or less if the members of the Education Liaison Group agree), so that ongoing monitoring information can continue to be disseminated.</p>

### Proposed Social Conditions

SO.8	Where noisy construction activities (that exceed the Noise Criteria in the CNVMP) are proposed in close proximity or adjacent to schools/ childcare centres, the NZTA shall, where practicable, carry out these works outside school hours or during school holidays.
SO.9	Upon finalisation of the CNVMP, if compliance with appropriate noise and vibration standards for educational facilities is unable to be achieved while the Waterview Kindergarten is in session to the satisfaction of the Ministry for Education, the NZTA shall offer the Ministry temporary relocation of the Waterview Kindergarten to an alternative site, either within the grounds of Waterview Primary School or a site in close proximity for the entire duration of the construction period. <u>The timing for relocation of the kindergarten back to its original premises shall be determined in consultation with the Ministry of Education and Auckland Kindergarten Association (where practicable to undertake this relocation over holiday period between school years).</u>
SO.10	The NZTA shall, in agreement with the Ministry of Education, monitor the Waterview Primary School and the Waterview Kindergarten rolls throughout the construction period and for a period up to <del>6-12</del> months after <del>practicable completion</del> <u>the NZTA has vacated Construction Yards 5 and confirmed the operational designation footprint in these areas.</u>
SO.11	Should monitoring of the school rolls of Waterview Kindergarten and Waterview Primary indicate that they have dropped below 30 and 155 respectively, the NZTA shall work with the Ministry for Education <del>and the school boards</del> to ensure that <del>appropriate staffing levels</del> <u>resources are maintained for these roll levels</u> <del>are continued</del> over the construction period and up to <del>6-12</del> months <del>after practicable completion</del> <u>the NZTA has vacated Construction Yards 5 and confirmed the operational designation footprint in these areas.</u>

### Proposed Social Conditions

SO.12	<p><u>In addition to the Community Liaison Group established pursuant to Condition PI.5, the NZTA shall establish a Working Liaison Group inviting the following:</u></p> <ul style="list-style-type: none"> <li>(a) <u>Auckland Council;</u></li> <li>(b) <u>Housing New Zealand Corporation;</u></li> <li>(c) <u>Te Kawerau Iwi Tribal Authority;</u></li> <li>(d) <u>Ngati Whatua o Orakei;</u></li> <li>(e) <u>KiwiRail;</u></li> <li>(f) <u>Department of Conservation</u></li> </ul> <p><u>The purpose of this WLG will be to provide a forum through which:</u></p> <ul style="list-style-type: none"> <li>(a) <u>Opportunities for public work development (including social housing, passenger transport or recreation / open space) are identified where the NZTA confirms that the designation is no longer required (e.g. following construction activities);</u></li> <li>(b) <u>Comment can be provided on finalised urban design and landscape plans, including the finalised designs of structural elements of the Project (prior to their submission to the Auckland Council);</u></li> <li>(c) <u>Opportunities for integration of other environmental projects (e.g. restoration plantings) are identified; and</u></li> <li>(d) <u>Consideration is given to appropriate protocols for commencement and completion of construction activities (including blessings for commencement of construction phases).</u></li> </ul> <p><u>The Working Liaison Group shall be established at least 2 months prior to construction commencing and shall have regular meetings throughout the construction period.</u></p>
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### Proposed Vegetation Conditions

V.1	<p>The NZTA shall finalise the Ecological Management Plan (ECOMP) submitted with this application, prior to works commencing on site. The ECOMP shall be implemented through the CEMP. The ECOMP shall clearly identify the location and identity of:</p> <ul style="list-style-type: none"> <li>(a) All Significant Vegetation within the designation that is to be fully protected or relocated; and</li> <li>(b) All Valued Vegetation within the designation that is to be protected as far as is</li> </ul>
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### Proposed Vegetation Conditions

	<p>practicable.</p> <p>Note: Significant and Valued Vegetation shall be as defined in the ECOMP.</p>
V.2	The NZTA shall employ a suitably experienced botanist ('nominated botanist') for the duration of the works to monitor, supervise and direct all works affecting or otherwise in close proximity to the Significant Vegetation and Valued Vegetation identified in the ECOMP.
V.3	Prior to any site works commencing, a pre-commencement site meeting shall be held so that the conditions of designation that pertain to the Significant Vegetation and Valued Vegetation are explained by the nominated botanist to all contractors or sub-contractors who will be working on site within the close vicinity of that vegetation.
V.4	The NZTA shall minimise as far as practicable the amount of vegetation which is to be cleared within the designation. All vegetation clearance shall be undertaken in accordance with the measures set out in the ECOMP.
V.5	The NZTA shall install protective fencing around, or otherwise clearly demarcate, all of the Significant Vegetation identified in the ECOMP as requiring full protection, under the supervision of the nominated botanist.
V.6	The NZTA shall replace any <u>terrestrial</u> Valued Vegetation that is required to be removed as a result of construction activities, in accordance with the ECOMP and the Urban Design and Landscape Management Plans.
V.7	The nominated botanist shall supervise all trimming, pruning and relocation work associated with the Significant Vegetation and Valued Vegetation required as part of the works.
V.8	Prior to planting, and for a period of 2 years following completion of construction, the NZTA shall undertake weed management of any plants within the designated areas that are identified as plant pests in the Auckland region by the Auckland Regional Council (including Total Control/Containment Pests/Surveillance Pests and Research Organisms).
V.9	<p>The nominated botanist shall undertake a monitoring program throughout the construction period, including monitoring of:</p> <ul style="list-style-type: none"> <li>(a) The condition, repair and location of the temporary protective fencing or other forms of demarcation used to identify the Significant Vegetation;</li> <li>(b) Any works within the vicinity of the Significant Vegetation and Valued Vegetation;</li> <li>(c) The general health of the Significant Vegetation and Valued Vegetation (including any valued vegetation that has been relocated away from the works area; and</li> <li>(d) Compliance with the vegetation conditions of designation by way of fortnightly</li> </ul>

**Proposed Vegetation Conditions**

	inspections during the construction period.
V.10	Where practicable, any planting utilising native plants shall use plants genetically sourced from the Tamaki Ecological District or where this is not possible, then preferably from within the Auckland Ecological Region.
V.11	Prior to commencement of works adjacent to Traherne Island, the NZTA shall employ a suitably qualified and experienced plant translocation expert to uplift and protect all areas of <i>Mimulus repens</i> on Traherne Island that will be affected by the work. The <i>Mimulus repens</i> shall be relocated to suitable and safe habitat away from the works area, or otherwise held and protected for the duration of the works in the vicinity of their original location and be replanted back at that location (or in close proximity to it) upon completion of the works. The location of the recipient sites will be determined in consultation with the Department of Conservation and in general accordance with the Traherne Island Natural Heritage Restoration Plan (2009 – 2014).
V.12	Should the taxonomic and rarity status of the Geranium species growing alongside Oakley Creek in Hendon Park and Alan Wood Reserve not be confirmed before the commencement of works in this area, then this species shall be treated as Potentially Significant Vegetation and shall either be :  (a) Protected in full, if practicable; or (b) If protection in full is not practicable, relocated to a suitable and safe habitat elsewhere; or (c) If protection in full or translocation are not practicable, this population shall be cleared in locations where required to allow works to proceed, but replaced with an equal extent of replacement plantings of the same species (from propagated material sourced from the existing population) planted at a safe and suitable habitat nearby in Hendon Park/Alan Wood Reserve.
V.13	Any clearance of the Geranium in accordance with Condition V.12 shall be restricted to the minimum necessary to facilitate the works.

**Proposed Avian Conditions**

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

## Proposed Herpetofauna Conditions

<p>H.1</p>	<p>The NZTA shall finalise <del>and implement through the CEMP,</del> the <u>Ecological Lizard</u> Management Plan (ECOMP) submitted with this application to include details <u>lizard management to be undertaken, including</u> of the following:</p> <ul style="list-style-type: none"> <li>(a) Lizard capture methodology, <u>including timing</u>;</li> <li>(b) Lizard release locations(s);</li> <li>(c) Lizard habitat enhancement at release sites, <u>including a detailed pest control programme</u>;</li> <li>(d) Location(s) of lizard protective fencing;</li> <li>(e) Post-release monitoring methodology; and</li> <li>(f) Lizard captive management methodology.</li> </ul> <p><del>The NZTA shall submit the finalised LMP to [Auckland Council] prior to the commencement of site works and shall implement the LMP.</del></p>
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## Proposed Lighting Conditions

	Operation
L.1	<p>Lighting shall be designed and screened to minimise the amount of lighting overspill and illumination of residential areas, in general accordance with the Waterview Connection Lighting Plan (Drawing Set F.11, Drawing No. 20.1.11-3-D-C-161-100 to 119), and shall demonstrate that:</p> <ol style="list-style-type: none"> <li>All motorway lighting shall be designed in accordance with "Roadlighting Standard AS/NZS1158";</li> <li>All other lighting shall be designed in accordance with relevant rules provided in Rule 14 of the Waitakere City District Plan or Part 13 of the Auckland City Bylaw (April 2008);</li> <li>Fully cut off luminaries shall be used on SH20 from the Southern Tunnel Portal to the Maoro Street Interchange to minimised lighting overspill, as shown on Drawing Set F.11, Drawing No. 20.1.11-3-D-C-161-117 to 119.</li> </ol>
	Construction Zones and Construction Yards
L.2	<p>A Temporary Construction Lighting Management Plan shall be prepared <u>for all construction zones and construction yards</u> prior to commencement of any night time works <u>within the construction zones and construction yards</u>. The Temporary Construction Lighting Management Plan shall be independently verified by a lighting specialist and provided to the Auckland Council for review and comment <del>15</del> <u>10 working</u> days prior to any night time work commencing.</p> <p>The Plan shall include, but not be limited to:</p> <ol style="list-style-type: none"> <li>The layout and arrangement of all temporary lighting required for night time works, and shall show how this avoids the "Light Spill Restriction Zone" identified on the Construction Yard Plans (Drawing Set F.6, Drawing Numbers 20.1.11-3-D-C-161-100 to 112) submitted with the application;</li> <li>Provision for a 10m buffer between the night time work and any residential boundary at all times to minimise potential for light spill; and</li> <li>General operating procedures outlined in the CEMP.</li> </ol>
L.3	<p>Asymmetrical floodlights with <u>horizontal</u> glass visors that are not raised more than 3 degrees above the horizontal plane shall be used for any temporary construction night time lighting requirements. Alternative temporary lighting arrangements may be used, subject to the prior approval of the Auckland Council, where it can be demonstrated that the proposed lighting is similar or better to asymmetrical floodlights with glass visors. <u>Glare shall be kept below the recommendation given in AS 4282 - 1997 "Control of the Obtrusive Effects of Outdoor</u></p>

	<a href="#">Lighting” Tables 2.1 and 2.2.</a>
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**Proposed Archaeology Conditions**

<p>ARCH.1</p>	<p>The NZTA shall complete, and implement through the CEMP, the Archaeological Site Management Plan (ASMP) submitted with the notice of requirement, to include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) Identification of the Project archaeologist, their role and responsibility on the Project;</li> <li>b) Who reports to the Project archaeologist;</li> <li>c) Specific sites requiring supervision, and measures to be undertaken to protect and manage these sites;</li> <li>d) <u>Whether NZHPT and/or Auckland Council heritage and/or iwi supervision is required for the specific site; and</u></li> <li>e) Accidental discovery protocols in the event that unknown archaeological sites are uncovered.</li> </ul>
<p>ARCH.2</p>	<p>The NZTA shall employ at its expense a qualified archaeologist (the Project archaeologist) who shall be on site to monitor all initial earthworks, including surface stripping of the site, for all specific areas identified in the ASMP to establish whether any sub-surface archaeological features are present. This includes, but is not limited to, the following areas:</p> <ul style="list-style-type: none"> <li>(a) All unmodified areas in the vicinity of Rosebank Road;</li> <li>(b) All works in the vicinity of the “Oakley Inlet Heritage Area”, located adjacent to the Great North Road Interchange;</li> <li>(c) Works in the vicinity of two midden sites (recorded R11/2214 and R11/2215) within Great North Road Interchange, and all previously unmodified areas near the banks of the Oakley Inlet;</li> <li>(d) Any ground disturbance works in Construction Yard 7 within Oakley Creek Reserve.</li> </ul>
<p>ARCH.3</p>	<p>If any archaeological sites, including human remains are exposed during site works, then the following procedures shall apply:</p> <ul style="list-style-type: none"> <li>(a) Immediately it becomes apparent that a possible archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease;</li> <li>(b) The site supervisor shall immediately secure the area in a way that ensures that any artefacts or remains are untouched and notify the Project archaeologist;</li> <li>(c) The Project archaeologist shall inspect the site to assess the relevance of the find, and then the Auckland Council shall be advised of the significance;</li> <li>(d) If the site is confirmed to be an archaeological site by the Project archaeologist, the site supervisor shall then notify tangata whenua, the New Zealand Historic Places Trust, and the Auckland Council that an archaeological site has been exposed so that appropriate action can be taken.</li> </ul>

### Proposed Archaeology Conditions

ARCH.4	<p>In accordance with the ASMP, the following archaeological sites shall be fenced off and protected to the satisfaction of the Project archaeologist, prior to construction activities being undertaken:</p> <p>(a) Recorded sites R11/2504, R11/2505, R11/2506 and R11/2507, located on the northern boundary of the designation adjacent to the Rosebank Road peninsula.</p> <p>(b) Recorded site R11/2383 in the Oakley Creek Esplanade Reserve construction yard.</p>
ARCH.5	<p>In accordance with the ASMP, the following specific measures shall be implemented in the area identified as the “Oakley Inlet Heritage Area” (including recorded sites R11/2191, R11/2202, R11/2203 and R11/2459), located adjacent the Great North Road interchange:</p> <p>(a) <u>Once details of the construction methodology and access requirements have been determined, a plan will be prepared in consultation with the Project archaeologist that outlines the areas of archaeological value to be fenced off and protected from any adverse effects during the construction process. This plan will be added to the Archaeological Constraints layer in the GIS layers included as an Appendix of the ASMP in the CEMP.</u></p> <p>(b) All works in <u>Oakley Inlet Heritage Area</u> area shall be monitored by the Project archaeologist.</p> <p>(c) Machine access to construction works in this area shall be planned so as to minimise adverse effects on archaeological features;</p> <p>(d) During and following removal of houses north of Cowley Street and west of Great North Road in the area where the mill workers’ cottages and mill race were once located, investigations shall be undertaken to establish and record any archaeological remains that may have survived;</p> <p>(e) Remedial or limited restoration works should be carried out to the basalt walls, wheel pit and bridge abutment of the mill/tannery/ quarry site (R11/2191), to a specification prepared by a heritage professional, to ensure their long term preservation;</p> <p>(f) A vegetation management plan shall be prepared and implemented to remove vegetation that is damaging archaeological features in this area and to protect and enhance features with appropriate vegetation cover;</p> <p><del>(g) A pedestrian bridge linking the northern and southern banks of the Oakley inlet shall be provided in the original location of the historical bridge to restore the historical connection between the two parts of the Oakley Inlet Heritage Area and make both parts easily accessible;</del></p> <p><del>(h) Provide interpretative signage of the Oakley Inlet Heritage Area for public information and educational purposes.</del></p>

**Proposed Archaeology Conditions**

ARCH.6	<p>The Project archaeologist shall be made part of the Waterview Reserve Restoration Plan (refer Condition SO.1) development team to provide advice on long term management of the "Oakley Inlet Heritage Area". <u>The Waterview Reserve Restoration Plan shall include provision for, as a minimum:</u></p> <p>(a) <u>A pedestrian bridge linking the northern and southern banks of the Oakley inlet shall be provided in the original location of the historical bridge to restore the historical connection between the two parts of the Oakley Inlet Heritage Area and make both parts easily accessible:</u></p> <p>(b) <u>Interpretative signage of the Oakley Inlet Heritage Area for public information and educational purposes.</u></p>
ARCH.7	<p>In accordance with the ASMP, any works to the dry stone wall (recorded site R11/2213) located on the north western boundary of the Great North Road Interchange, shall be minimised <u>as far as possible and managed</u> in accordance with the following:</p> <p>(a) If it is necessary to demolish part of the wall, the stone shall be used to repair the remainder of the wall. <del>Any surplus shall be offered to Auckland City Council for use in repairing other historic stone walls.</del> <u>Appropriate reuse of any surplus stone will be determined following consultation with the NZHPT and Auckland Council.</u></p> <p>(b) The remainder of the stone wall shall be protected from construction machinery by the use of warratahs and an adequate buffer area prior to earthworks commencing.</p> <p>(c) The remainder of the stone wall shall be carefully cleared of vegetation growth and repaired where necessary to a specification prepared by a heritage professional employed at the expense of the NZTA.</p>
ARCH.8	<p>All contractors and subcontractors working on the Project shall be trained on the archaeological requirements set out in the ASMP.</p>
Advice note	<p>Any archaeological sites within the area affected by the Project shall not be modified or disturbed in any way unless written authorisation has been obtained from the NZ Historic Places Trust.</p>

### Proposed Ground Settlement Conditions

S.1	<p>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. <del>and provide it to the [Auckland Council].</del> <u>Prior to construction (following detailed investigation and design), the total estimated settlements and building damage categories shall be confirmed using the methodology adopted in the preparation of Technical Report G.13 and the SEMP shall be updated accordingly.</u></p>
	<p><b>Settlement Monitoring</b></p>
S.2	<p>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:</p> <ul style="list-style-type: none"> <li>(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 <u>and to infill between them.</u></li> <li>(b) To cover the more extensive eastern zone area of settlement at Chainage 3400 (Figure E.14 in Technical Report G.13 <i>Assessment of Ground Settlement Effects</i>)</li> <li>(c) On or around buildings or features considered to be particularly sensitive as defined in the SEMP <u>and as may be updated to reflect detailed analysis and interpretation of monitoring results as the project proceeds.</u></li> </ul> <p>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. The locations of each type of settlement monitoring markers shall be confirmed in the SEMP.</p>

### Proposed Ground Settlement Conditions

<p>S.3</p>	<p>The NZTA shall survey the settlement monitoring markers at the following frequency:</p> <ul style="list-style-type: none"> <li>(a) Pre-construction             <ul style="list-style-type: none"> <li>i) All Framework Markers – <del>Vertical and selected h</del>Horizontal <del>and-vertical</del> at 3 monthly intervals, starting at least 12 months prior to construction commencing; and</li> <li>ii) All Intermediate Markers – <del>Vertical and selected h</del>Horizontal <del>and-vertical</del> once.</li> </ul> </li> <li>(b) During Construction             <ul style="list-style-type: none"> <li>i) All Framework Markers – Vertical on a monthly basis; and</li> <li>ii) Selected Framework Markers only – Horizontal on a monthly basis.</li> </ul> </li> <li>(c) During Active Construction             <ul style="list-style-type: none"> <li>i) All Framework and Intermediate Markers – Vertical on a weekly basis; and</li> <li>ii) Selected Framework Markers only – Horizontal on a monthly basis.</li> </ul> </li> </ul> <p>“Active construction” shall be defined as:</p> <ul style="list-style-type: none"> <li>(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</li> <li>(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.</li> </ul>
<p>S.4</p>	<p>Immediately following each monitoring round, the NZTA shall use the settlement monitoring results <u>(together with the results of groundwater monitoring where they may provide an earlier indication of future settlements)</u> to reassess the <u>ground settlements and</u> building damage categories and compare them to those estimated in <del>Technical Report G.13 Assessment of Ground Settlement Effects, submitted with this application, the SEMP</del>. If the reassessment indicates that a building has increased its damage category from that in <del>Technical Report G.13 Assessment of Ground Settlement Effects, the SEMP</del>, then this shall be considered to be an Alarm Level and additional specific assessment of the building shall be carried out by the NZTA to confirm this reassessment within 72 hours. If the additional assessment confirms the increase in damage category, this shall be considered to be an Alert 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.</p>

**Proposed Ground Settlement Conditions**

<p>S.5</p>	<p>The NZTA may reduce the frequency of settlement monitoring to 6 monthly:</p> <ul style="list-style-type: none"> <li>(a) Once the active construction stage has passed; and</li> <li>(b) Monthly monitoring has been undertaken for a minimum of 6 months; and</li> <li>(c) The monitoring indicates that any potential settlement effects are within a satisfactory range as specified in the SEMP.</li> </ul> <p>Settlement monitoring shall be undertaken for a period of 2 years following completion of the tunnels.</p>
<p>S.6</p>	<p>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).</p>
	<p><b>Building Condition Surveys</b></p>
<p>S.7</p>	<p>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 <i>Assessment of Ground Settlement Effects</i> provided in support of this application:</p> <ul style="list-style-type: none"> <li>(a) Buildings on properties within the substrata designation;</li> <li>(b) Buildings where total estimated settlement is greater than 50mm;</li> <li>(c) Buildings in areas estimated to have a risk of damage more than negligible;</li> <li>(d) Unitec Building 76;</li> <li>(e) 1510 Great South Road, Unitec Residential Flats (two buildings);</li> <li>(f) Pak'n'Save Supermarket;</li> <li>(g) Metro Football Clubhouse, Phyllis Street;</li> <li>(h) Building at 1550 Great North Road;</li> <li>(i) BP Service station at 1380 Great North Road;</li> <li>(j) Modern Chairs Building (Richardson Road); and</li> <li>(k) Waterview Primary School.</li> </ul>

### Proposed Ground Settlement Conditions

S.8	The NZTA shall consult with owners of buildings and structures identified in Condition S.67 and, subject to the owner's approval of terms acceptable to the NZTA, shall undertake a pre-construction condition assessment of these structures in accordance with the SEMP.
S.9	The NZTA shall employ a suitably qualified person ( <u>e.g. a Chartered Professional Engineer</u> ) to undertake the building assessments required pursuant to Condition S.7 and identify this person in the SEMP.
S.10	<p>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:</p> <p>(a) All Type 1 Dwellings within a zone where "more than negligible" effects have been predicted;</p> <p>(b) All Type 2 Dwellings within a zone where "slight" effects or greater have been predicted</p> <p>(c) Unitec Building 76;</p> <p>(d) 1510 Great North Road, Unitec Residential Flats (two buildings);</p> <p>(e) Pak'n' Save supermarket; <u>and</u></p> <p>(f) <u>Waterview Primary School (pool and hall).</u></p> <p>Note: Type 1 and 2 Dwellings are those as defined in Technical Report G.13 <i>Assessment of Ground Settlement Effects</i>.</p>
S.11	<p>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:</p> <p>(a) All Type 1 Dwellings within a zone where "slight" effects or greater have been predicted;</p> <p>(b) Unitec Building 76; and</p> <p>(c) 1510 Great North Road, Unitec Residential Flats (two buildings); <u>and</u></p> <p>(d) <u>Waterview Primary School (pool)</u></p>
S.12	<p>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. The assessment report shall include a determination of the cause of damage identified (if any) since the pre-construction condition assessments. <u>The NZTA shall agree appropriate remedial works (if any) and arrangements for implementing them with the owner.</u> The requirements of this condition need not be fulfilled for any particular building 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.</p>

### Proposed Ground Settlement Conditions

S.13	The NZTA shall ensure that a copy of the pre, post-construction and any additional building condition assessment reports for each building be forwarded to the respective property owner(s) within 15 working days of completing the reports. The NZTA shall notify the Auckland Council that the assessments have been completed.
	<b>Retaining Wall Monitoring</b>
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.
	<b>Services Monitoring</b>
S.15	<p>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:</p> <p>(a) Waterview Orakei No. 9 trunk sewer.</p> <p>The NZTA shall undertake additional CCTV surveys throughout the construction period to ensure that there has been no significant damage to these services, and undertake remedial action as required in consultation with the service provider.</p>
	<b><u>Slope Stability Assessments</u></b>

### Proposed Ground Settlement Conditions

<p>S.16</p>	<p><u>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:</u></p> <ul style="list-style-type: none"> <li>(a) <u>14H and 14J Cradock Street</u></li> <li>(b) <u>34 Cradock Street</u></li> <li>(c) <u>40 Cradock Street</u></li> <li>(d) <u>56 Powell Street; and</u></li> <li>(e) <u>1590A Great North Road.</u></li> </ul> <p><u>The NZTA shall undertake monitoring throughout the active construction period in accordance with S.10 above and shall assess and agree remedial action as required in consultation with the owner in accordance with S.12 above.</u></p>
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### Proposed Groundwater Conditions

G.1	<p>The NZTA shall finalise, and implement through the CEMP, the Groundwater Management Plan (GWMP), submitted with this application <del>and provide it to the [Auckland Council]</del> prior to commencement of tunnelling. The GWMP shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) The location of the groundwater monitoring bores;</li> <li>(b) The location of the continuous monitoring stations on Oakley Creek;</li> <li>(c) The methods and frequency for groundwater monitoring;</li> <li>(d) The groundwater trigger levels;</li> <li>(e) Procedures to follow in the event of trigger levels being exceeded;</li> <li>(f) Reporting requirements;</li> </ul>
G.2	<p>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.</p>
G.3	<p>The NZTA shall monitor groundwater levels in the groundwater monitoring boreholes shown in Appendix A of the GWMP and keep records of the water level measurement and corresponding date in accordance with the GWMP. These records shall be compiled and submitted to the Auckland Council at three monthly intervals.</p>
G.4	<p>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.</p>
G.5	<p>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.</p> <p>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.</p>

### Proposed Groundwater Conditions

G.6	<p>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.</p>
G.7	<p><u>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).</u></p>
G.8	<p>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.</p>
G.9	<p>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:</p> <ul style="list-style-type: none"> <li>(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,</li> <li>(b) A trend of increasing groundwater level in at least 3 consecutive monthly measurements; or,</li> <li>(c) An equilibrium in the groundwater level, allowing for the seasonal variation, has been reached,</li> </ul> <p>In which case monitoring at that borehole may cease, subject to the written approval of the Auckland Council.</p>

**Proposed Groundwater Conditions**

<p>G.10</p>	<p>The NZTA shall establish continuous flow monitoring stations at the following approximate locations within Oakley Creek:</p> <ul style="list-style-type: none"> <li>(a) Chainage <u>1800</u> – 1900 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-117);</li> <li>(b) Chainage <u>2200</u> (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-116);</li> <li>(c) Chainage 3500 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-114);</li> <li>(d) Between Chainage 3900 to 4200 ((Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-113);</li> </ul> <p><u>The NZTA shall establish a continuous flow monitoring station at the upstream major tributary at Chainage 1000.</u></p> <p>The NZTA shall continue to monitor the flow monitoring station installed at CH2900 (Waterview Connection Operational Plan, Drawing No: 20.1.11-3-D-C-910-116).</p> <p>The exact location of the gauges shall be determined based on stream bed conditions such that they record the full range of flows <u>as far as practical</u>, with the locations detailed in the GWMP.</p>
<p>G.11</p>	<p>The continuous monitoring required by Condition G.9, shall record in-stream flows, at 15 minute intervals, for a period of:</p> <ul style="list-style-type: none"> <li>(a) At least 12 months prior to tunnelling commencing;</li> <li>(b) During tunnelling; and</li> <li>(c) Up to 12 months following completion of tunnelling, or a shorter period if no effects on base flows are recorded.</li> </ul>
<p>G.12</p>	<p>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 included in the 3 monthly groundwater reports, and provided to the Auckland Council.</p>
<p>G.13</p>	<p>The NZTA shall, within 10 working days of completion of tunnelling, advise the Manager Auckland Council, in writing, of the date of completion.</p>

### Proposed Contaminated Land and Contaminated Discharges Conditions

CL.1	<p>The NZTA shall finalise and implement through the CEMP, the Contaminated Soil Management Plan (CSMP) submitted with this application. <del>The CSMP shall be provided to the [Auckland Council]</del> prior to commencement of any site works. The CSMP shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) Measures to be undertaken in the handling, storage and disposal of all material excavated during the construction works;</li> <li>(b) Soil validation testing and groundwater testing;</li> <li>(c) Soil verification testing to be undertaken to determine the nature of the excavated spoil and potential reuse or disposal options;</li> <li>(d) Measures to be undertaken in the event of unexpected contamination being identified during construction activities; and</li> <li>(e) Measures to be undertaken for the handling of asbestos containing material.</li> </ul>
CL.2	<p>Prior to the main construction works commencing, the baseline quality of soils and groundwater within Sector 7 (particularly in relation to works in the vicinity of Great North Road) shall be investigated and established. The investigations shall be carried out in accordance with appropriate MfE and Auckland Council guidelines. The findings of the soil and groundwater investigations shall be used to determine any likely environmental effects in relation to the Project and the need for specific construction methods during work in this area.</p>
CL.3	<p><u>Prior to the main construction works commencing, soils and fill materials within Alan Wood Reserve (Sector 9) shall be further classified so as to determine the distribution and extent of cleanfill, managed fill and contaminated/hazardous fill materials.</u></p>
CL.4	<p>All excavated soil shall be tested by the NZTA in general accordance with the CSMP, prior to either reuse on site or disposal off site. The testing regime shall be submitted for approval by the Auckland Council.</p>
CL.5	<p>The NZTA shall notify the Auckland Council within 5 working days of identification of any contamination at the site which was not identified in the reports submitted in support of this application, including contaminated soil, surface water or groundwater.</p>
CL.6	<p>The NZTA shall remove contaminated soil and remove and dispose of any contaminated groundwater/surface water from the site in accordance with the CSMP.</p>
CL.7	<p>The NZTA shall engage a suitably qualified contaminated land specialist to supervise the works, excavation and removal of any contaminated soils from the site and undertake sampling (if required) of imported material.</p>

**Proposed Contaminated Land and Contaminated Discharges Conditions**

CL.8	All testing / sampling techniques shall be carried out in accordance with the MfE Contaminated Land Management Guidelines or other equivalent standards approved in writing by the Auckland Council.
CL.9	<u>During and following the tunnel construction works beneath Sector 8, groundwater quality monitoring shall be carried out at locations within and down hydraulic gradient of Phyllis Street Landfill. Monitoring shall be undertaken on at least a monthly basis, and for a period up to 12 months following completion of the tunnel construction works. The monitoring programme shall be submitted for approval by the Auckland Council as landowners.</u>
CL.10	<u>Prior to, during and following tunnel construction works beneath Phyllis Street Landfill, monitoring for landfill gas shall be carried out from existing monitoring boreholes within the landfill. Monitoring shall be undertaken on at least a monthly basis, for a period of no less than 6 months prior to, and up to 12 months following completion of the tunnelling works. The monitoring programme shall be submitted for approval by the Auckland Council as landowners.</u>
CL.11	<p>The NZTA shall submit to the Auckland Council, a Site Closure Report no later than three (3) months after the completion of the earthworks. The Report shall be prepared in accordance with Schedule 13 (Schedules for Reporting on Contaminated Land) of the Proposed Auckland Regional Plan: Air Land and Water and include:</p> <ul style="list-style-type: none"> <li>(a) Results of any soil reuse and imported material testing carried out to ensure compliance with the CSMP;</li> <li>(b) Volumes of soil removed from site;</li> <li>(c) Copies of the waste disposal receipts; and</li> <li>(d) Reports of any non-compliance with the CSMP procedures or complaints received while undertaking the site works.</li> </ul>

### Proposed Earthworks Conditions

E.1	<p><b>Pre-construction conditions</b></p> <p>The NZTA shall inform the Auckland Council in writing at least 10 working days before the start date of the works authorised by this Consent.</p>
E.2	<p>Prior to commencement of works, in each period between October 1 and April 30 that this Consent is exercised, a pre-construction site meeting between Auckland Council and relevant parties, including the primary contractor, shall be conducted. The approved <b>Contractors</b> Erosion and Sediment Control Plan (CESCP) as per Condition E.5 of this Consent shall be made available and discussed at the pre-construction meeting.</p>
E.3	<p><b>Erosion and Sediment Control Conditions</b></p> <p>Erosion and sediment control shall be in general accordance with the plans and information submitted with the application, and in particular, Technical Report G.22 <i>Erosion and Sediment Control Plan</i>, subject to such amendments as may be required by the following conditions of this Consent.</p>
E.4	<p>A detailed schedule of construction activities shall be prepared and forwarded to the Auckland Council prior to the commencement of works, and updated at 3 monthly intervals during the works. These schedule shall include details of:</p> <ul style="list-style-type: none"> <li>(a) The location, commencement date and expected duration of any major earthworks operations, including but not limited to, the portal excavations and the Great North Road cut and cover operation; and</li> <li>(b) The proposed construction and methodology, including staging of earthworks.</li> </ul>

### Proposed Earthworks Conditions

E.5	<p>Prior to the commencement of works for each specific area and/or activity, a “Contractors Erosion and Sediment Control Plan” (CESCP) shall be prepared. This document shall follow the principles and practices within Technical Report G.22 <i>Erosion and Sediment Control Plan</i> and shall detail any specific variations from that report. The <u>CESCPs</u> shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) Contour information at suitable intervals;</li> <li>(b) Erosion and sediment controls including specific pond design;</li> <li>(c) Supporting calculations;</li> <li>(d) Catchment boundaries for the sediment controls;</li> <li>(e) Location of the works, and cut and fill operations;</li> <li>(f) Details of construction methods to be employed, including timing and duration;</li> <li>(g) A programme for managing exposed area, including progressive stabilisation considerations;</li> <li>(h) The identification of appropriately qualified and experienced staff to manage the environmental issues onsite;</li> <li>(i) The identification of staff who have clearly defined roles and responsibilities to monitor compliance with the Consent Conditions and <u>CESCP</u>;</li> <li>(j) Provision of details of a chain of responsibility for managing environmental issues and details of responsible personnel; and</li> <li>(k) The establishment of a sediment control team (including representatives from the contractor, Auckland Council and the NZTA) to meet and review erosion and sediment control on a weekly basis.</li> </ul>
E.6	<p>For each specific area of works, a <u>CESCP</u> shall be submitted a minimum of 20 working days prior to earthworks commencing, for the written approval of the Auckland Council, which shall be obtained prior to earthworks commencing. The approved <u>CESCP</u> shall be implemented accordingly.</p>
E.7	<p>Any amendments to the <u>CESCPs</u> must be approved by the Auckland Council in writing <u>at least 10 working days</u> prior to any amendment being implemented.</p>
E.8	<p>Erosion and sediment control measures shall be constructed and maintained in accordance with ARCs Technical Report 90 (TP90) (and any amendments to that document), except where a higher standard is detailed in the documents referred to in Conditions E.3 and E.5 above, in which case the higher standard shall apply.</p>

### Proposed Earthworks Conditions

E.9	<p>The NZTA shall ensure that all discharges from tunnel dewatering activities shall be treated and monitoring undertaken of the discharge into the Oakley Creek, and of the Oakley Creek itself, to determine an appropriate water quality standard for turbidity and pH for the discharge <u>at the portal location</u>. On completion of 3 months of the monitoring programme this water quality standard shall be applied to the treatment pump system and set at a limit that reflects the monitoring results. The monitoring programme shall be developed by the NZTA and approved by the Auckland Council prior to any tunnel excavation works commencing.</p> <p>Initial pump treatment standards shall be set at a turbidity of 50NTU and pH of 7.5. Ongoing monitoring and changes to the turbidity and pH standards shall be implemented with the approval of the Auckland Council.</p>
E.10	<p>All 'cleanwater' runoff from stabilised surfaces, including catchment areas above the site, shall be diverted away from earthwork areas via a stabilised system, so as to prevent surface erosion.</p>
E.11	<p>All perimeter controls shall be operational before earthworks begin.</p>
E.12	<p>Prior to the construction of sediment retention ponds, super silt fences or other devices approved by the Auckland Council shall be constructed below the entire area of the sediment retention pond footprint.</p>
E.13	<p>The NZTA shall ensure that procedures are adopted to prevent the deposition of slurry, clay or other materials on the roads by vehicles leaving the site. Should the exercise of this Consent result in material being deposited on the road, that material shall be removed immediately to the satisfaction of the Auckland Council.</p>
E.14	<p>Notice shall be given to the Auckland Council prior to any erosion and sediment control measures being removed and/or on completion of the works.</p>

## Proposed Earthworks Conditions

E.15	<p>Prior to the commissioning of chemical treatments <u>for sediment management purposes (as per condition E.16)</u>, the NZTA shall provide Auckland Council with a Chemical Treatment Plan (CTP), for <u>confirmation by Auckland Council that it will achieve the standards set out in the CESC required under Condition E.6</u><del>the written approval of the [Auckland Council]</del>. The CTP shall follow the principles and chemical treatment details outlined within the Technical Report G.22 <i>Erosion and Sediment Control Plan</i> and shall include as a minimum:</p> <ul style="list-style-type: none"> <li>(a) Specific design details of the chemical treatment system;</li> <li>(b) Monitoring, maintenance (including post-storm) and contingency programme (including a Record Sheet);</li> <li>(c) Details of optimum dosage (including assumptions);</li> <li>(d) Results of the initial flocculation trial which will build on the information within Technical Report G.22 <i>Erosion and Sediment Control Plan</i>;</li> <li>(e) A spill contingency plan;</li> <li>(f) Details of the person or bodies that will hold responsibility for long-term maintenance of the flocculation treatment system and the organisational structure which will support this structure.</li> </ul> <p>Any amendments to the CTP shall be approved by the Auckland Council, in writing, <u>at least 10 working days</u> prior to implementation.</p>
E.16	<p>All sediment retention ponds and decanting earth bunds are to be chemically treated in accordance with the Chemical Treatment Plan required under Condition E.15<u>6</u> of this consent.</p>
E.17	<p>Prior to bulk earthworks commencing, a certificate signed by an appropriately qualified and chartered professional engineer (“as built”) shall be submitted to Auckland Council to certify that the erosion and sediment controls have been constructed in accordance with the <u>C</u>ESC as specified in Condition E.5 of this consent. Certified controls shall include sediment retention ponds, chemical treatment systems, decanting earth bunds, super silt fences, silt fences and diversion channels/bunds. The certification for any subsequent measures shall be supplied to the Auckland Council immediately upon completion of construction of those measures.</p> <p>Information supplied to Auckland Council, if applicable shall include:</p> <ul style="list-style-type: none"> <li>(a) Contributing catchment area;</li> <li>(b) Retention volume of structure (dead storage and live storage measured to the top of the primary spillway);</li> <li>(c) Shape of structure (dimensions of structure);</li> <li>(d) Position of inlets/outlets; and</li> <li>(e) Stabilisation of the structure.</li> </ul>

**Proposed Earthworks Conditions**

E.18	A copy of the “as-built(s)” and approved CDESCP’s shall be kept on site, and all erosion and sediment control measures (including staging boundaries and particularly the extent of exposed areas) shall be updated as soon as practicable as changes are made. As-built plans shall be accompanied by text detailing the relevant earthworks methodology, constraints and likely progressions, and shall be revised as required to enable clear interpretation as to the day to day operation and management of erosion and sediment controls.
E.19	<p><b>Monitoring</b></p> <p>The NZTA shall carry out monitoring in accordance with the Technical Report G.22 <i>Erosion and Sediment Control Plan</i> and the approved CDESCP and shall maintain records detailing:</p> <ul style="list-style-type: none"> <li>(a) The monitoring undertaken;</li> <li>(b) The erosion and sediment controls that required maintenance;</li> <li>(c) The time when the maintenance was completed; and</li> <li>(d) Areas of non-compliance with the erosion and sediment control monitoring plan (if any) and the reasons for the non-compliance.</li> </ul> <p>This information shall be made available to the Auckland Council upon request.</p>
E.20	<p><b>Stabilisation</b></p> <p>The site shall be stabilised against erosion as soon as practicable, and in a progressive manner, as earthworks are finished over various areas of the site.</p>
E.21	<p>The NZTA shall ensure that the following earthworks shall be stabilised as soon as practicable after completion thereof, or within 5 working days of completion, whichever shall occur first:</p> <ul style="list-style-type: none"> <li>(a) Temporary erosion and sediment controls; and</li> <li>(b) Construction yards.</li> </ul>
E.22	<p><b>Seasonal Restriction</b></p> <p>No surface earthworks on the site shall be undertaken between 1 May and 30 September in any year, without the written approval of the Auckland Council. Earthworks in this regard refers to bulk earthworks (cut/fill/waste) associated with the site.</p>
E.23	<p>Revegetation/stabilisation shall be completed by 30 April in the year of bulk earthworks in accordance with measures detailed in the approved CDESCP, unless a later date is approved in writing by the Auckland Council Manager at least two weeks before 30 April.</p>

### Proposed Stormwater Conditions

	Construction
SW.1	Stormwater management during construction shall be undertaken in accordance with the plans and information submitted with this application and the information contained within Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i> . In particular this requires the construction and completion of stormwater management works to the treatment standards detailed in Table 7.1 for the catchment areas detailed in Tables 7:20 and 7:21 of Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i> .
SW.2	The NZTA shall inform the Auckland Council in writing at least 10 working days prior to the start date of the works authorised by this consent.
SW.3	<p>The NZTA shall submit the final design of the construction stormwater system to the Auckland Council prior to the commencement of construction works. This shall include, but not be limited to:</p> <p>(a) Design calculations for the following:</p> <ul style="list-style-type: none"> <li>i) flow attenuation devices,</li> <li>ii) stormwater treatment device sizing,</li> <li>iii) bypass device design,</li> <li>iv) stormwater treatment device efficiency;</li> </ul> <p>(b) Design drawings, including all structures, outfalls, treatment devices, bypass devices, wetlands and ponds;</p> <p>(c) Catchment plans detailing the area draining to each device; and</p> <p>(d) Outfall locations.</p> <p>Any amendments to these designs shall be approved in writing by the [Auckland Council] prior to implementation.</p>
SW.4	That the NZTA shall arrange and conduct pre-construction site meetings between the [Auckland City] and all relevant parties, including the site stormwater engineer, with regard to the temporary stormwater management works, prior to construction of these works. Any resulting amendments may be reviewed at that time and shall be approved in accordance with Condition SW.3.

### Proposed Stormwater Conditions

SW.5	The NZTA shall finalise and implement the Temporary Stormwater Management Plan (TSMP) submitted with this application, <a href="#">as part of the CEMP</a> . The purpose of the TSMP is to ensure appropriate controls are in place to manage stormwater during construction.
<del>SW.6</del>	<del>Any amendments to the TSMP shall be approved by the [Auckland Council] in writing.</del>
SW.6	The NZTA shall undertake regular inspections of all stormwater treatment devices installed during construction to ensure they are operating successfully.
SW.7	The NZTA shall arrange and conduct a post construction site meeting within 30 days of completion of installation of the stormwater management works between Auckland Council and all relevant parties, including the site stormwater engineer.
SW.8	<p>The NZTA shall ensure that, for stormwater flows in excess of the capacity of the primary systems, major overland flow paths shall be provided and maintained to allow surplus stormwater from critical storms, up to the 100-year ARI event, to discharge with the minimum of nuisance and damage.</p> <p>Advice note: for the purposes of this Consent, "major overland flow paths" are those that accompany a primary drainage system of a nominal 600 mm diameter pipe or larger or with peak overland flow exceeding 0.5 m<sup>3</sup>/s in the 100-year ARI event.</p>
SW.9	Any stormwater outfalls authorised by this Consent shall incorporate erosion protection measures to minimise the occurrence of bed scour and bank erosion.
	<b>Operation</b>
SW.10	The permanent stormwater measures shall be installed and operated in accordance with the plans and information submitted with this application and the information contained within Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i> . In particular this requires the construction and completion of stormwater management works to the treatment standards detailed in Table 6.1 for the catchment areas detailed in Tables 6:24 of Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i> . <a href="#">Stormwater treatment should also be provided for adjunct activities associated with the Project including access roads and carparks for the tunnel ventilation buildings.</a>
SW.11	The NZTA shall inform the Auckland Council in writing at least 10 working days prior to the start date of the works authorised by this resource consent.

### Proposed Stormwater Conditions

SW.12	<p>The NZTA shall submit the final design of the operational stormwater system to the Auckland Council prior to the commencement of construction works on the permanent stormwater system. This shall include, but not be limited to:</p> <p>(e) Design calculations for the following:</p> <ul style="list-style-type: none"> <li>v) flow attenuation devices,</li> <li>vi) stormwater treatment device sizing,</li> <li>vii) bypass device design,</li> <li>viii) stormwater treatment device efficiency;</li> </ul> <p>(f) Design drawings, including all structures, outfalls, treatment devices, bypass devices, wetlands and ponds;</p> <p>(g) Catchment plans detailing the area draining to each device; and</p> <p>(h) Outfall locations.</p> <p>Any amendments to these designs shall be approved in writing by the Auckland Council prior to implementation.</p>
SW.13	<p>The NZTA shall arrange and conduct pre-construction site meetings between the [Auckland City] and all relevant parties, including the site stormwater engineer, with regard to the operational stormwater management works, prior to construction of the permanent stormwater devices. Any resulting amendments may be reviewed at that time and shall be approved in accordance with Condition SW.13.</p>
SW.14	<p>Within 90 days of the practical completion of the stormwater management system, "As Built" plans and documentation of the stormwater system which are certified as a true record of the stormwater management system by a suitably qualified Chartered Professional Engineer shall be supplied to the Auckland Council</p>
SW.15	<p>The NZTA shall submit to the Auckland Council within 90 days of the completion of installation of the stormwater management system an updated and final version of the Operational Stormwater Management Plan (OSMP) submitted with the application, <u>to confirm it meets the performance standards specified in Technical Report G.15</u>. The purpose of the OSMP is to set out operation and maintenance requirements for the long term operation of stormwater systems implemented as part of the Project.</p> <p><u>The OSMP shall include a monitoring programme for tunnel water quality to be agreed with the Auckland Council. The monitoring programme shall have a duration of two years. The</u></p>

**Proposed Stormwater Conditions**

	<p><u>water quality report shall be submitted to the Auckland council at the end of each year. The OSMP shall be updated at the end of the monitoring programme to revise procedures for the treatment and disposal of tunnel water.</u></p> <p>The OSMP shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) A programme for regular maintenance and inspection of works;</li> <li>(b) A programme for the collection and disposal of debris and sediment collected by the stormwater management devices or practices;</li> <li>(c) A programme for inspection and maintenance of outfall erosion;</li> <li>(d) A programme for post-storm maintenance;</li> <li>(e) General inspection checklists for all aspects of the stormwater management system;</li> <li>(f) Details of the person or bodies whom will hold responsibility for long-term maintenance of the stormwater management system and the organisational structure which will support this process.</li> </ul>
SW.16	Any amendments to the OSMP shall be approved by the Auckland Council in writing.
SW.17	The NZTA shall arrange and conduct a post construction site meeting within 30 days of completion of installation of the stormwater management works between the Auckland Council and all relevant parties, including the site stormwater engineer.
SW.18	<p>The NZTA shall ensure that, for major overland flow paths in excess of the capacity of the primary systems, secondary flow paths shall be provided and maintained to allow surplus stormwater from critical storms, up to the 100-year ARI event, to discharge with the minimum of nuisance and damage.</p> <p>Advice note: for the purposes of this consent "major overland flow paths" are those that accompany a primary drainage system of a nominal 600 mm diameter pipe or larger, or with peak overland flow exceeding 0.5 m<sup>3</sup>/s in the 100-year ARI event.</p>
SW.19	Any stormwater outfalls authorised by this Consent shall incorporate erosion protection measures to minimise the occurrence of bed scour and bank erosion.
SW.20	<p>The NZTA shall finalise and implement through the CEMP, the Concrete Batching and Crushing Management Plan (CBCMP) submitted with the application. <del>The NZTA shall provide the CBCMP to the [Auckland Council] prior to the commencement of any site works. The CBCMP shall be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing.</del> The CBCMP shall</p>

### Proposed Stormwater Conditions

	<p>include, but not be limited to, details of:</p> <ul style="list-style-type: none"><li>(a) Design of the stormwater treatment device(s)</li><li>(b) Monitoring requirements</li><li>(c) Procedures to be undertaken in the event of unexpected discharges</li><li>d) Complaints, investigation, monitoring and reporting.</li></ul>
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**Proposed Streamworks Conditions**

STW.1.	<p><b>General conditions</b></p> <p>The streamworks shall be undertaken in accordance with the plans and information contained within Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i> and Technical Report G.22 <i>Erosion and Sediment Control Plan</i>, submitted with this application.</p>
STW.2.	<p>Any future amendments that may affect the performance of the streamworks shall be approved by the Auckland Council in writing, prior to construction. Any amendments to the design should be in accordance with the Western Ring Route: Oakley Creek Re-alignment and Rehabilitation Guidelines (Boffa Miskell, 2010).</p>
STW.3.	<p>The NZTA shall inform the Auckland Council in writing at least 10 working days prior to any streamworks commencing, and again 10 working days before any environmental protection measures are removed.</p>
STW.4.	<p>Prior to streamworks commencing on site the NZTA shall arrange and conduct a pre-construction site meeting between Auckland Council, NZTA and the primary contractor, prior to any works commencing on the site.</p>
STW.5.	<p>Prior to commencement of streamworks associated with the realignments of Oakley Creek and the Stoddard Road tributary, the construction design details associated with these works shall be submitted to the Auckland Council for approval. The details shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) Detailed design of the proposed streamworks including long sections, cross sections and details of the design including any freshwater habitat improvement and riparian planting;</li> <li>(b) Construction erosion and sediment control plans (ESCP).</li> </ul>
STW.6.	<p>The NZTA shall forward a detailed construction programme and methodology to the Auckland Council prior to the commencement of works, and shall provide monthly updates during the streamworks. These shall include details of:</p> <ul style="list-style-type: none"> <li>(a) The commencement date and expected duration of the streamworks;</li> <li>(b) The location of any works and structures in relation to the streamworks; and</li> <li>(c) Dates for the implementation of erosion and sediment controls.</li> </ul>
STW.7.	<p>No streamworks shall be undertaken between 1 May and 30 September unless written approval has been obtained from the Auckland Council. Any such approval shall be sought at least 10 working days prior to the proposed commencement of the works.</p>

**Proposed Streamworks Conditions**

STW.8.	All erosion and sediment controls associated with the streamworks shall be constructed and installed in accordance with Technical Report G.22 <i>Erosion and Sediment Control Plan</i> submitted with this application.
STW.9.	The site shall be stabilised against erosion as soon as practicable and in a progressive manner as streamworks are finished.
STW.10.	All uncompacted material shall be kept clear of the channel during and after streamworks.
STW.11.	The NZTA shall ensure that any temporary dam structure built within the stream shall be constructed from non-erodible material (such as sandbags or sheet piles).
STW.12.	The NZTA shall ensure that when dewatering the in-stream works area, no sediment-laden water shall be discharged directly into a watercourse. Any sediment-laden water must be treated in an appropriate sediment treatment device.
STW.13.	All machinery shall be maintained and operated in a way which ensures that spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery servicing.
STW.14.	The NZTA shall ensure that: <ul style="list-style-type: none"> <li>(a) Any excavated sediment that requires temporary stockpiling shall not be placed within the 100 year ARI flood plain, and</li> <li>(b) Erosion and sediment control measures around the stockpile perimeter shall be constructed in accordance with TP90.</li> </ul>
STW.15.	The design engineer and Project ecologist shall monitor the construction of the streamworks. The NZTA shall submit 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 SW.2, within 60 working days of completion of the streamworks.
STW.16.	The NZTA shall obtain approval of the stream realignment works from the Auckland Council prior to diversion of Oakley Creek into the new channel.

### Proposed Streamworks Conditions

STW.17.	<p><b>Bridge Structure</b></p> <p>The NZTA shall submit a certificate signed by an appropriately qualified and experienced engineer to certify that the Oakley Creek bridge (SH20) has been constructed in accordance with the drawings supplied with this application, within 60 working days of completion of the structure.</p>
STW.18.	<p>Any erosion occurring as a result of construction of the Oakley Creek bridge (SH20) shall be remedied as soon as possible and to the satisfaction of the Auckland Council.</p>
STW.19.	<p>The area of Oakley Creek beneath the Oakley Creek bridge (SH20) shall be maintained free of debris to ensure stream flows are not restricted.</p>
STW.20.	<p><b>Streamworks Environmental Management Plan (SWEMP)</b></p> <p>The NZTA shall submit for <del>approval</del> <u>review</u> to the Auckland Council a Streamworks Environmental Management Plan (SWEMP) which shall include details of the final freshwater mitigation and environmental enhancement works associated with the Project <u>to confirm it is consistent with the design set out in Technical Report G.15 and principles of the “Western Ring Route – Maioro Street Interchange and Waterview Connection – Oakley Creek Realignment and Rehabilitation Guidelines” described in STW.21.</u> This SWEMP shall cover the mitigation for the loss of an area of Pixie Stream, Oakley Creek and the Stoddard Road tributary. It shall be submitted to the Auckland Council at least <del>40</del> <u>20</u> working days prior to the proposed enhancement works being commenced under this consent and shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>(a) The nature of works to be undertaken;</li> <li>(b) The location of works;</li> <li>(c) Detailed design and plans of all enhancements to the stream bed and/or stream channel, including any structures or other engineering works;</li> <li><del>(d)</del> Riparian planting programmes, including detailed planting plans and specifications relating to species mix, location, density, size and maintenance; <del>and</del></li> <li>(e) Timing of implementation; <u>and</u></li> <li>(f) <u>The outcomes of consultation with Iwi (Ngati Whatua o Orakei and Te Kawerau Tribal Authority) and Friends of Oakley Creek.</u></li> </ul>
STW.21.	<p>The SWEMP shall be prepared in general accordance with the “Western Ring Route – Maioro Street Interchange and Waterview Connection – Oakley Creek Realignment and Rehabilitation Guidelines” (Boffa Miskell, 2010) appended to <i>Technical Report G.6 Assessment of Freshwater Ecological Effects.</i></p>

**Proposed Streamworks Conditions**

STW.22.	The NZTA shall implement the mitigation and environmental enhancement works contained in the approved SWEMP within 12 months of practical completion of the Project.
STW.23.	The NZTA shall supply to the Auckland Council within 30 working days of the completion of the riparian planting works written confirmation from an appropriately qualified landscape architect or ecologist that the riparian plantings have been implemented in accordance with the SWEMP approved under Condition SW.20.
STW.24.	Any material amendments to the SWEMP shall be submitted for approval by the Auckland Council prior to any amendment being implemented.
STW.25.	<p><b>Fish Passage</b></p> <p>All proposed stream bed and/or stream channel structures shall not impede the passage of fish both upstream and downstream.</p>
STW.26.	<p><b>Flooding</b></p> <p>Works in the floodplain (including motorway embankments, ancillary earthworks and streamworks) shall be undertaken in accordance with the plans and information submitted with this application including, but not limited:</p> <p>(a) Waterview Connection Project. Assessment of Environmental Effects Report (Dated August 2010).</p> <p>(i) Plan F.2 Operation Scheme Plans</p> <p>(ii) Plan F.14 Streamworks and Stormwater Discharges</p> <p>(b) Technical Report G.15 <i>Assessment of Stormwater and Streamworks Effects</i>.</p>
STW.27.	Within 60 working days of completion of the works, the NZTA shall submit to the Auckland Council “as built” plans certified by a qualified and experienced engineer to confirm that the works have been carried out in accordance with Condition SW.26.
STW.28.	Any amendments to works by the NZTA in the floodplain that may increase the flooding effects shall be submitted to the Auckland Council for approval in writing, 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.

**Proposed Streamworks Conditions**

STW.29.	The NZTA shall submit to the Auckland Council a certificate signed by an appropriately qualified and experienced engineer to certify that the flood protection works for the tunnels have been constructed in accordance with the drawings, approach and standards supplied with this application, prior to the opening of the Project.
STW.30.	<u>Design of flood defences for the southern portal shall take into account the catchment management option preferred by Auckland Council with allowances for climate change and maximum probable development.</u>

### Proposed Freshwater Conditions

F.1.	<p>The NZTA shall finalise, and implement through the CEMP, the Ecological Management Plan (ECOMP) submitted with this application. The ECOMP shall be updated to ensure compliance with the conditions of this consent and include changes to the details of construction processes prior to construction commencing. The ECOMP shall include, but not be limited to details of:</p> <ul style="list-style-type: none"> <li>(a) Monitoring of the freshwater environment;</li> <li>(b) Trigger event criteria for undertaking additional monitoring;</li> <li>(c) Procedures for responding to accidental discharges of contaminants to the freshwater environment.</li> </ul>
F.2.	<p>The NZTA shall engage a suitably qualified ecologist to undertake freshwater monitoring programme prior to, during and following construction to monitor the effect of the Project on the freshwater ecology. The freshwater monitoring shall be undertaken in Oakley Creek, Pixie Stream and Meola Creek. The freshwater monitoring programme shall be undertaken in accordance with the details set out in the ECOMP and include:</p> <ul style="list-style-type: none"> <li>(a) Cross sectional profiles;</li> <li>(b) Macroinvertebrates sampling; and</li> <li>(c) Freshwater fish monitoring.</li> </ul>
F.3.	<p>The freshwater monitoring programme shall, as a minimum, be undertaken in accordance with the following frequency:</p> <ul style="list-style-type: none"> <li>(a) Prior to construction – two baseline surveys;</li> <li>(b) During construction – annually for fish and macroinvertebrates and three times per year for cross sectional profiles, prior to, during and at the end of the earthworks season;</li> <li>(c) Post construction – on an annual basis for a maximum period of three years, or less if the Auckland Council is satisfied that no adverse effects have occurred or are likely to occur from the Project.</li> </ul>
F.4.	<p>The NZTA shall undertake additional freshwater monitoring in the event of a ‘trigger event’ for freshwater habitats. For the purposes of this consent, a ‘trigger event’ for freshwater habitats is defined in the ECOMP.</p>

**Proposed Freshwater Conditions**

F.5.	The NZTA shall review the freshwater monitoring results, provided from Conditions F.2 to F.4, and results in monitoring detailed in earthworks Conditions E.9 and E.19. In the event that potential adverse effects are identified, the NZTA shall develop and implement appropriate contingency plans and/or remedial measures in accordance with the measures set out in the ECOMP.
F.6.	Freshwater monitoring reports shall be compiled from the monitoring undertaken pursuant to Conditions F.2 to F.4, and a report provided to the Auckland Council annually.

## Proposed Coastal Conditions

C.1	The NZTA shall provide to the Auckland Council plans and drawings (including dimensioned, cross sections, elevations and site plans of all areas of proposed reclamation ( <u>including associated permanent and temporary CMA occupation</u> ), <u>permanent structures</u> and temporary structures) at least 20 working days before the proposed date of commencement of the construction of the reclamation, <u>bridge piers</u> or temporary structure.
C.2	Construction shall be undertaken in accordance with the construction methodology detailed in the application, specifically Technical Report G.23 <i>Coastal Works</i> and Technical Report G.22 <i>Erosion and Sediment Control Plan</i> . The construction methodology shall include: (a) The use of temporary coffer dams to create dry working areas; (b) Realignment of <u>sections of</u> existing <u>low-tide</u> channels <u>in</u> Oakley inlet and Waterview Estuary <u>that will be directly affected by the reclamation works</u> ; (c) Removal of mangroves to provide construction and ground-treatment access, <u>placement of temporary coffer dams</u> and to facilitate natural channel migration in the Whau River side drainage channel ( <u>east of Rosebank Domain</u> ); (d) Installation or removal works to be undertaken at the best practicable time to minimise potential sediment- <u>generation disturbance</u> .
C.3	The NZTA shall notify the Auckland Council in writing of the proposed commencement date of the reclamation, <u>structures and/or</u> channel realignment works at least 10 working days prior to the proposed start date
C.4	The NZTA shall notify the Auckland Council in writing within 10 working days of the completion of each discrete area of reclamation, <u>structures and/or channel realignment works</u> .
C.5	The NZTA shall supply to the Auckland Council and <del>the</del> <u>LINZ Hydrographic Services and LINZ Topographic Services Office (Chief Hydrographer, National Topo/Hydro Authority, Land Information New Zealand, Private Box PO Box 5501, Wellington 6145)</u> , a complete set of “as built” plans, <u>final topographic and bathymetric data</u> , and appropriate certification confirming that the <u>new</u> reclamations, <u>structures and/or channel realignment works</u> have been built in accordance with sound engineering practice, within 60 working days of the completion of the reclamation works.
C.6	The NZTA shall maintain the site in good order and shall, as far as practicable, remedy all damage and disturbance caused by vehicle traffic, plant and equipment to the foreshore during construction, to the satisfaction of the Auckland Council.
C.7	Removal or pruning of vegetation in the CMA shall be limited to the areas of permanent and temporary occupation as shown on the Waterview Connection Project Assessment of Environmental Effects Plan Set F.12 and F.13 submitted with the application. Removal of <del>any</del> mangroves shall be implemented in accordance with the principles detailed in the Ecological Management Plan.
C.8	The NZTA shall <del>ensure the, remove</del> <u>removal of</u> all equipment, <u>erosion and sediment control measures</u> , surplus <del>soils</del> <u>sediment</u> and construction materials from the CMA within 20 working days following the completion of the construction works, to the satisfaction of the Auckland Council.

## Proposed Coastal Conditions

C.9	<p><b>Cleanfill</b></p> <p>All imported fill material to be used in the reclamations shall be in accordance with the Ministry for <a href="#">the Environment</a> “cleanfill” definition, as detailed in <a href="#">Publication ME418</a> “A Guide to the Management of Cleanfills, 2002” or subsequent updates.</p>
C.10	<p>The NZTA shall maintain a log recording the source of fill material imported onto each reclamation site. This log shall be made available to the Auckland Council for inspection on request.</p>
C.11	<p><b>Navigation of Whau River Bridge</b></p> <p><del>Boating access</del> <a href="#">Navigation of vessels</a> beneath the Whau River <a href="#">Bridges during construction</a> shall be maintained to the satisfaction of the Auckland Harbour Master.</p>
C.12	<p><b>Shell Banks</b></p> <p>On completion of the relevant stage of reclamation, the NZTA shall <a href="#">ensure that reinstate the stockpiled</a> chenier shell deposits from the northern side of the existing Causeway <a href="#">are reinstated</a> to suitable locations along the northern side of the newly reclaimed Causeway in consultation with the Department of Conservation <a href="#">and the Auckland Council</a>. The placement of the shell bank material shall be to the satisfaction of the Auckland Council. The movement of these reinstated shell deposits should be monitored quarterly for the first year after placement to <a href="#">confirm</a> they have been reworked by waves and re-attached to the unmodified shell banks <a href="#">by undertaking topographic survey transects at low tide and photographs to document the transition. The monitoring information shall be made available to the Auckland Council.</a></p>
C.13	<p><b><a href="#">Whau River side drainage channel</a></b></p> <p><a href="#">During preparation works in the CMA for ground improvement and reclamation works adjacent to the Rosebank Domain access road, mangroves required to be removed on the southern side of the existing drainage channel are to be extracted together with their root systems and removed from the CMA to facilitate the lateral migration of the channel to the south prior to infilling. The evolution of the channel shall be monitored by a baseline cross-section survey of the channel at two sites prior to construction, then monitoring the same sections every 2 months until 6 months after completion of the reclamation, together with photographs along the affected section, to confirm the natural migration of the channel is proceeding unimpeded by mangrove roots. The monitoring information shall be made available to the Auckland Council.</a></p>
C.14	<p><b><a href="#">Managed tidal channel realignments</a></b></p> <p><a href="#">Following final excavation of each of the three (3) realigned sections of low-tide channels in Waterview Estuary and Oakley Inlet (two sites) shall be monitored quarterly for one year after completion of the excavation, to confirm that the channel (thalweg and the transition sections with the unmodified channel) has reached a stable configuration. The monitoring can be achieved around low tide (average tide range) by an on-water visual reconnaissance, spot depth soundings and documented with photographs. The monitoring information shall be made available to the Auckland Council.</a></p>
C.15	<p><b><a href="#">Rosebank culvert</a></b></p> <p><a href="#">Within a month of the closure the Rosebank culvert under SH16 (adjacent to the Rosebank</a></p>

### Proposed Coastal Conditions

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

### Proposed Marine Ecology Conditions

M.1.	<p>The NZTA shall finalise and implement through the CEMP, the Ecological Management Plan (ECOMP) submitted with this application. The ECOMP shall be revised to accurately reflect the conditions of this consent and changes to the details of construction processes prior to construction commencing. The ECOMP shall include, but not be limited to, details of:</p> <ul style="list-style-type: none"> <li>(a) Monitoring of marine habitats and ecological values;</li> <li>(b) Trigger event criteria for undertaking additional monitoring;</li> <li>(c) Procedures for responding to accidental discharges to the marine environment;</li> <li>(d) Complaints investigation, monitoring and reporting; and</li> <li>(e) The identification of staff and contractors' responsibilities.</li> </ul>
M.2.	<p>The NZTA shall engage a suitably qualified ecologist to undertake a marine habitat monitoring programme, as described in Conditions M.3 to M.6.</p>
M.3.	<p>The marine <u>benthic</u> habitat monitoring programme shall be undertaken every 6 months:</p> <ul style="list-style-type: none"> <li>(a) At least 12 months prior to construction commencing, to allow for two baseline surveys to be undertaken;</li> <li>(b) During construction;</li> <li>(c) For a maximum of 3 years following completion of the Project, or for a lesser time if the monitoring indicates no significant effects, as agreed with the Auckland Council.</li> </ul>
M.4.	<p>The marine <u>benthic</u> habitat monitoring programme shall be undertaken in accordance with the details set out in the ECOMP and include:</p> <ul style="list-style-type: none"> <li>(a) Sampling of the marine invertebrate community composition (<u>collection of sediment cores</u> to a depth of approximately 15cm);</li> <li>(b) Sampling of the sediment surface (top 2cm) for sediment grain size;</li> <li>(c) Sampling of the sediment surface (top 2cm) for sediment quality (<u>analysis of the concentration of</u> copper, lead, zinc and polycyclic aromatic hydrocarbons).</li> </ul>

### Proposed Marine Ecology Conditions

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