

**WATERCARE SERVICES LIMITED – CENTRAL INTERCEPTOR MAIN WORKS**  
**RESOURCE CONSENT CONDITIONS**

The following conditions are related to their relevant consent reference as follows:

<b>Consent Ref</b>	<b>Consent/Permit</b>	<b>Relevant Conditions</b>
<b>Auckland Council District Plan (Auckland City Isthmus Section)</b>		
R/LUC/2012/2846	Construction of tunnel (earthworks and construction beneath land noted as being unstable)	1.1 – 1.34
<b>Auckland Council District Plan (Manukau Section)</b>		
PRC40962	Construction of tunnel and Link Sewer 4 (by network utility service, beneath road and earthworks beyond permitted levels); removal of existing pump station structure at Kiwi Esplanade Reserve.  Tree removal / works in dripline / rootzone of trees associated with removal of existing pump station structure and construction of Link Sewer 4.	1.1- 1.34, 2.1 - 2.2
<b>NES for Assessing and Managing Contaminants in Soil to Protect Human Health</b>		
R/LUC/2012/2846/1 and PRC40963	Disturbance of contaminated sites (all surface construction sites)	1.1- 1.34, 8.1 – 8.23
<b>Auckland Council Regional Plan (Sediment Control)</b>		
40834	Earthworks above permitted levels (all surface construction sites)	1.1- 1.34, 3.1 – 3.17
<b>Auckland Council Regional Plan (Air Land &amp; Water)</b>		
40836	Taking / diverting groundwater due to construction and dewatering of tunnels and shafts (Project-wide)	1.1 – 1.34, 4.1 – 4.34
40837	Discharge of stormwater from permanent works with impervious surfaces over 1,000m <sup>2</sup> (Western Springs)	1.1 and 1.5, 6.1 – 6.15
40838	Discharge of stormwater from permanent works with impervious surfaces over 1,000m <sup>2</sup> (Haverstock Road)	1.1 and 1.5, 6.1 – 6.15

40839	Discharge of stormwater from permanent works with impervious surfaces over 1000m <sup>2</sup> (PS25 Miranda)	1.1 and 1.5, 6.1 – 6.16
40840	Discharge of stormwater from permanent works with impervious surfaces over 5,000m <sup>2</sup> (May Road)	1.1 and 1.5, 6.1 – 6.15
40841	Discharge of stormwater during construction works (Project-wide)	1.1 – 1.34, 5.1 – 5.3
40835	Construction site related activities, e.g. tunnel dewatering, wheel wash, application of grout and concrete to land etc (Project-wide)	1.1 – 1.34, 3.1 – 3.17
40842	Discharges to air from tunnels and pump station at drop shafts and odour treatment facilities (Project-wide)	1.1 and 1.5, 7.1 – 7.11
40843	Disturbance of contaminated sites (Project-wide)	1.1 – 1.34, 8.1 – 8.23
<b>Auckland Council Regional Plan (Coastal)</b>		
40844	Works in the CMA – including all construction activities, occupation and use of tunnel; temporary construction platform and permanent sea wall structure at PS 23; and EPR structure adjacent to Mangere Pump Station (PS23, Kiwi Esplanade, Mangere Pump Station).	1.1 – 1.34, 9.1 – 9.18
40845		
40846		
40848	Discharges to CMA – stormwater discharges from construction works at PS23, Kiwi Esplanade and Mangere Pump Station.	1.1 – 1.34, 5.1 – 5.3
40849	Discharges to CMA – stormwater discharges from construction and permanent works at PS23 and Mangere Pump Station.	1.1 and 1.5, 6.1 – 6.15
40850	Discharges to CMA – overflow discharge from EPR structure at Mangere Pump Station.	1.1 and 1.5, 10.1 – 10.10

Pursuant to Section 108 of the RMA, the consents and permits described above shall, except as specified, be subject to the following conditions:

## **1. General Conditions**

### **Plans and Information**

- 1.1 Except as modified by the conditions below and subject to final design, the project shall be undertaken in general accordance with the evidence provided at the hearing and the plans and information submitted with the application and documented as

consent numbers R/LUC/2012/2846, R/LUC/2012/2846/1, PRC40962, PRC40963, 40834, 40835, 40836, 40837, 40838, 40839, 40840, 40841, 40842, 40843, 40844, 40845, 40846, 40848, 40849 and 40850 by the Council. The plans and information include:

- (a) Part A: Assessment of Environmental Effects, titled "*Central Interceptor Main Project Works – Resource Consent Applications and Assessment of Effects on the Environment*" prepared by Watercare/Central Interceptor Team, dated 10 August 2012, reference 60102004.
- (b) Part B: Site Specific Assessments, titled "*Central Interceptor Main Project Works – Assessment of Effects on the Environment*", prepared by Watercare/Central Interceptor Team and dated August 2012.
- (c) Part C – Drawing Set, prepared by Watercare/Central Interceptor Team dated August 2012 (all drawings dated 26 July 2012), except as amended by the plans provided in the Hearing Drawing Set (provided on 12 July 2013) and the further plan SK 1500 Rev B provided to the Council on 23 July 2013 regarding the proposed access to the May Road site but excluding:
  - Mt Albert War Memorial Reserve (AS1) - Permanent Works Plan AEE-MAIN-2.1 Rev C; and
  - Mt Albert War Memorial Reserve (AS1) - Construction Works Plan AEE-MAIN-2.2 Rev C.
- (d) Part D: Technical Reports (TR) as detailed below, and additional information:
  - TR E: Traffic Impact Assessment, prepared by Traffic Design Group, dated 24 July 2012;
  - TR F: Noise Impact Assessment, prepared by Marshall Day Acoustics, dated 23 July 2012;
  - TR G: Vibration Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 27993;
  - TR I: Ground Contamination Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 26145.401;
  - TR J: Groundwater and Surface Settlement Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 21645.32;
  - TR D: Archaeological Assessment, prepared by Clough & Associates Ltd, dated July 2012;
  - TR K: Erosion and Sediment Control Plans, prepared by Watercare Services Limited, dated 8 August 2012, and including plans CSO-ESCP-004-009;
  - TR B: Arboricultural Assessment, prepared by Arborlab Consultancy Services Limited, dated 30 July 2012, reference 17967;
  - TR A: Landscape and Visual Assessment, prepared by Boffa Miskell Limited, dated 26 July 2012;
  - TR C: Assessment of Ecological Effects, prepared by Boffa Miskell Limited, dated 24 July 2012;
  - TR H: Odour Assessment, prepared by Beca Infrastructure Ltd, dated 30 July 2012.

- (e) The Section 92 Response Report to Auckland Council, dated December 2012, and March 2013 including the following:
- Part A: Introduction and Background
  - Part B: AEE Report Questions Response, and Specialist Reports and information as follows:
    - Property Instruments;
    - Draft Construction Discharge Management Plan;
    - Archaeological response (Clough & Associates), dated 26 November 2012;
    - Contamination response (Tonkin & Taylor), dated 12 December 2012;
    - Transportation response (Traffic Design Group), dated 12 December 2012;
    - Acoustic response (Marshall Day Acoustics), dated 29 November 2012;
    - Vibration response (Tonkin & Taylor), dated 12 December 2012; and
    - Trenching Drawings.
  - Groundwater and Surface Settlement Effects (Tonkin & Taylor), dated 1 March 2013.
- (f) Part 1 of the second Section 92 Response Report to Auckland Council dated May 2013, including the following:
- Watercare response report (Parts A and B) dated 13 May 2013;
  - Mt Albert War Memorial Reserve Updated Drawings (AEE-MAIN-2.1A/2.2A, Issue D, dated 14 May 2013);
  - Traffic response (Traffic Design Group), dated 6 May 2013;
  - Vibration response (Tonkin & Taylor), dated 10 May 2013;
  - Noise response (Marshall Day), dated 13 May 2013;
  - Soil Conditioner Data Sheets;
  - Mt Albert War Memorial Reserve Car Park – Erosion and Sediment Control Plan, dated 23 April 2013, Revision A; and
  - Mt Albert War Memorial Reserve Car Park – Contamination response (Tonkin & Taylor), dated 2 May 2013; and
  - Mt Albert War Memorial Reserve Car Park - Groundwater and Settlement response (Tonkin & Taylor), dated 3 May 2013.
- (g) Part 2 of the second Section 92 Response Report to Auckland Council, being a letter from Watercare dated 27 May 2013 and including the following attachments:
- Attachment 1 – Amended Construction Discharges Condition;
  - Attachment 2 – Updated Chemical Treatment Management Plan and Construction Discharges Management Plan;
  - Attachment 3 – Watercare Incident Response Procedures;

- Attachment 4 – Roma Road Access Drawing;
  - Attachment 5 – Alternative Sites Comparisons;
  - Attachment 6 – Consultation Update;
  - Attachment 7 – Lyon Avenue Updated Drawings;
  - Attachment 8 – Mt Albert War Memorial Reserve Updated Drawing;
  - Attachment 9 – Haverstock Road Updated Drawings;
  - Attachment 10 – Updated Drawing Index; and
  - Attachment 11 – Information on Mangere WWTP and the Manukau Harbour.
- (ga) In relation to the *Mt Albert War Memorial Reserve – Car Park Site*, the supporting documents set out below, and as amended by Section 92 responses set out at condition (f) above:
- Part A: Assessment of Environmental Effects, titled "*Central Interceptor Main Project Works – Assessment of Effects on the Environment - Mt Albert War Memorial Reserve – Car Park Site*" prepared by Watercare/Central Interceptor Team, dated 8 March 2013, reference 60102004;
  - Appendix A: Drawings:
  - Mt Albert War Memorial Reserve Car Park (AS1) - Permanent Works Plan AEE-MAIN-2.1A Rev D
  - Mt Albert War Memorial Reserve Car Park (AS1) - Construction Works Plan AEE-MAIN-2.2A Rev E
  - Appendix D: Noise Impact Assessment prepared by Marshall Day Acoustics, dated 6 March 2013;
  - Appendix E: Traffic Impact Assessment prepared by Traffic Design Group, dated 8 March 2013; and
  - Appendix F: Vibration Assessment prepared by Tonkin & Taylor, dated 8 March 2013.
- (i) The further section 41C information requested and dated 20 September 2013, including:
- Supporting Information A – Drawings of proposed Lyon Avenue site and Mount Albert Grammar School Alternatives;
  - Supporting Information B – Memorandum from AECOM New Zealand Limited titled "CI – S41C Response – Technical Considerations Lyon Ave MAGS Alternative";
  - Supporting Information C – Memorandum from Arbolab Consultancy Services Limited titled "Arboricultural Memorandum – St Lukes";
  - Supporting Information D – Letter from Traffic Design Group Limited titled "Central Interceptor Project – Lyon Avenue Site (AS2): Access Options";
  - Supporting Information E – Correspondence from Ministry of Education;

- Supporting Information F – Memorandum from Marshall Day Acoustics Limited titled “Lyon Avenue site options assessment”;
- Supporting Information G – Memorandum from Tonkin and Taylor Limited titled “Central Interceptor Project – Technical report on settlement for site AS2 – S41C Direction”;
- Supporting Information H – “Central Interceptor Main Project Works – Comparative assessment of proposed Lyon Avenue site and MAGS Alternative Sites”; and
- Supporting Information I – Amended Drawing of Proposed Keith Hay Park Site.

### **Fees and Charges**

- 1.2 This consent (or any part thereof) shall not commence until such time as the following charges, which are owing at the time the council's decision is notified, have been paid in full:
- (a) All fixed charges relating to the receiving, processing and granting of this resource consent under section 36(1) of the Act; and
  - (b) All additional charges imposed under section 36(3) of the Act to enable the council to recover its actual and reasonable costs in respect of this application, which are beyond challenge.
- 1.3 The consent holder shall pay any additional charges imposed under condition 2(b) above, relating to the receiving, processing and granting of this resource consent within 20 days of receipt of notification of a requirement to pay the same. That is provided that, in the case of any additional charges that are subject to challenge, the consent holder shall pay such amount as is determined by that process to be due and owing, within 20 days of receipt of the relevant decision.

### **Monitoring Fees**

- 1.4 The Consent Holder shall pay the Council a consent compliance monitoring charge or charges to recover the actual and reasonable costs that have been incurred to ensure compliance with the conditions attached to this consent. (Such charges are to cover the cost of inspecting the site, carrying out tests, reviewing conditions, updating files, etc, all being work to ensure compliance with the resource consent and are to be paid within one month of the date of invoice.)

### **Site Access**

- 1.5 Subject to compliance with the Consent Holder's health and safety requirements and provision of reasonable notice, the servants or agents of the Council shall be permitted to have access to relevant parts of the surface construction sites controlled by the Consent Holder at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements and/or to take samples.
- 1.6 The Manager shall be informed in writing at least 20 working days prior to the commencement of the works authorised by these consents.
- 1.7 For the purposes identified in Condition 3.11, the Consent Holder shall hold a pre-construction site meeting at each construction site between representatives of the Council and all relevant parties, including the primary contractor, at least 10 working days prior to commencement of works authorised by these consents.

### **Construction Management**

**Note:** “*Project stage*” means a separable part of the Project, e.g. by Contract area or by geographical extent and may include one or more designated sites enabling the preparation of site-specific plans where appropriate.

- 1.8 Prior to the commencement of works authorised by these consents, the Consent Holder shall submit a Construction Management Plan ("CMP") for each of the relevant Project stages to the Manager for approval.

The purpose of the CMP is to confirm final project details and staging of works to illustrate that the works remain within the limits and standards imposed by the conditions of the consents and that the construction and operation activities avoid, remedy or mitigate adverse effects on the environment.

Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CMP may be prepared commensurate with the scale and effects of the proposed works, for the prior approval of the Manager. In some cases, with the prior approval of the Manager, a CMP may not be required.

The CMP(s) required by this condition shall include specific details relating to the management of all construction activities associated with the relevant Project stage to which they relate, including:

- (a) Details of the site or project manager and the construction liaison person, including their contact details (phone, postal address, email address);
- (b) An outline construction programme;
- (c) The proposed hours of work;
- (d) 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 construction materials and similar construction activities;
- (e) Location of site infrastructure including site offices, site amenities, contractors yards site access, equipment unloading and storage areas, contractor car parking, and security;
- (f) Procedures for controlling sediment run-off, dust and the immediate removal of soil, debris, demolition and construction materials (if any) from public roads or places adjacent to the work site;
- (g) Procedures for ensuring that residents, road users and businesses in the immediate vicinity of construction areas are given prior notice of the commencement of construction activities and are informed about the expected duration and effects of the works;
- (h) Means of ensuring the health and safety of the general public;
- (i) Procedures for the management of works which directly affect or are located in close proximity to existing network utility services;
- (j) Procedures for responding to complaints about construction activities;
- (k) Procedures for the safe and contained for refuelling of plant and equipment;
- (l) A Construction Noise and Vibration Management Plan ("**CNVMP**") for each site containing measures to address the management of construction noise and vibration as identified in Condition 1.10;
- (m) Measures for the protection of trees;
- (n) Measures to be implemented to avoid, remedy or mitigate effects on and from the high voltage electricity transmission network, including:
  - procedures detailing how the proposed works will be carried out in accordance with NZECP 34:2001 New Zealand Electrical Code of Practice for Electrical Safe Distances;

- procedures to manage the effects of dust and any other material potentially resulting from construction activities and able to cause damage, beyond normal wear and tear, to the overhead transmission lines;
- procedures to ensure that no activity is undertaken during construction that would result in ground vibrations or ground instability likely to cause damage to the overhead transmission lines, including supporting structures;

These procedures to be developed in consultation with Transpower NZ Limited.

- (o) Measures to address CPTED issues within and around the construction site;
- (p) Measures to address the storage of fuels, lubricants, or hazardous or dangerous materials, along with contingency procedures to address emergency spill response and cleanup;
- (q) Procedures for the maintenance of machinery to avoid discharges of fuels of lubricants to watercourses or the Coastal Marine Area ("**CMA**"); and
- (r) Methods and systems to inform and train all persons working on site of potential environmental issues and how to avoid remedy or mitigate any potential adverse effects.

The CMP shall be implemented and maintained throughout the entire construction period for the Project or relevant Project stage to manage potential adverse effects arising from construction activities and shall be updated as necessary. Any substantive change to the CMP shall be submitted to the Manager for approval at least ten working days prior to the change taking effect.

1.9 The construction programme section of the CMP shall illustrate that the Consent Holder has adequately prepared a programme that will enable the works to be constructed in a manner that is timely, adequately co-ordinated and manages the adverse effects of construction on the environment.

1.10 Construction hours shall be as follows, except where work is necessary outside the specified days or hours for the purposes specified below:

- (a) Tunnelling activities – 24 hours a day, 7 days a week operations for all tunnelling activities, including the main tunnel works and the link tunnels;
- (b) General site activities – 7 am to 6pm, Monday to Friday, 8am to 6pm Saturday; and
- (c) Truck movements – 7am to 6pm, Monday to Friday, 8am to 6pm Saturday, except that Truck movements are restricted from entering and exiting sites in proximity to schools and colleges between 8:15 am and 9:15 am and 2:45pm and 3:15 pm Monday to Friday during school and college term times. This includes, although is not limited to the following sites: Mt Albert War Memorial Reserve (Car Park site), Walmsley Road (AS4), Motions Road (L1S1), Pump Station 25 (L3S1), Lyon Avenue (AS2), and Miranda Reserve (L3S2).

Purposes for which work may occur outside of the specified days or hours are:

- (d) where, due to unforeseen circumstances, it is necessary to complete an activity that has commenced;
- (e) where work is specifically required to be planned to be carried out at certain times e.g. to tie into the existing network during periods of low flow, or to tie into tidal cycles for works in the CMA;

- (f) for delivery of large equipment or special deliveries required outside of normal hours due to traffic management requirements;
- (g) in cases of emergency; and
- (h) for the securing of the site or the removal of a traffic hazard; and/or
- (i) for any other reason specified in the CMP or a Traffic Management Plan required under Condition 1.22.

Where any work is undertaken pursuant to condition 1.10(d) – (i), the Consent Holder shall, within five working days of the commencement of such work, provide a report to Council detailing how the work was authorised under those conditions.

### Construction Noise and Vibration

- 1.11 A Construction Noise and Vibration Management Plan shall be prepared for each site, either as part of the CMP, or as a standalone plan, shall be prepared by a suitably qualified person, and shall be submitted to Council with the OPW to which it relates.
- 1.12 Construction noise shall be measured and assessed in accordance with NZS6803:1999 *Acoustics – Construction Noise*, and shall comply with the following noise limits, unless otherwise agreed in writing with affected persons:

Time and Day	Noise Limits	
	L <sub>Aeq</sub> dB	L <sub>Amax</sub> dB
Monday to Saturday 0730 – 1800	70	85
At All Other Times and Public Holidays	45	75

- 1.13 Construction works which exceed a level of L<sub>Aeq</sub> 45dB at the most exposed receiver(s) are restricted to between 0730 to 1800 on weekdays and Saturdays, with no noisy works permitted on Sundays and Public Holidays. Each CNVMP shall define which activities will comply with a limit of L<sub>Aeq</sub> 45dB and can therefore be undertaken outside of these hours in compliance with condition 1.10.
- 1.14 Each CNVMP shall, in demonstrating compliance with Condition 1.12, as a minimum, address the following aspects with regard to construction noise:
- (a) a description of noise sources, including machinery, equipment and construction techniques to be used;
  - (b) predicted construction noise levels;
  - (c) hours of operation, including times and days when noisy construction work and blasting would not occur in compliance with condition 1.12;
  - (d) physical noise mitigation measures, including prohibiting the use of tonal reverse alarms, maintenance of access roads (to ensure they are smooth), acoustic screening around the site, plant selection and maintenance procedures, and site layout;
  - (e) construction noise criteria for any specific areas and sensitive receivers such as schools, child care centres, medical or aged care facilities;
  - (f) the identification of activities and locations that will require the design of specific noise mitigation measures;
  - (g) the measures that will be taken by the Consent Holder to communicate and obtain feedback from affected stakeholders on noise management measures;
  - (h) methods for monitoring and reporting on construction noise;

- (i) methods for receiving and responding to complaints about construction noise; and
  - (j) construction operator training procedures.
- 1.15 Where a CNVMP predicts that noise levels from a particular activity will or will likely exceed the noise limits set out in condition 1.12, or where noise measurements show that compliance is not being achieved, the Consent Holder shall prepare and submit for the approval of the Council an Activity Specific Construction Noise Management Plan (**ASCNMP**). The ASCNMP(s) shall be endorsed with the written consent of those persons affected by the exceedances and shall be submitted to the Council for review and approval at least 7 working days prior to the proposed works commencing.
- Works subject to the ASCNMP(s) shall not commence until approval is received from the Council. If monitoring shows that levels specified in an ASCNMP are being exceeded, work generating the exceedance shall stop and not recommence until further mitigation is implemented in accordance with an amended ASCNMP approved by the Council.
- In addition to the requirements of condition 1.14, an ASCNMP must:
- (a) describe the activity (including duration), plant and machinery that is expected not to comply with the noise limits in condition 1.12;
  - (b) describe the mitigation measures proposed to reduce the noise levels as far as practicable, including any options that have been discounted due to cost or any other reason;
  - (c) provide predicted noise levels for all receivers where the noise levels will not be compliant with the limits in condition 1.12, including the effect of mitigation specified in 1.14(d);
  - (d) provide a set of noise limits that are Activity – Specific;
  - (e) describe the noise monitoring that will be undertaken to determine compliance with the Activity – Specific noise limits; and
  - (f) describe any additional noise mitigation measures that may be implemented to maintain compliance with Activity Specific noise limits.
- 1.16 Each CNVMP shall also describe measures adopted to meet the requirements of German Standard DIN4150-3:1999, and as a minimum shall address the following aspects with regard to construction vibration:
- (a) vibration sources, including machinery, equipment and construction techniques to be used;
  - (b) preparation of building condition reports on 'at risk' buildings prior to, during and after completion of works, where for the purposes of this condition an 'at risk' building is one at which the levels in the German Standard DIN4150-3: 1999 are likely to be approached or exceeded;
  - (c) use of building condition surveys to determine the sensitivity of the building(s) on the adjacent sites to ground movement in terms of the Line 1-3 criteria of the DIN standard;
  - (d) provision for the determination of buildings that require post-condition surveys to be undertaken following the commencement of blasting;
  - (e) identification of any particularly sensitive activities in the vicinity of the proposed works (e.g. commercial activity using sensitive equipment such as radiography or mass-spectrometry) including the NZ Institute for Plant and Food Research (at 118-120 Mt Albert Road, Mt Albert), the Institute of

Environmental Science and Research (Hampstead Road, Sandringham) and Caltex Western Springs (at 778-802 Great North Road, Grey Lynn), along with the details of consultation with the land owners of the sites where the sensitive activities are located and any management measures that will be adopted based on this consultation;

- (f) the measures that will be taken by the Consent Holder to communicate and obtain feedback from affected stakeholders on vibration management measures;
  - (g) methods for monitoring and reporting on construction vibration; and
  - (h) methods for receiving and responding to complaints about construction vibration.
- 1.17 Air overpressure levels from blasting shall comply with the following limits, measured and assessed in accordance with AS2187.2-2006 Explosives – Storage and Use Part 2: Use of Explosives:
- (a) For buildings that are not occupied for any blast event, the air overpressure limit shall be 133 dBZ L<sub>peak</sub> unless prior agreement is reached in writing with the owner(s) (in conjunction with a building pre-condition survey) that a higher limit may apply; and
  - (b) For buildings that are occupied for any blast event, and where there are less than 20 blast events to be undertaken on the site over the entire project, the air overpressure limit shall be 128 dBZ L<sub>peak</sub>; and
  - (c) For buildings that are occupied for any blast event, and where there are more than 20 blast events to be undertaken on the site over the entire project, the air overpressure limit shall be 120 dBZ L<sub>peak</sub>.
- Note:** A blast event may comprise the detonation of one or more charges in a period not exceeding three seconds.
- 1.18 The Guideline vibration limits set out in DIN 4150-3:1999 must be complied with for all blast events at all neighbouring buildings and infrastructure unless varied in accordance with condition 1.20.
- 1.19 Construction activities shall comply with the Guideline vibration limits set out in DIN 4150-3:1999 unless varied in accordance with condition 1.20.
- 1.20 The Guideline vibration limits set out in DIN4150 must not be exceeded except where the Consent Holder can demonstrate to the prior satisfaction of the Council:
- (a) that the receiving building(s) are capable of withstanding higher levels of vibration and what the new vibration limit is. The investigation required to demonstrate this must include an assessment of the building(s) by a suitably experienced and qualified structural engineer and a full pre-condition survey; and
  - (b) that the Consent Holder has obtained the written agreement of the building owner(s), that a higher limit may be applied.
- 1.21 Each CNVMP shall be implemented and maintained throughout the entire construction period. Each CNVMP shall be updated when necessary and any updated CNVMP shall be submitted to the Council in accordance with Condition 1.8.

### **Traffic Management**

- 1.22 A detailed Traffic Management Plan (**TMP**) or plans shall be prepared for the Project or relevant Project stage by a suitably qualified person.

- 1.23 The TMP(s) shall describe the measures that will be taken to avoid, remedy or mitigate the traffic effects associated with construction of the Project or Project stage. In particular, the TMP(s) shall describe:
- (a) Traffic management measures to maintain traffic capacity or minimise the impact on traffic capacity during weekdays and weekends;
  - (b) 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;
  - (c) Methods to manage the effects of the delivery of construction material, plant and machinery;
  - (d) Measures to maintain, existing vehicle access to property where practicable, or to provide alternative access arrangements;
  - (e) Measures to maintain pedestrian and cyclist movements and reduce the impact on mobility impaired users on roads and footpaths adjacent to the construction works. Such access shall be safe, clearly identifiable and seek to minimise significant detours;
  - (f) Measures to manage any potential effects on children at / around education facilities;
  - (g) Measures to manage any potential construction traffic related effects on pedestrians and/or traffic associated with large-scale events in parks, reserves, Western Springs Stadium, and Mt Albert War Memorial Reserve;
  - (h) Any proposed monitoring to measure the impact of the works on traffic and the impact of the traffic management measures. If safety or operational issues are evident, measures to be implemented to address these issues;
  - (i) Measures to manage the proposed access to the site should the access be unable to cater for two-way traffic passing at the same time, and in particular to minimise reverse movements and blocking of the road; and
  - (j) The availability of on-street and off-street parking if the designated site is unable to accommodate all contractor parking. This shall include an assessment of available parking (if any) for contractors on street and identify measures to meet and/or reduce contractor parking demand should it be found that there is insufficient on-street parking to meet this demand.
- 1.24 The TMP(s) shall be consistent with the New Zealand Transport Agency *Code of Practice for Temporary Traffic Management*, which applies at the time of construction.
- 1.25 Any damage in the road corridor directly caused by heavy vehicles entering or exiting construction sites shall be repaired within two weeks or within an alternative timeframe to be agreed with Auckland Transport.
- 1.26 Where works in parks or reserves impact on existing pedestrian or cycle ways, alternative temporary accessways shall be provided. Any temporary accessways shall be designed as far as practicable in accordance with Crime Prevention Through Environmental Design ("**CPTED**") principles and provide appropriate lighting and signage where necessary.
- 1.27 Works within transport corridors shall be undertaken in accordance with the National Code of Practice for Utility Operators Access to Transport Corridors (November 2011), unless otherwise agreed between the Consent Holder and the Corridor Manager.

## Dust Management

- 1.28 Beyond the boundary of the site, there shall be no dust caused by discharges from the site, which in the opinion of an enforcement officer, is noxious, offensive or objectionable.
- 1.29 All processes on site shall be operated in accordance with the Construction Management Plan as required by Condition 1.8 of this consent.
- 1.30 The Consent Holder shall ensure that dust management during excavation works generally complies with the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions, MfE (2001).

### **Cultural and Archaeological Management Plan**

- 1.31 The Consent Holder shall prepare a Cultural and Archaeological Management Plan ("CAMP") in consultation with tangata whenua (as listed in the report referenced in Condition 1.1(a)) and Auckland Council and shall submit this to the Manager for approval prior to the commencement of works. The purpose of the CAMP is to identify areas of potential cultural and archaeological significance and to establish methods, such as further archaeological investigation prior to works or monitoring by tangata whenua during works, at sites having potential archaeological and cultural significance. The CAMP shall also include the Accidental Discovery Protocol required by condition 1.32.

### **Accidental Discovery Protocol**

- 1.32 Detailed protocols for the management of archaeological and waahi tapu discoveries shall be developed by the Consent Holder in consultation with tangata whenua (as listed in the report referenced in Condition 1.1(a)) and the New Zealand Historic Places Trust prior to construction. These detailed protocols shall confirm the names and contact details for tangata whenua, the New Zealand Historic Places Trust, and Auckland Council to be contacted in accordance with the provisions below.

If any archaeological sites, including human remains are exposed during site works then the following procedures shall apply:

- (a) immediately after it becomes apparent that an archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease;
- (b) the Consent Holder shall immediately secure the area so that any artefacts or remains are untouched; and
- (c) the Consent Holder shall notify tangata whenua, the New Zealand Historic Places Trust and the Council (and in the case of human remains, the New Zealand Police) as soon as practicable, and advise those parties that an archaeological site has been exposed so that appropriate action can be taken. Works shall not recommence in the immediate vicinity of the archaeological site until approval is obtained from the New Zealand Historic Places Trust.

### **Lapse and commencement**

- 1.33 For construction related, or construction and operation related consents (i.e. consents R/LUC/2012/2846, PRC40962, R/LUC/2012/2846/1, PRC40963, 40834, 40836, 40835, 40837, 40838, 40839, 40840, 40841, 40843, 40844, 40845, 40846, 40848, and 40849):

This consent shall lapse on the expiry of a period of 15 years after the date on which the last of any appeals on all consents and notices of requirement associated with the Central Interceptor main project works is withdrawn or determined, or, if no appeals are lodged, the date on which the notices of requirement are included in the District Plan(s) in accordance with section 184(1)(c) of the RMA, unless:

- (a) it has been given effect before the end of that period; or

- (b) the Council determines, on an application made within 3 months before the expiry of that period, that substantial progress or effort has been made towards giving effect to the consent and is continuing to be made, and fixes a longer period for the purposes of this subsection.

- 1.34 For the operational air discharge consent and EPR discharge consent (i.e. consents 40842 and 40850) the commencement date shall be the date on which the Practical Completion Certificate, or equivalent, is issued for the Mangere Pump Station.

The Consent Holder shall notify the Manager within 5 working days of the Practical Completion Certificate being issued that the consent has commenced.

**Advice Note:** *This consent will have been given effect to, for the purpose of section 125 of the RMA, once the Central Interceptor main tunnel has been commissioned and there is the potential for an EPR discharge to occur. The consent will therefore have been given effect to regardless of whether a discharge ever does in fact occur.*

## **2. Vegetation and Ecology**

**(applies to consent PRC40962 only)**

- 2.1 The following matters shall be included in the CMP required under Condition 1.8 to address how the potential impacts of construction on trees and vegetation will be managed:
- (a) identification of trees to be protected, pruned, removed, or transplanted and procedures for marking these out on site;
  - (b) the proposed location for any transplanted trees, including those required for visual screen purposes, and detail of any required landowner agreements if these locations are outside of the designated area; and
  - (c) procedures for identifying and protecting significant trees to be retained where works occur in the dripline of such trees as identified by a suitably qualified person.
- 2.2 The trenching of Link Sewer 4 across Kiwi Esplanade Reserve (Lot 2 DP 77585 and Lot 3 DP 77585) shall be undertaken between 1 August and 31 December in any year so as to limit potential effects on roosting shorebirds.

## **3. Earthworks**

**(applies to consents 40834 and 40835 only)**

- 3.1 All earthworks shall be managed to minimise any discharge of debris, soil, silt, sediment or sediment-laden water beyond the site to either land, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, the activity which resulted in the discharge shall cease immediately and the discharge shall be mitigated and/or rectified to the satisfaction of the Manager.
- 3.2 The Consent Holder shall ensure that all discharges from tunnel dewatering activities, wheel washes and other occasional construction site related discharges are treated to an appropriate standard prior to discharge to stormwater drainage systems, watercourses or other receiving waters.

A Construction Discharges Management Plan ("**CDMP**") shall be prepared which describes how these discharges will be managed to avoid, remedy or mitigate potential adverse effects on receiving environments. The CDMP shall be submitted to the Manager for approval prior to any discharges occurring.

- 3.3 The standards for construction discharges to receiving environments shall be:
- (a) Turbidity of less than 50 NTU and pH within a range of between 5.5 - 8.

Alternative discharge quality standards for turbidity and pH may be implemented if:

- (b) a receiving environment monitoring programme is submitted to and approved by the Manager;
- (c) the receiving environment monitoring programme is implemented for a sufficient period of time to demonstrate that alternative standards for turbidity and pH are appropriate for the site; and
- (d) written approval is provided by the Manager.

3.4 The CDMP shall include a monitoring programme which shall address:

- (a) the monitoring to be undertaken to ensure that the discharges from all devices are complying with the discharge standards detailed in condition 3.3;
- (b) the erosion and sediment control and water management devices that require maintenance;
- (c) the time when the maintenance was completed; and
- (d) areas or incidents of non compliance with the discharge standards and monitoring plan (if any) and the reasons for the non compliance.

Any incidents in (d) above shall be reported to the Auckland Council on a monthly basis.

3.5 Prior to the commissioning of chemical treatments for sediment management and construction discharge purposes, the Consent Holder, shall provide the Manager, Auckland Council with a Chemical Treatment Management Plan ("**CTMP**"), for confirmation by the Manager that it will achieve the standards set out in the CDMP required under Condition 3.2. The CTMP shall follow the principles and chemical treatment details outlined within the AEE and supporting technical documents and shall include as a minimum:

- (a) specific design details of the chemical treatment system;
- (b) monitoring, maintenance (including post-storm) and contingency programme (including a Record Sheet);
- (c) details of optimum dosage (including assumptions);
- (d) results of the initial flocculation trials; and
- (e) a spill contingency plan.

Any amendments to the CTMP shall be approved by the Manager in writing, at least 10 working days prior to implementation.

3.6 Prior to earthworks commencing at any site, a detailed Erosion and Sediment Control Plan ("**ESCP**") for that area which clearly identifies the type and location of the controls proposed, shall be submitted to the Manager for approval. The ESCP(s) shall be in general accordance with TP90 and any amendments to that document, except where a higher standard is detailed in the documents referred to in Condition 1.1, in which case that higher standard shall apply.

3.7 Erosion and sediment control measures shall be carried out in accordance with the approved ESCP(s) required by this consent.

3.8 Any subsequent amendments to the approved ESCP(s) and / or methodology must be approved by the Manager in writing prior to any such amendment being implemented.

- 3.9 Prior to earthworks commencing at any site, a certificate signed by a suitably qualified person, confirming that the erosion and sediment controls have been constructed and completed in general accordance with the ESCP(s), shall be forwarded to the Manager.
- 3.10 In accordance with Condition 1.7, the Consent Holder or their agent shall arrange and conduct a pre-construction site meeting between representatives of the Council, the Consent Holder and their contractor, prior to any works commencing on a site. The purpose of the pre-construction site meeting is to discuss the proposed site access arrangements, ESCP(s) and other measures to be taken to comply with conditions of this consent. If as a result of that meeting any amendments are required to the erosion and sediment control methodology, those amendments shall be submitted to the Manager for approval in accordance with condition 3.6.
- 3.11 All perimeter controls shall be operational before earthworks begin.
- 3.12 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.
- 3.13 All sediment laden runoff from a site shall be treated by sediment control measures, as described in the consent application or modified under condition 3.6. These measures are to be constructed or installed in accordance with best practice, be operational before commencement of works and be maintained to perform at full operational capacity until the site has been adequately secured against erosion.
- 3.14 Sediment control measures shall be inspected on a weekly basis and after a significant storm event to ensure effective operation.
- 3.15 The site shall be stabilised in accordance with the ESCP in a progressive manner as earthworks are completed across various areas of the site.
- 3.16 To prevent discharge of sediment-laden water or other debris into any public stormwater drainage systems or watercourses and therefore into receiving waters, and to prevent nuisance and amenity impacts on users of the road reserve, there shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the site. In the event that such deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.
- 3.17 If works on a site are abandoned or will be unused for any reason, adequate preventative and remedial measures shall be taken to control sediment discharge and shall thereafter be maintained for as long as necessary to prevent sediment discharges from the site. All such measures shall be of a type and to a standard which are to the prior satisfaction of the Manager.

#### **4. Groundwater**

##### **(applies to consent 40836 only)**

- 4.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.
- 4.2 The Consent Holder shall ensure that all excavation, dewatering systems, retaining structures and associated works for the construction of the shafts, tunnels, underground structures and associated works, including all temporary and permanent works, shall be designed, constructed and maintained so as to avoid, as far as practicable, any damage to buildings, structures and services (including road

infrastructure assets such as footpaths, kerbs, catch-pits, pavements and street furniture).

- 4.3 The Consent Holder shall ensure that all backfilling of temporary shafts is designed and constructed to the required engineering standard, so as to avoid any damage to buildings, structures and services.
- 4.4 The Consent Holder shall, at least 10 working days prior to the commencement of shaft sinking or tunnelling, advise the Manager, in writing, of the date of the proposed commencement of this work.
- 4.5 The Consent Holder shall, at least 10 working days following completion of shaft sinking or tunnelling, advise the Manager, in writing, of the date of completion.

### **Monitoring and Contingency Plan**

- 4.6 The Consent Holder shall, before commencement of shaft sinking or tunnelling, prepare a Monitoring and Contingency Plan or Plans ("**M&CP**") addressing groundwater and settlement monitoring for each of the relevant Project stages. The M&CP shall demonstrate how the conditions of this consent will be implemented and shall include the following:
- (a) details of the building risk assessment process and building condition surveys required by Conditions 4.10 to 4.18 of this consent;
  - (b) details of the groundwater monitoring programme required by Conditions 4.19 – 4.21, 4.23 and 4.25 of this consent;
  - (c) details of the ground surface settlement and building movement monitoring required by Conditions 4.26 – 4.29, 4.31 and 4.34 of this consent;
  - (d) location Plan of settlement and building deformation marks and the location of existing and proposed groundwater monitoring bores.
  - (e) details of the shaft retaining wall monitoring programme required by Conditions 4.26 and 4.29 of this consent.
  - (f) the groundwater, deformation and settlement Alert and Alarm Levels (Trigger Levels) to be utilised for early warning of settlement with the potential to cause damage to buildings and services and details of the processes used to establish, and if necessary, to review these triggers;
  - (g) details on the procedures for notification of the Manager in the event that Trigger Levels are exceeded;
  - (h) options for additional investigations and analyses to determine the potential for groundwater effects or settlement and for damage to structures, including additional groundwater or settlement monitoring and building condition surveys;
  - (i) details of the contingency measures to be implemented in the event of trigger levels being exceeded, including details on the practicable methodologies to avoid, remedy, or mitigate surface settlements with the potential to cause damage to buildings; and
  - (j) A methodology to identify trenched sections where there is potential for ground settlement to cause damage to houses or buildings and the measures that will be taken to ensure such damage does not occur.
- 4.7 The Consent Holder shall submit to the Manager for written approval:
- (a) at least 14 months prior to the Commencement of Dewatering for shaft sinking or tunnelling of any Project stage, those aspects of the M&CP dealing with

pre-construction monitoring, including the pre-construction monitoring required under conditions 4.12, 4.13, 4.21 and 4.28; and

- (b) at least 20 working days prior to Commencement of Dewatering for shaft sinking or tunnelling of any Project stage, the M&CP.

4.8 The Consent Holder shall comply with the M&CP at all times.

4.9 The Consent Holder may amend the M&CP from time to time, as necessary for the Project or any Project stage. Any amendments to the M&CP must be approved by the Manager in writing prior to any such amendment being implemented.

### **Building Condition Surveys**

4.10 The Consent Holder shall undertake a risk assessment to identify existing buildings and structures at risk of damage due to settlement caused by shaft sinking or tunnelling activities. The risk assessment process shall be set out in the M&CP required by Condition 4.6 and shall be based upon the final tunnel alignment and construction methodology, the groundwater and settlement monitoring required under this consent, and groundwater and settlement modelling completed using this data. The risk assessment shall include:

- (a) identification of the zone of influence where differential settlements of greater (steeper) than 1:1,000 are predicted due to shaft sinking or tunnelling activities;
- (b) identification of the building types in this zone, and their susceptibility to settlement induced damage; and
- (c) identification of the buildings and structures at risk of damage due to shaft sinking or tunnelling activities.

4.11 A schedule of the addresses of existing buildings and structures identified as being potentially at risk of damage through the building risk assessment process defined in Condition 4.10 shall be included in the M&CP required by Condition 4.6.

### **Pre-construction Condition Survey**

4.12 The Consent Holder shall consult with owners of existing buildings and structures identified through the building risk assessment process defined in Condition 4.10, and subject to the owner's approval on terms acceptable to the Consent Holder, undertake a detailed pre-construction condition survey of these structures to confirm their existing condition and enable the sensitivity of the existing buildings and structures to any groundwater and ground settlement changes to be accurately determined. The survey shall be completed at least three months prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling. The intent of the survey is to assist in enabling the magnitude of allowable effects from changes in groundwater pressure and ground settlement movements to be reasonably determined.

The survey shall include but not necessarily be limited to the following:

- (a) major features of the buildings and site developments, including location, type, construction, age and existing condition;
- (b) type and capacity of foundations;
- (c) existing levels of aesthetic damage;
- (d) existing level of structural distress or damage;
- (e) assessment of structural ductility;

- (f) susceptibility of structure to movement of foundations, including consideration of the local geological conditions; and
- (g) susceptibility of scheduled heritage buildings to movement of foundations.

A photographic record of the inspection shall be included.

**Note:** *'Commencement of Dewatering' means excavation below the groundwater table and/or commencing taking any groundwater from a shaft excavation (after construction of the pile walls (if required) and/or dewatering prior to excavation).*

- 4.13 Where neighbouring building/property owners indicate, to the satisfaction of the Manager by way of a recommendation from a qualified and experienced vibration consultant, the presence of particularly sensitive structures (examples include old or brittle structures, vibration sensitive equipment, unusually heavy loads or settlement sensitive machinery) the Consent Holder shall undertake a full engineering assessment to determine what, if any, additional avoidance, design, remedial or monitoring works are required in this vicinity. The Manager may require an independent review of that assessment by a Chartered Professional Engineer
- 4.14 The building condition surveys required by this consent shall be undertaken by an independent and suitably qualified person.

#### **Post-construction Condition Surveys**

- 4.15 Unless otherwise agreed in writing with the building owner that such survey is not required, the Consent Holder shall (subject to the owner(s) approval on terms acceptable to the Consent Holder), within six months of the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, undertake a post-construction survey covering the matters identified in Condition 4.12 for any building located in an area where differential settlement of greater (steeper) than 1:1,000 occurs between two adjacent settlement monitoring points measured in accordance with the M&CP and a pre-construction condition survey was undertaken in accordance with condition 4.12 or condition 4.13. The Consent Holder may, if they are able to provide evidence to show the deformation was not caused by activities related to this consent, seek written approval from the Manager to waive this condition. If, since the pre-construction survey, any building damage is identified, the survey shall determine the likely cause of damage.

**Note:** *'Completion of Dewatering' means when all the permanent shaft lining, base slab and walls are complete and the tunnel lining is complete, and effectively no further groundwater is being taken for the construction of the shaft/tunnel.*

- 4.16 The Consent Holder shall, at the direction of the Manager, and subject to the owner's approval on terms acceptable to the Consent Holder, undertake an additional survey on any existing building or structure located within the zone of settlement influence determined under Condition 4.10, or any existing building or structure surveyed in accordance with Condition 4.13, for the purpose of checking for damage and for following up on a report of damage to that building. The requirement for any such survey will cease six months after the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling.
- 4.17 The Consent Holder shall ensure that a copy of the pre, post-construction and any additional building survey reports are forwarded to the respective property owner(s) and the Manager (unless the property owner(s) has instructed the Consent Holder not to do so) within 15 working days of completing the reports.

#### **Repair of Damage**

- 4.18 If the exercise of this consent causes any unforeseen damage to buildings, structures or services not assessed under Conditions 4.15 and 4.16, the Consent Holder shall

notify the Manager as soon as practicable, and provide in writing to the Manager a methodology for repair of the damage caused that has been approved by a Chartered Professional Engineer and shall urgently undertake such repairs in accordance with the approved methodology, at its cost, unless written approval for this damage is provided from the owners.

**Note:** *Unforeseen damage* – means damage to buildings and structures that has occurred outside the area identified as the zone of influence under Condition 4.10 or to buildings or structures that are located within the zone of influence but were not considered to be at risk at the time of the approval of the M & CP.

### **Groundwater Monitoring**

- 4.19 The Consent Holder shall install and maintain groundwater monitoring boreholes at the locations described in the M&CP for the period required by the conditions of this consent. Should any of the monitoring bores be damaged and become in-operable or unsuitable for monitoring, then the Manager is to be informed and a new monitoring bore shall be installed at a nearby location in consultation with the Manager.
- 4.20 The Consent Holder shall monitor groundwater levels in the groundwater monitoring boreholes and keep records of the water level measurement and corresponding date. All water level data shall be recorded to an accuracy of at least  $\pm 5\text{mm}$ . These records shall be compiled and submitted to the Manager at six monthly intervals.
- 4.21 The Consent Holder shall monitor groundwater levels monthly in boreholes identified in the M&CP and keep records for a period of at least 12 months before the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling. The variability in groundwater levels over this period will be utilised to establish the seasonal groundwater level variability. The Consent Holder shall monitor groundwater levels monthly in any proposed boreholes for a period of at least two months (three readings indicating steady state) before the Commencement of Dewatering of any Project stage involving shaft sinking or dewatering.
- 4.22 Prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder shall assess the potential groundwater effects resulting from the exercise of this consent. The output of this assessment shall be used to define the expected groundwater level at each borehole and to establish groundwater Trigger Levels for each borehole that minimise the potential for damage to existing buildings or structures. The process for establishing groundwater Trigger Levels shall be set out in the M&CP and shall be based upon the final tunnel alignment and construction methodology, and any groundwater monitoring required under this consent, and shall be based upon groundwater modelling completed using this data. A factor of natural seasonal variability shall be allowed for in this review based on the survey completed under Condition 4.21.
- 4.23 From Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder 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 to the above, all boreholes located within 100 metres of active shaft construction sites or within 100 metres of the tunnel excavation face shall be monitored for groundwater level at least once every week. These records shall be compiled and submitted to the Manager at six monthly intervals.
- 4.24 All monitoring data obtained pursuant to Condition 4.23 shall be compared to the predicted groundwater levels for each borehole. Where Trigger Levels are exceeded the actions as set out in the M&CP shall be undertaken and the Manager shall be notified within three working days, advising of the trigger exceedance, the risk of settlement causing damage to buildings, and details of the actions taken.

4.25 The Consent Holder shall continue to monitor groundwater levels in each borehole at monthly intervals for a period of 12 months following Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, or for a lesser period if groundwater levels in any particular borehole show either:

- (a) recovery of the groundwater level to within 2 metres of the pre-construction groundwater level and is above trigger levels; or
- (b) a trend of increasing groundwater level in at least three consecutive monthly measurements and is above trigger levels,

in which case monitoring at that borehole may cease.

After 12 months following the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, monitoring of groundwater levels shall continue at the direction of the Manager if groundwater levels are not recovering from construction effects and there is a risk of adverse effects.

### **Settlement Monitoring**

4.26 The Consent Holder shall establish and maintain a settlement monitoring network of Ground Settlement Monitoring Marks and Building Movement Marks to detect any deformation (vertical and/or horizontal movements) at the locations described in the M&CP and for the period required by the conditions of this consent.

The Ground Settlement Monitoring Marks shall be located generally as follows:

- (a) at least one mark within 5 metres of each of the groundwater monitoring boreholes described in Condition 4.19;
- (b) at locations along the alignment of the tunnels, and around each of the shafts, such that:
  - (i) the marks are more closely spaced in areas of higher settlement risk, and more widely spaced in areas of low settlement risk, these areas being identified in the risk assessment carried out under Condition 4.10;
  - (ii) the marks are of sufficient number and are located such that they provide a reliable basis for assessing, monitoring and responding to settlement risk during shaft sinking and tunnelling construction work and for confirming compliance with the limits set out in Condition 4.33; and
  - (iii) the marks shall extend out on each side of the tunnel alignment and around each of the shafts by at least 50 metres beyond the zone of influence identified in the risk assessment carried out under Condition 4.10.

#### Shaft Retaining Wall Deformation Monitoring:

At shaft locations identified in the risk assessment under Condition 4.10 as being in an area of high settlement risk, sufficient inclinometers shall be installed, in accordance with industry best practice, in temporary shaft retaining walls to measure wall deformation. Measurement accuracy shall be to best practice.

#### Building Movement Monitoring Marks

Subject to the owner's approval, and on terms acceptable to the Consent Holder, the Building Movement Monitoring Marks shall be located generally on or around buildings or structures identified in the risk assessment process under Condition 4.10 as being at risk of damage due to settlement caused by shaft sinking or tunnelling activities.

The final location and number of Building Movement Monitoring Marks shall take into account the number of buildings, building type and size, accessibility to survey the marks and the risk of damage due to ground settlement. Building Movement Monitoring Marks need not be installed on ancillary buildings such as garages and sheds or any other structure for which the Manager has given written approval.

- 4.27 In the event of any of the monitoring marks required under Condition 4.26 being destroyed or becoming inoperable, the Consent Holder shall, unless otherwise agreed in writing by the Manager, replace the monitoring marks with new monitoring marks.
- 4.28 The Consent Holder shall survey and record the elevation of each Ground Settlement Monitoring Mark and record the corresponding date. Ground Settlement Monitoring Marks shall be surveyed at least three times over a 12 month period prior to commencement of any Project stage involving shaft sinking or tunnelling to establish seasonal variability, and the minimum level of these baseline surveys shall be used to establish the pre-construction reference ground level. All surveys are to be completed to an accuracy of at least  $\pm 2\text{mm}$  for level and  $\pm 5\text{mm}$  for plan position, or as otherwise achieved by best practice precise levelling.
- 4.29 The Consent Holder shall survey and record the readings of each inclinometer as required in condition 4.26 at an average of each 2 metres depth of shaft excavation, and at a minimum frequency of fortnightly intervals from the Commencement of Dewatering of any Project stage involving shaft sinking for a period of one month after the Completion of shaft Excavation, thence monthly until the Completion of Dewatering for any Project stage involving shaft sinking. At least two baseline surveys shall be completed before Commencement of Dewatering.
- 4.30 Prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder shall assess the potential settlement effects resulting from the exercise of this consent. The output of this assessment shall be used to define the expected settlement levels and to establish settlement Trigger Levels (Alert Levels and Alarm Levels) that minimise the potential for damage to existing buildings or structures. The process for establishing settlement Trigger Levels shall be set out in the M&CP and shall be based upon the final tunnel alignment and construction methodology, any groundwater, deformation or settlement monitoring required under this consent, and groundwater and settlement modelling completed using this data. A factor of natural seasonal variability shall be allowed for in this review based on the survey completed under Condition 4.28.

**Note:**

*'Alert Level'* is the Differential and Total Settlement Limit set at a threshold less than the Alarm Level, at which the Consent Holder shall implement further investigations and analyses as described in the M&CP to determine the cause of settlement and the likelihood of further settlement.

*'Alarm Level'* is the Differential and Total Settlement Limit set in Condition 4.33, or which has the potential to cause damage to buildings, structures and services, at which the Consent Holder shall immediately stop dewatering the site and cease any activity which has the potential to cause deformation to any building or structure or adopt the alternative contingency measures approved by the Manager.

- 4.31 During construction in any Project stage involving shaft sinking or tunnelling, the Consent Holder shall survey the complete settlement network described in Condition 4.26 at six monthly intervals and keep records of each date and the corresponding ground surface and building level. In addition to the above, all Ground Surface Monitoring Marks located within 50 metres of the excavated tunnel and within 100 metres of an excavated shaft or the tunnel excavation face shall be monitored at least

once every month. These records shall be compiled and submitted to the Manager at six monthly intervals.

- 4.32 The Consent Holder shall compare all settlement monitoring data obtained during shaft sinking and tunnelling construction work to the pre-construction minimum levels in accordance with the M&CP. Where Trigger Levels are exceeded the appropriate actions as set out in the M&CP shall be undertaken and the Manager shall be notified within three working days, advising of the trigger exceedance, the risk of settlement causing damage to buildings, and details of the actions taken.
- 4.33 The Consent Holder shall use all reasonable endeavours to ensure that the exercise of this consent does not cause:
- (a) greater (i.e. steeper) than 1:1,000 differential settlement (the Differential Settlement Limit) between any two adjacent settlement monitoring points required under this consent; or
  - (b) greater than 50mm total settlement (the Total Settlement Limit) at any settlement monitoring point required under this consent.
- 4.34 The Consent Holder shall continue to monitor the Ground Settlement Monitoring Marks at six monthly intervals for 12 months after Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, or for a shorter period if approved by the Manager.

At 12 months following the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, monitoring of ground and settlement marks shall continue at the direction of the Manager if settlement marks have breached trigger levels and there is risk of adverse effects.

## **5. Stormwater – During Construction**

**(applies to consents 40841 and 40848)**

- 5.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.
- 5.2 At the Western Springs and May Road sites, rain tanks shall be installed to provide attenuation of the runoff from the shed enclosure roof areas. Design volumes for the raintanks shall be submitted to the Manager for approval prior to the construction of the shed enclosure roof areas.
- 5.3 The works shall be undertaken in accordance with the following specific conditions of Consent No. 40834:
- Earthworks conditions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13 and 3.14.

## **6. Stormwater - Permanent Works**

**(applies to consents 40837, 40838, 40839, 40840 and 40849 only)**

### **Duration**

- 6.1 This permit shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

### **Stormwater Works**

- 6.2 The Consent Holder shall submit a Stormwater Management Plan ("**SMP**") or plans for the approval of the Manager no less than 20 working days prior to the construction of permanent impervious surfaces and stormwater works at each site. The plan or plans shall address stormwater management in relation to permanent works at the following sites:

- Western Springs;
- Haverstock Road;
- PS 25 (Miranda Reserve);
- May Road;
- PS 23 (Frederick Street); and
- Mangere Pump Station.

Provided that, no SMP need be submitted if the final design of the works demonstrates that the impervious surfaces will be less than 1,000m<sup>2</sup> in area.

6.3 The Stormwater Management Plan(s) shall include, but not be limited to:

- design details for the proposed stormwater management system, if required, including confirmation of the site impervious area and the contributing site catchment area;
- a description of how the general provisions of TP10 and TP108 have been applied in developing the design details;
- a description of how the following stormwater management objectives shall be met for the following sites:

100 Year ARI attenuation to pre-development levels	May Road
2 & 10 year ARI attenuation to pre-development levels	Western Springs Haverstock Road
Extended detention of the first 34.5mm and release over 24 hours	PS25 May Road
Water quality treatment to 75% removal of TSS on a long term average basis	All sites - all vehicle movement areas greater than 1,000m <sup>2</sup>

- a description of the extent to which Low Impact Design has been included as part of the stormwater management system;
- supporting calculations for the sizing of pipework and associated stormwater systems;
- a description of how stormwater flows in excess of the primary system are to be provided for, up to the critical storm event with a 1% Annual Exceedance Probability;
- an assessment of the potential effects of site development on existing overland flow paths and the proposed measures to ensure adjacent properties are not adversely affected by the Consent Holders' construction or permanent works; and
- a description of any relevant provisions to minimise erosion and flood safety hazards.

6.4 The Consent Holder shall construct the stormwater management systems in accordance with the SMP as required by Condition 6.2. Any amendments that may affect the capacity or performance of the stormwater management systems shall be approved by the Manager in writing, prior to construction of the stormwater management systems.

### **Construction Meetings**

- 6.5 Five working days prior to initiation of any construction of permanent stormwater devices on the site, a pre-construction site meeting between the Manager and all relevant parties, including the site stormwater engineer, shall be arranged.
- 6.6 The following information shall be provided at the pre-construction meeting:
- (a) Timeframes for key stages of the works authorised under this consent;
  - (b) Contact details of the site contractor and site stormwater engineer; and
  - (c) Approved (signed/stamped) construction plans.
- 6.7 Within 30 working days of the practical completion of the stormwater management systems, a post construction site meeting shall be arranged and conducted between the Manager and all relevant parties, including the site stormwater engineer.
- 6.8 Within 30 working days of the practical completion of the stormwater management systems, "as-built" plans and documentation of the stormwater system which are certified as a true record of the stormwater management systems by a suitably qualified person shall be supplied to the Manager.

### **Operation and Maintenance**

- 6.9 An Operation and Maintenance Plan for the stormwater management system shall be submitted to the Manager within 30 working days of completion of the installation of the permanent stormwater works set out in the SMP.
- 6.10 The Operation and Maintenance Plan shall set out how the permanent stormwater management system is to be operated and maintained to ensure adverse environmental effects are minimised. The plan shall include, but not be limited to:
- (a) a programme for regular maintenance and inspection of the stormwater management system;
  - (b) a programme for the collection and disposal of debris and sediment collected by the stormwater management devices or practices;
  - (c) a programme for post storm inspection and maintenance;
  - (d) a programme for inspection and maintenance of the outfall (where relevant);
  - (e) general inspection checklists for all aspects of the stormwater management system, including visual checks;
  - (f) a program for inspection and maintenance of vegetation associated with the stormwater management devices (where relevant); and
  - (g) details of who will hold responsibility for long-term maintenance of the stormwater management system and the organisational structure which will support this process.
- 6.11 The stormwater management and treatment system shall be managed in accordance with the approved Operation and Maintenance Plan.
- 6.12 Any amendments to the Operation and Maintenance Plan shall be submitted to and approved by the Manager, in writing prior to implementation.
- 6.13 A maintenance report shall be provided to the Manager on request. The maintenance report shall include but not be limited to the following:
- (a) details of who is responsible for maintenance of the stormwater management system and the organisational structure supporting this process;
  - (b) details of any maintenance undertaken; and

- (c) details of what inspections were completed over the preceding twelve months.

### **Proprietary Devices**

- 6.14 Where proprietary devices are installed, a written maintenance contract with an appropriate stormwater management system operator, shall be entered into, and maintained, for the ongoing maintenance of the proprietary stormwater management device.
- 6.15 Within 30 working days of the completion of stormwater works, a signed copy of the contract required by condition 6.14 shall be forwarded to the Manager. An operative contract shall be provided to the Manager upon request throughout the term of the consent.

### **7. Discharges to Air**

#### **(applies to consent 40842 only)**

- 7.1 This permit shall expire 35 years from the date of commencement unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.
- 7.2 The Consent Holder shall, at all times operate, monitor and maintain the Central Interceptor tunnel so that odour discharges authorised by this consent are maintained at the minimum practicable level.
- 7.3 Within any private property there shall be no odour caused by discharges from the normal operation of the Central Interceptor tunnel which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.

***Advice Note: the storage and transfer of wastewater within the Central Interceptor as well as scheduled maintenance activities, and any discharges into air arising from this, are considered part of the normal operation of the tunnel.***

- 7.4 Except during maintenance, cleaning, or other inspections all access hatches shall be adequately covered to ensure fugitive discharges to atmosphere are kept to a minimum practicable level.
- 7.5 The Consent Holder shall give consideration to the wind direction, wind strength and weather conditions and the likelihood of neighbours present prior to undertaking any tunnel maintenance activities on site that have the potential to generate odour effects beyond the site boundary.
- 7.6 All access hatches, fans, ducting and emissions control equipment shall be designed and maintained in good condition and be free from leaks so that fugitive discharges to the atmosphere are kept to a minimum practicable level.
- 7.7 All relevant fans and ducting to emissions control equipment shall draw sufficient negative pressure so that fugitive discharges to the atmosphere are kept to a minimum practicable level.
- 7.8 In the event that there are ongoing elevated levels of odour at sites containing access shafts, drop shafts, air vents or air treatment facilities along the alignment of the Central Interceptor tunnel, remedial action shall be taken by the Consent Holder to reduce those discharges so that there are no objectionable or offensive effects beyond the site boundary, in the opinion of an enforcement officer.
- 7.9 Prior to constructing any air treatment facility, final details relating to the design and operation of that air treatment facility shall be submitted to the Manager to demonstrate how the facility will achieve compliance with Conditions 7.2 and 7.3.
- 7.10 All odour complaints that are received arising from the operation of the Central Interceptor tunnel shall be recorded. The complaint details shall include:

- (a) the date, time, location and nature of the complaint;
- (b) the name, telephone number and address of the complainant, unless the complainant elects not to supply these details;
- (c) weather conditions, including approximate wind speed and direction, at time of the complaint; and
- (d) any remedial actions undertaken.

Details of any complaints received (as recorded above) shall be provided to the Manager within 7 days of receipt of the complaint(s).

- 7.11 All records required by the conditions of this consent shall be made available upon reasonable request by an enforcement officer during working hours and shall be kept for a minimum period of two years from the date of each entry.

## **8. Contaminated Land**

**(applies to consents R/LUC/2012/2846/1, PRC40963 and 40843 only)**

### **Expiry Date**

- 8.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

### **Pre-works Requirements**

- 8.2 Any amendments to the documents listed in General Condition 1.1 shall be submitted to the Manager prior to implementation, for approval that it complies with the Ministry for the Environment Contaminated Land Management Guideline No. 1 and the conditions of this consent:

- (a) changes to the documents shall not be implemented until confirmation has been received;
- (b) notwithstanding (a), changes may be implemented if 10 working days have passed since the documents were submitted and no correspondence has been received from the Council regarding the changes or immediately in the case of an emergency; and
- (c) all confirmed changes shall be incorporated into respective replacement documents.

- 8.3 The Consent Holder shall review The Central Interceptor Project Contaminated Land Site Management Plan (Rev 1) dated December 2012 (“**the CLSMP**”), prepared by Tonkin & Taylor, and submit a revised or final CLSMP prior to commencement of any Project stage. The CLSMP shall include mitigation measures to ensure that discharges from the sites to land or water are minimised, and to ensure that the risks to the health of workers on the site and nearby sites is less than minor. Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CLSMP may be prepared, commensurate with the scale and effects of the proposed works. The CLSMP or plans shall be submitted to the Manager for approval.

The CLSMP shall include, but not be limited to:

- (a) measures to be undertaken in the handling, storage and disposal of contaminated surficial soils excavated during the construction works;
- (b) soil validation testing and groundwater testing;
- (c) a process for confirming potential for contamination and soil testing at the identified potentially contaminated sites to determine the nature of the excavated soil and potential reuse or disposal options;

- (d) measures to be undertaken in the event of unexpected contamination being identified during construction activities; and
- (e) measures to be undertaken for the handling of asbestos containing material.

8.4 The Consent Holder shall engage a suitably qualified and experienced practitioner (SQEP) as defined in the User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (April, 2012). In accordance with the User's Guide, the SQEP shall be a person with a tertiary degree in environmental science or engineering or a related field and at least five years experience in environmental investigations. The SQEP shall carry out any soil and groundwater sampling work and observe construction site earthworks in areas identified in the CLSMP, including the excavation and removal of contaminated surficial soils from the site. The SQEP shall be available during the excavation works and be in regular contact with the Watercare Project Manager and/or contractor over the course of the project to ensure that the procedures set out in the CLSMP are being followed.

8.5 Confirmatory soil sampling and testing shall be undertaken at the following construction sites prior to works commencing at these sites, or as described in the CLSMP:

- Rawalpindi Reserve;
- Mt Albert War Memorial Reserve;
- Lyon Avenue;
- Haverstock Road;
- Walmsley Park;
- PS25 (Miranda Reserve);
- Keith Hay Park;
- PS23 (Frederick Street);
- Western Springs Depot; and
- Miranda Reserve.

The sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road, shall be investigated prior to any construction activities, rather than during construction. Where sampling is undertaken during construction, the excavated soil shall be treated as potentially contaminated while awaiting laboratory results and relevant procedures set out in the CLSMP shall be followed.

Sampling and testing shall be undertaken as outlined in the CLSMP. The results of these investigations shall determine appropriate handling and surplus soil disposal locations as well as appropriate health and safety requirements at these sites. For the sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road the findings of the investigations and any site-specific requirements shall be provided to the Construction Manager prior to the commencement of excavation works.

8.6 The Consent Holder shall ensure that excavation workers (which excludes workers associated with excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) are appropriately informed and trained regarding potential health and safety risks and corresponding mitigation measures associated with contamination, in accordance with the CLSMP.

### Specific Conditions During Works

- 8.7 The Consent Holder shall ensure that the public is excluded from the work area.
- 8.8 When excavating actual or potentially contaminated soil (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works), the contractor shall maintain weekly records of the excavation areas, the type and volume of soil removed to landfill, and the location of the landfill. The records shall be retained and provided to the Auckland Council on request.
- 8.9 During the works, regular inspections of the excavation of actual or potentially contaminated areas (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) shall be carried out to ensure that the site management procedures are implemented in accordance with the CLSMP.
- 8.10 For sites where asbestos has previously been identified, or could potentially be present, or is discovered during the works, all excavation work shall be observed by a person certified under the Asbestos Regulations (Health and Safety in Employment Act (Asbestos) Regulations 1998, and Department of Labour Guidelines for the Management and Removal of Asbestos 1999).
- 8.11 All excavation works shall be carried out in a manner that will minimise the potential for mixing contaminated soils with uncontaminated soils.
- 8.12 Where possible, contaminated soils identified for off-site disposal shall be loaded directly onto trucks. Any contaminated soil removed from the site shall be covered during transportation.
- 8.13 Stockpiling of contaminated soil shall be avoided so far as practicable. If required, the stockpiles shall follow the procedures set out in the SLSMP.
- 8.14 Any contaminated material removed from the site shall be disposed of in accordance with the CLSMP, at a facility which holds a consent to accept the relevant level of contamination, unless it has been appropriately demonstrated that the materials removed from the site meet the definition of 'cleanfill', as described in 'A Guide to the Management of Cleanfills', Ministry for the Environment (2002).
- 8.15 Any excavated material re-used on site shall have soil concentrations that are the lower of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health for the site final land use or the Auckland Council Regional Plan: Air, Land and Water Schedule 10 permitted activity criteria.
- 8.16 All imported fill shall:
- (a) comply with the definition of 'cleanfill' as per 'A Guide to the Management of Cleanfills', Ministry for the Environment (2002);
  - (b) be solid material of an inert nature; and
  - (c) not contain hazardous substances or contaminants above natural background levels of the receiving site.
- 8.17 The Consent Holder shall ensure that any groundwater, perched groundwater or stormwater which may become contaminated through contact with contaminated soil or some other means shall be isolated while work is in progress. The water shall be tested prior to discharge to the stormwater system. In accordance with the CLSMP, if contaminant concentrations meet the 80% trigger level for protection of freshwater species in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality ("ANZECC") (2000), the water shall be allowed to be discharged to the

stormwater system. In the absence of confirmatory testing, or if levels exceed the ANZECC criteria, the water shall be disposed to trade waste/sewer.

- 8.18 Should any unexpected contamination be found during the works, the appointed SQEP is to be consulted and is to advise on the best option for managing the affected material (including sampling and testing, if required), in accordance with the CLSMP.
- 8.19 All sampling, testing and analysis carried out in accordance with this consent shall be:
- (a) undertaken or supervised by the SQEP; and
  - (b) in accordance with Contaminated Land Management Guidelines No.5, Ministry for the Environment, revised 2011.
- 8.20 The Consent Holder shall notify the Manager within 10 working days of identification of any contamination which was not identified in the reports submitted with the application, or subsequent investigations, including contaminated soil, surface water or groundwater. If the contamination is considered by the SQEP to pose significant environmental and/or health and safety issues, the Manager shall be notified immediately.
- 8.21 In the event that unexpected contaminated material is encountered, a further review of site procedures is to take place to ascertain if additional measures are required, and the SMP updated accordingly.

### **Post Works**

- 8.22 With the exception of soils excavated as part of the underground tunnelling works, the Consent Holder shall submit to the Manager separate Excavation Summary Reports for each construction site identified as contaminated no later than three months after the completion of the earthworks at each site. The Reports shall be prepared in accordance with the Ministry for the Environment *Guidelines for Reporting on Contaminated Sites in New Zealand* (Revised 2011) and include:
- (a) results of any soil and groundwater testing and imported material testing carried out to ensure compliance with the CLSMP;
  - (b) volumes of soil removed from the site and confirmed disposal location as well as disposal receipts; and
  - (c) reports of any non-compliance with the CLSMP procedures or complaints received while undertaking the works.
- 8.23 On completion of the excavation works in sites of identified contamination, the Consent Holder shall ensure that plant and equipment is cleaned and decontaminated in a controlled area of the site and that any residues are collected and properly disposed of.

## **9. Coastal (Works)**

**(applies to consents 40844, 40845, 40846 and 40849 only)**

### **Duration**

- 9.1 This permit shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

### **Pre-construction**

- 9.2 Permanent structures in the CMA shall be designed as far as practicable to integrate with the immediately surrounding coastal environment.
- 9.3 The Consent Holder shall provide a minimum horizontal separation distance of 10 metres between the outside edge of the Central Interceptor tunnel and the nearest

foundation of Tower 36 of the Henderson to Otahuhu A (HEN-OTA A) 220 kV transmission line.

- 9.4 At least 20 working days prior to commencement of any Project Stage involving works in the CMA, the Consent Holder shall submit detailed engineering designs and drawings of all related structures and specifications for the works approved by this consent to the Manager for approval. The scope of that approval process is to confirm that the works are generally in accordance with the information included in support of the application, in particular, the potential effects of the works.
- 9.5 In addition to details required under general Condition 1.8, the CMP for works in the CMA shall include confirmation of the following:
- (a) details of all temporary structures in the CMA and their associated construction methodology including their expected duration of occupation;
  - (b) identification of all access points to the CMA and along the foreshore; and
  - (c) details of all practicable steps to be taken to minimise disturbance of the seabed during the construction activities.
- 9.6 A Site Restoration and Landscape Plan shall be prepared in consultation with the relevant Local Board and tangata whenua (as listed in the report referenced in Condition 1.1(a)), and submitted for the approval of the Manager, prior to commencement of works in the CMA at the PS23 (Frederick Street) site and the Emergency Pressure Relief Structure. Among other things, this plan shall include:
- (a) methods for removal of the temporary construction platform at PS23; and
  - (b) measures, methodology and timetable for reinstating disturbed areas of the CMA and coastal margins.
- 9.7 Work in the CMA shall not commence until the Manager has provided written approval of the plans and details required under Conditions 9.4 – 9.6.

### **Works**

- 9.8 The Consent Holder shall notify the Manager in writing of the proposed date of commencement of works in the CMA, at least 10 working days prior to the proposed start date.
- 9.9 The site shall be maintained in good order for the duration of the work, and all damage and disturbance to the foreshore caused by vehicle traffic, plant and equipment (or otherwise as part of the works) shall be remedied, to the satisfaction of the Manager.
- 9.10 The Consent Holder shall ensure that all reasonable steps are taken to minimise sediment loading and increased turbidity in the CMA due to the construction works. All erosion and sediment control measures used on site shall be in accordance with TP90.
- 9.11 The Manager shall be notified in writing of the expected date of completion of works in the CMA two weeks prior to the expected completion date.

### **Post-construction**

- 9.12 Within one week following completion of the works, all damage and disturbance to the foreshore and seabed shall be remedied, and all equipment, surplus soil and construction materials removed from the CMA, to the satisfaction of the Manager.
- 9.13 A suitably qualified person shall provide confirmation in writing that the permanent works have been constructed in accordance with the detailed engineering designs

and drawings submitted to the Manager under Condition 9.4. The written confirmation shall be submitted to the Manager within one month of the completion of works.

- 9.14 Within six months of the completion of works, a complete set of "as-built" plans shall be supplied to the Manager.
- 9.15 A copy of the "as-built" plans shall also be supplied to the Hydrographic Office (Chief Hydrographer, National Topo/Hydro Authority, Land Information New Zealand, Private Box 5501, Wellington) within six months of the completion of the works authorised by this consent.

### **Extent of Occupation**

- 9.16 The right to occupy part of the CMA shall be limited to the area of the structures identified in the plans included in the application documents listed in General Condition 1.1 and Condition 9.4.
- 9.17 The Consent Holder may restrict public access to, and use of, any structures in the CMA authorised by this consent.
- 9.18 All structures permitted to occupy the CMA by this consent shall be maintained at all times in a good and sound condition.

## **10. Coastal (Emergency Pressure Relief discharge) (applies to consent 40850)**

### **Duration**

- 10.1 This permit shall expire 35 years from the date of commencement unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

### **Management of Operation**

- 10.2 The Consent Holder shall take all steps and necessary contingency measures to manage the operation of the Central Interceptor tunnel and Mangere Pump Station to minimise the frequency and volume of any discharge from the Emergency Pressure Relief Structure to the CMA.
- 10.3 Prior to commissioning the Central Interceptor the consent holder shall provide a dedicated in situ power generation capability at the Mangere pump station sufficient to provide power supply to ensure uninterrupted operation of the pumps in the pump station in the event of loss of external power supply to the pump station, and shall provide to the Council an annual report detailing the results of maintenance and testing required to ensure that the generator is maintained in good working order.
- 10.4 A discharge from the Emergency Pressure Relief Structure shall only occur in the event of a failure of the Mangere pump station's ability to pump flows to the Mangere WWTP as a result of an extended period of loss of power supply to the pump station and exhaustion of all contingency measures.
- 10.5 As part of detailed design and prior to commissioning of the Central Interceptor, the Consent Holder shall prepare an Emergency Pressure Relief ("**EPR**") Discharge Management Plan, which shall be in accordance with the Wastewater Overflow Regional Response Manual (May 2013) and any updates to this manual and the conditions of this consent, and should include:
- (a) a summary of the key reasonable operational and contingency procedures the Consent Holder should follow to minimise the potential need for an EPR discharge, including a description of the operation of gates controlling tributary flows to the main tunnel and how they will be operated to limit inflows when the tunnel becomes full, including manual operation in the event of power supply or mechanical failure;

- (b) a description of the how ongoing monitoring and recording of sewage/stormwater levels within the wet well of the new Mangere pump station will be carried out to allow recording and review of all discharges through the EPR, including assessment of duration and of discharge flow rates;
- (c) the EPR Discharge Monitoring Plan required under Condition 10.9;
- (d) the procedure for the rapid provision of signage and any other health warnings at potentially affected locations to warn the public of the potential public health risk. This should include at any other coastal foreshore areas that may also be affected by the discharge that may be accessed by the public for water recreation or shellfish collection purposes signage and include warnings in the language of ethnic groups that are known or can be expected to gather shellfish;
- (e) a procedure for determining suitable locations for signage based on an estimate of the extent of marine waters and shellfish that may be affected by the mixing zone plume of the discharge depending on relevant variables that may apply, including relative tidal conditions and the duration and rate of the discharge; and
- (f) provision for the clean-up and recovery of wastewater debris in the event that it is stranded on mudflats or beaches.

Prior to the commissioning of the Central Interceptor the EPR Discharge Management Plan shall be submitted to the Manager for approval and the Consent Holder shall then comply with the approved EPR Discharge Management Plan.

- 10.6 The Consent Holder shall respond to discharge incidents from the Emergency Pressure Relief Structure in accordance with the EPR Discharge Management Plan.
- 10.7 The Consent Holder shall notify the Auckland Council Pollution Control Hotline and the Auckland Regional Public Health Service of a discharge from the EPR structure in accordance with the notification requirements set out in the Wastewater Overflow Regional Response Manual (May 2013). In addition, the Consent Holder shall provide Auckland Council and the Auckland Regional Public Health Service follow-up notification within six hours of a discharge commencing from the EPR structure, and shall include the following information in the follow-up notification:
- (a) the duration and approximate discharge rate/s and approximate discharge volume (if known);
  - (b) an explanation of the cause of the discharge;
  - (c) the response time to attend to and resolve the discharge; and
  - (d) details of remedial actions undertaken.
- 10.8 Within one month of a discharge occurring from the EPR structure, the Consent Holder shall report the incident to the Manager and shall include the following information:
- (a) a copy of the Incident Notification Report required by Condition 10.7;
  - (b) details on the extent of the discharge and an explanation of the cause of the discharge;
  - (c) details of the response measures taken and the time once the matter was fully resolved;
  - (d) monitoring undertaken, monitoring results and a date by which any outstanding monitoring results will be provided;

- (e) details on the signage deployed and when the signage was or is proposed to be removed; and
- (f) details of remedial actions taken and any measures still proposed to avoid, remedy or mitigate adverse effects of this or potential future EPR discharges, with an estimated timeframe for their completion.

10.9 As part of the EPR Discharge Management Plan required under Condition 10.4, the Consent Holder shall prepare an EPR Discharge Monitoring Plan, which shall be in accordance with the conditions of this consent and shall include:

- (a) The receiving environment water quality and shellfish monitoring sites, including representative control sites, and the monitoring procedures to establish background conditions and conditions immediately following the discharge and subsequent further monitoring;
- (b) The collection of shellfish samples in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:
  - (i) Faecal coliforms (unless the shellfish are at a location that may be affected by treated WWTP wastewater quality); and
  - (ii) Other contaminants indicative of risks to public health;
- (c) the collection of samples of marine water in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:
 

(i)	Biochemical oxygen demand (BOD5)	mgO/l
(ii)	Total suspended solids (TSS)	mg/l
(iii)	Total nitrogen (TN)	mgN/l
(iv)	Ammonia nitrogen (NH3)	mgN/l
- (d) the collection of samples of marine sediments in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:
 

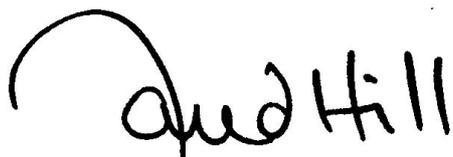
(i)	Copper	mg/kg
(ii)	Lead	mg/kg
(iii)	Zinc	mg/kg
- (e) details on the timing for collecting samples. As a minimum, the-samples shall be collected within 24 hours of the discharge and again approximately 72 hours after the discharge has ceased and shall be in accordance with the EPR Discharge Monitoring Plan. In the event of elevated contaminant levels in shellfish, which exceed levels in the control samples, the shellfish monitoring shall be repeated one month following the discharge.

**Advice Note:** A suitable EPR discharge monitoring programme needs to take into account the particular aspects of the proposed discharge point, the untreated nature of the full wastewater flow and the anticipated relatively large scale but one-off short term nature of the EPR discharge. When developing the details of a receiving environment monitoring programme, the Consent Holder should have regard for the monitoring sites in the established receiving environment WWTP bypass monitoring programme, and in particular those sites deemed potentially affected by the WWTP bypass flows.

- 10.10 The conditions of this consent may be reviewed by the Manager pursuant to Section 128 of the RMA, by the giving of notice pursuant to Section 129 of the RMA, in the year after a discharge event, in order:
- (a) to vary the conditions in light of increased understanding of the pump station discharge system or further information, changed circumstances, or the results of monitoring; or
  - (b) to alter monitoring requirements in light of previous monitoring results and/or changed environmental conditions or circumstances; or
  - (c) to deal with any adverse effect on the environment which may arise from the exercise of the consent and which was not apparent at the time of the granting of the consent; or
  - (d) to require the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment resulting from the discharge; or
  - (e) to deal with any adverse effect on the environment arising or potentially arising from the exercise of this consent, through altering or providing specific performance standards; or
  - (f) to address any matter arising from the post-EPR incident report required by condition 10.8.

### **Advice Notes**

- AN.1 The Consent Holder shall obtain all other necessary consents and permits, including those under the Building Act 2004, and the Historic Places Trust Act 1993. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004. Please note that the approval of this resource consent, including consent conditions specified above, may affect a previously issued building consent for the same project, in which case a new building consent may be required. If not all resource consents have been applied for and the Council has not required these consents be sought as part of the consent applications for this proposal, it remains the responsibility of the Consent Holder to obtain any and all necessary resource consents required under the relevant requirements of the RMA.*
- AN.2 The granting of this resource consent does not in any way allow the applicant to enter and construct drainage within neighbouring properties, without first obtaining the agreement of all owners and occupiers of said land to undertake the proposed works. Any negotiation or agreement is the full responsibility of the applicant, and is a private agreement that does not involve the Council. Should any disputes arise between the private parties, these are civil matters, which can be taken to independent mediation or disputes tribunal for resolution. It is recommended that the private agreement be legally documented to avoid disputes arising.*
- AN.3 Compliance with the consent conditions will be monitored by the Council in accordance with section 35(d) of the RMA. This will typically include site visits to verify compliance (or non compliance) and documentation (site notes and photographs) of the activity established under the Resource Consent. In order to recover actual and reasonable costs, inspections, in excess of those covered by the base fee paid, shall be charged at the relevant hourly rate applicable at the time.*

A handwritten signature in black ink that reads "Andrew Hill". The signature is written in a cursive style with a large, sweeping initial 'A'.

Chair

26 November 2013