Decision on an application to vary conditions of a resource consent under section 127 of the Resource Management Act 1991

Discretionary activity under section 127(3)

Application Numbers:	WAT60334954-A (s127 water permit consent)
Applicant's Name:	Watercare Services Limited
Site Address:	42, 44, 46, and 48 Tawariki Street, Grey Lynn
Legal Description:	Lots 37 to 40 DP 38075
Proposal:	Change conditions 1.1 and 3.12 of approved water permit application WAT60334954

The discretionary activity under s127 of the Resource Management Act 1991 (**RMA**) is for changes to conditions 1.1 and 3.12 of approved water permit application WAT60334954 involving the following amendments (deletions in ~~strikethrough~~ and additions in **bold underlined**):

Plans and Information

1.1 Except as modified by the conditions below and subject to final design, the works shall be undertaken in accordance with the plans and information submitted with the application including:

a) Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Notice of Requirements, Resource Consents Application and Assessment of Environmental Effects" prepared by Jacobs, dated February 2019**, except where varied by the S127 and Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Changes to the Secondary Shaft', prepared by Tonkin & Taylor Limited, Job Number 30552.9090.v1, Version 1, dated 11 November 2022**.

b) Drawings as detailed below:

- 'Land Requirement Plan Tawariki Street Shaft Site', Rev A by Jacobs, undated.
- 'Grey Lynn Tunnel Western Springs to Tawariki Street Plan and Profile Sheet 1', Rev 0, by Watercare, dated 20 Feb 2019
- 'Grey Lynn Tunnel Western Springs to Tawariki Street Plan and Profile Sheet 2', Rev 0, by Watercare, dated 20 Feb 2019.
- 'Grey Lynn Tunnel Western Springs to Tawariki Street Plan and Profile Sheet 1', Rev 0, by Watercare, dated 20 Feb 2019.

- ~~'Grey Lynn Tunnel – Tawariki Street Site Plan, Rev 0, by Boffa Miskell, dated April 2019.~~

- **Tawariki St – Central Interceptor (DSCN) 00 Site General – Redesigned Site Layout – Concept Layout, dated 6 July 2022.**

- 'Grey Lynn Tunnel – Tawariki Street Fence Options, Rev 0, by Boffa Miskell, dated April 2019.

- 'Grey Lynn Tunnel – Tawariki Street Section and Elevation Location Plan, Rev 0, by Boffa Miskell, dated April 2019.

- 'Grey Lynn Tunnel – Tawariki Street Cross Sections, Rev 0, by Boffa Miskell, dated April 2019.

- 'Grey Lynn Tunnel – Tawariki Street Retaining Wall Elevations, Rev 0, by Boffa Miskell, dated April 2019.

- 'Grey Lynn Tunnel – Tawariki Street Panorama View from 39 Tawariki Street – Following Site Reinstatement, Rev 0, by Boffa Miskell, dated April 2019.

c) Technical Reports as detailed below:

- Ecological Assessment, prepared by Bioresearches Group Ltd, dated 18 February 2019.

- Vibration Assessment, prepared by McMillen Jacobs Associates, dated 21 December 2018.

- Groundwater Assessment, prepared by Williamson Water & Land Advisory, dated 19 February 2019.

- Settlement Assessment, prepared by McMillen Jacobs Associates, dated 31 January 2019.

- Air Quality Assessment, prepared by AECOM, undated.

- Contamination Report, prepared by AECOM, dated 21 February 2019

- **Tawariki Shafts Groundwater and Settlement Effects Assessment, prepared by Tonkin & Taylor Limited, Job Number 30552.9090.v1, Version 1, dated 11 November 2022.**

d) Section 92 responses dated 18 April, 24 May 2019, 13 January 2023, 31 August 2023 and 31 October 2023

e) Further information response letter, prepared by Watercare Servies Limited, dated 17 February 2023.

f) Further information response letter, prepared by Watercare Servies Limited, dated 31 August 2023.

g) Further information response email from Shalini Sanjeshni of Watercare Servies Limited, dated 31 October 2023.

Pre-construction Condition Survey

3.12 The Consent Holder shall consult with owners of 160-178 Surrey Crescent, the 490 and 510 Richmond Road and residences at 24, 26 30, 2/20, 32, 34 and 38 Sackville Street and 35, 37, 39, **and** 41 ~~and 42~~ Tawariki Street (refer to Appendix 1, 3 Reference maps), 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; and

f) susceptibility of structure to movement of foundations, including consideration of the local geological conditions;

***Advice note**: 'Commencement of Dewatering' means commencement of bulk excavation and/or commencing taking any groundwater from a shaft or tunnel excavation (after construction of the pile walls (if required) and/or dewatering prior to bulk excavation).*

I have read the application, supporting documents, and the report and recommendations on the application for resource consent. I am satisfied that I have sufficient information to consider the matters required by the RMA and make a decision under delegated authority on the application.

Acting under delegated authority, under sections 104, 104B, 127 and Part 2 of the RMA, the application is **GRANTED.**

Reasons

The reasons for this decision are:

1. The proposal is appropriately considered under s127 of the RMA as the condition changes will not result in a fundamentally different activity or materially different effects.

2. In accordance with an assessment under s104(1)(a) and s127(3) of the RMA, the actual and potential effects will be of an acceptable nature and scale in this environment. This is because any resulting adverse effects with respect to the diversion and dewatering of groundwater will continue to be mitigated through the implementation of appropriate measures to ensure that ground settlement will not exceed previously assessed limits,

with any building and structure damage that may result to be remedied as necessary through compliance with conditions of consent that will remain unchanged. The exception is with respect to the sites at 38 and 40 Tawariki Street where increased levels of ground settlement will result. However, as these sites are now owned by the applicant and will be utilised for purposes associated with the consented works, there is no need to consider any resulting adverse effects upon them. The nature of the application, with all other consented elements remaining unchanged, ensures that no other adverse effects will result, including those in respect of persons that submitted on the original application, terrestrial and freshwater ecosystems, scheduled historic heritage places, and existing water takes.

3. In accordance with an assessment under s104(1)(ab), there are no specific offsetting or environmental compensation measures proposed or agreed to by the applicant to ensure other positive effects on the environment.

4. In accordance with an assessment under s104(1)(b) of the RMA, the proposal will be consistent with the relevant statutory documents. In particular, the proposal is consistent with the relevant provisions of the Auckland Unitary Plan (Operative in Part) as established in Chapter E7 'Taking, Using, Damming and Diversion of Water and Drilling' for the following reasons:

    a. There are no adjacent terrestrial or freshwater ecosystems that will be adversely affected as a result of the proposed groundwater diversion and dewatering modifications, nor will any adverse effects result with respect to scheduled historic heritage places, underlying aquifer resources, or existing water takes.

    b. Other than with respect to 38 and 40 Tawariki Street, where the increased levels of ground settlement that will result can be disregarded as they are now owned by the applicant, the levels of ground settlement that will likely result from the changes to the location of the secondary shaft and the timing of construction activity will align with those originally assessed. To ensure that ground settlement is no greater than that originally modelled, a detailed monitoring and contingency programme is proposed. This will ensure that the risk of damage to buildings and structures as a consequence of the amended works will continue to be minimal, with any damage that may result to be rectified by the consent holder, as required by existing conditions of consent that will remain unchanged.

5. In accordance with an assessment under s104(1)(c) of the RMA, no other matters are relevant.

6. In the context of this discretionary activity application where the objectives and policies in the relevant statutory documents were prepared having regard to Part 2 of the RMA, they capture all relevant planning considerations and contain a coherent set of policies designed to achieve clear environmental outcomes. As they also provide a clear framework for assessing all relevant potential effects, there is no need to go beyond these provisions and look to Part 2 in making this decision as an assessment against Part 2 would not add anything to the evaluative exercise.

7. Overall, the proposal will result in acceptable actual and potential effects and is consistent with the relevant objectives and policies of the Plan and Part 2 of the Act.

Conditions

Under sections 108 and 108AA of the RMA, this variation is subject to the following changes to existing conditions 1.1 and 3.12.

Condition 1.1

Plans and Information

1.1 Except as modified by the conditions below and subject to final design, the works shall be undertaken in accordance with the plans and information submitted with the application including:

a) Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Notice of Requirements, Resource Consents Application and Assessment of Environmental Effects" prepared by Jacobs, dated February 2019, except where varied by the S127 and Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Changes to the Secondary Shaft', prepared by Tonkin & Taylor Limited, Job Number 30552.9090.v1, Version 1, dated 11 November 2022.

b) Drawings as detailed below:

- 'Land Requirement Plan Tawariki Street Shaft Site', Rev A by Jacobs, undated.
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g) Further information response email from Shalini Sanjeshni of Watercare Servies Limited, dated 31 October 2023.

Condition 3.12

Pre-construction Condition Survey

3.12 The Consent Holder shall consult with owners of 160-178 Surrey Crescent, the 490 and 510 Richmond Road and residences at 24, 26 30, 2/20, 32, 34 and 38 Sackville Street and 35, 37, 39, and 41 Tawariki Street (refer to Appendix 1, 3 Reference maps), 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:

g) major features of the buildings and site developments, including location, type, construction, age and existing condition

h) type and capacity of foundations;

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j) existing level of structural distress or damage;

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l) susceptibility of structure to movement of foundations, including consideration of the local geological conditions;

***Advice note**: 'Commencement of Dewatering' means commencement of bulk excavation and/or commencing taking any groundwater from a shaft or tunnel excavation (after construction of the pile walls (if required) and/or dewatering prior to bulk excavation).*

Advice notes

1. *A copy of the consolidated set of conditions of consent as amended is included as attachment 1 to this section 127 decision.*
2. *If you disagree with any of the above conditions, or disagree with the additional charges relating to the processing of the application you have a right of objection pursuant to sections 357 A or 357B of the RMA. Any objection must be made in writing to Council within 15 working days of notification of the decision.*
3. *This consent is to be read in conjunction with originally approved resource consents LUC60334953, WAT60334954, and DIS60338392) and does not negate the consent holder's requirement to continue to comply with the conditions of that original resource consents, subject to the amendments approved above.*
4. *The consent holder is reminded that the decision on this section 127 application does not affect the lapse period for the resource consent.*

Delegated decision maker:

Name: Colin Hopkins
Title: Principal Project Lead
Premium Resource Consents
Signed:

Date: 4 December 2023

Attachment 1: Consolidated conditions of consent as amended.

Under section 108 of the RMA, this consent is subject to the following conditions:

Resource Consent Conditions

1. General conditions applying to all resource consents

Plans and Information

1.1 Except as modified by the conditions below and subject to final design, the works shall be undertaken in accordance with the plans and information submitted with the application including:

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Lapse

1.2 These resource consents shall lapse 10 years after the date on which the last of any appeals on all consents and notices of requirement associated with the Project is withdrawn or determined, or, if no appeals are lodged, the date on which the notices of requirement are included in the AUP 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 continues to be made, and fixes a longer period for the purposes of this subsection.

Monitoring fees

1.3 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 these consents. Such charges are to cover the cost of inspecting the site, carrying our tests, reviewing conditions, updating files,

etc. all being work to ensure compliance with the resource consents and are to be paid within one (1) month of date of invoice.

2. Specific conditions: Land use consent - LUC60334953

Dust Management

2.1 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.

2.2 All processes on site shall be operated in accordance with the CMP as required by the designation associated with this consent.

2.3 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 (2016).

Earthworks and stability

2.4 All earthworks shall be managed to avoid where possible and 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 Team Leader Compliance Monitoring Central.

2.5 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 Council for certification. The ESCP(s) shall be in accordance with GD05 and any amendments to that document. If no certification has been received within 20 working days, the ESCP is deemed to be certified.

2.6 Erosion and sediment control measures shall be carried out in accordance with the certified ESCP(s) required by this consent for the duration of the works.

2.7 Any subsequent amendments to the certified ESCP(s) and / or methodology must be certified by the Team Leader Compliance Monitoring Central in writing prior to any such amendment being implemented.

2.8 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 provided to the Team Leader Compliance Monitoring Central.

2.9 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 and the ESCP(s). 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 Team Leader Compliance Monitoring Central for certification in accordance with Condition 2.5.

2.10 All perimeter controls shall be operational before earthworks begin.

2.11 All cleanwater runoff from stabilised surfaces including catchment areas above the site shall be diverted away from earthwork areas via a stabilised system, so as to prevent surface erosion.

2.12 All sediment laden runoff shall be treated on site by sediment control measures, as described in the consent application or modified under Condition 2.5 and 2.7. These measures are to be constructed or installed in accordance with ESCP, be operational before commencement of works and be maintained to perform at full operational capacity until the site has been adequately secured against erosion.

2.13 Sediment control measures shall be inspected on a weekly basis by the Consent Holder and after a significant storm event to ensure effective operation. Any defects shall be immediately remedied by the Consent Holder.

2.14 The site shall be stabilised in accordance with the ESCP in a progressive manner as earthworks are completed across various areas of the site.

2.15 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 outside the project footprint 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.

2.16 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 Team Leader Compliance Monitoring Central.

2.17 All earthworks shall be managed to ensure that they do not lead to any uncontrolled instability or collapse affecting either the site or adversely affecting any neighbouring properties. In the event that such collapse or instability does occur, it shall immediately be rectified.

2.18 The Consent Holder shall engage an independent suitably qualified and experienced engineer to design temporary works and supervise all excavations (especially close to boundaries and existing structures), retaining and foundation construction. The supervising engineer's contact details shall be provided in writing to the Team Leader Compliance Monitoring Central at least two weeks prior to earthworks commencing on site. This timeframe may be waived in the event of emergency works due to the failed condition of any retaining structures.

2.19 A suitably qualified and experienced engineer excavation and retaining work-method statement shall be provided to the Team Leader Compliance Monitoring Central in writing prior to earthworks commencing on site for certification. The work method statement shall include excavation time frames, temporary propping/weatherproofing

and/or sequencing of boundary works.

Noise and Vibration from tunnelling works

2.20 Ground-borne noise arising from construction work activities involving tunnelling works must comply as far as practicable with an internal noise level of 35 dB LAeq(15min) in bedrooms and sleeping spaces between 10pm to 7am. Any complaint received about ground-borne noise must be assessed by the Consent Holder and a noise level of 35 dB LAeq shall be used for assessment purposes.

2.21 In the event that noise assessment shows the 35 dB LAeq(15min) level being infringed, the Consent Holder shall submit a report to the Team Leader Compliance Monitoring Central that an adequate assessment has been completed, all practicable mitigation measures have been implemented, and effects assessed by a suitably qualified and experienced acoustic specialist.

2.22 Vibration levels arising from tunnelling activity shall not exceed the limits set out in German Industrial Standard DIN 4150-3 (1999) Structural Vibration – Part 3 Effects of Vibration on Structures when measured in accordance with that Standard on any structure not on the same site.

Advice Note: *Where appropriate, noise levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Measurement of environmental sound and shall be assessed in accordance with NZS 6802:2008 Acoustics – Environmental noise.*

3. Specific conditions: Groundwater permit conditions – WAT60334954-A

General Groundwater Conditions

3.1 This consent shall expire 35 years from the granting of the consent (or in October 2054) unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

3.2 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 damage to buildings, structures and services (including road infrastructure assets such as footpaths, kerbs, catch-pits, pavements and street furniture), unless otherwise agreed in writing with the asset owner.

3.3 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.

3.4 The Consent Holder shall, at least 10 working days prior to the Commencement of Dewatering, advise the Team Leader Compliance Monitoring Central, in writing, of the date of the proposed commencement of this work.

3.5 The Consent Holder shall, at least 10 working days following Completion of Dewatering, advise the Team Leader Compliance Monitoring Central, in writing, of the date of completion.

3.6 Under section 128 of the RMA the conditions of this consent may be reviewed by the Manager Resource Consents at the Consent Holder's cost:

3.7 Within six months after Completion of Dewatering and subsequently at intervals of not less than five years thereafter in order:

a) To deal with any adverse effects on the environment which may arise or potentially arise from the exercise of this consent and which it is appropriate to deal with at a later stage

b) To vary the monitoring and reporting requirements, and performance standards, in order to take account of information, including the results of previous monitoring and changed environmental knowledge on:

- ground conditions
- aquifer parameters
- groundwater levels; and
- ground surface movement

Monitoring and Contingency Plan

3.8 The Consent Holder shall, before Commencement of Dewatering, 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;

b) details of the groundwater monitoring programme;

c) details of the ground surface settlement and building movement;

d) a location plan of monitoring marks and the location of existing and proposed groundwater monitoring bores;

e) details of the shaft retaining wall monitoring programme;

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) if updated under f), Alert and Alarm Levels, shall be provided in the format shown in Schedule A of condition 3.11;

h) details on the procedures for notification of the Team Leader Compliance Monitoring Central in the event that Trigger Levels are exceeded;

i) 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;

j) 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

k) 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.

3.9 The Consent Holder shall submit to the Team Leader Compliance Monitoring Central for certification:

a) a draft M&CP including aspects dealing with pre-construction monitoring and locations of monitoring marks, including the pre-construction monitoring required under the conditions of this consent. This shall be provided at least 7 months prior to the Commencement of Dewatering for shaft sinking or tunnelling of any Project stage; and

b) the final M&CP. This shall be provided at least 20 working days prior to Commencement of Dewatering for shaft sinking or tunnelling of any Project stage.

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

3.11 The Consent Holder may amend the M&CP from time to time, as necessary for the Project or any Project stage, subject to certification by the Team Leader Compliance Monitoring Central prior to any such amendment being implemented.

Schedule A: Alarm and Alert Levels			
Movement		**Trigger Thresholds (+/-)**	
		Alarm	**Alert**
a)	Differential vertical settlement between any two Ground Surface Deformation Stations (the **Differential Ground Surface Settlement Alarm or Alert Level**)	1:1000	1:1500
b)	Total vertical settlement from the pre-excavation baseline level at any Ground Surface Deformation Station (the **Total Ground Surface Settlement Alarm or Alert Level**):	50mm	30mm
c)	Differential vertical settlement between any two adjacent Building Deformation Stations (the **Differential Building Settlement Alarm or Alert Level**)	1:1000	1:1500
d)	Total vertical settlement from the pre-excavation baseline level at any Building Deformation Station (the **Total Building Settlement Alarm or Alert Level**)	50mm	30mm
e)	Total lateral deflection from the pre-excavation baseline level at any retaining wall deflection station (the **Retaining Wall Deflection Alarm or Alert Level**):	TBC	TBC

f)	Total lateral wall deflection from the pre-excavation baseline level and any subsequent reading at any Inclinometer (the **Inclinometer Deformation Alarm or Alert Level**):	TBC	TBC
g)	Distance below the pre-dewatering Seasonal Low Groundwater Level and any subsequent groundwater reading at any groundwater monitoring bore (the **Groundwater Alert Levels 1 & 2**):	N/A	(1) TBC (2) TBC

Pre-construction Condition Survey

3.12 The Consent Holder shall consult with owners of 160-178 Surrey Crescent, the 490 and 510 Richmond Road and residences at 24, 26 30, 2/20, 32, 34 and 38 Sackville Street and 35, 37, 39, and 41 Tawariki Street (refer to Appendix 1, 3 Reference maps), 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; and

f) susceptibility of structure to movement of foundations, including consideration of the local geological conditions;

***Advice note**: 'Commencement of Dewatering' means commencement of bulk excavation and/or commencing taking any groundwater from a shaft or tunnel excavation (after construction of the pile walls (if required) and/or dewatering prior to bulk excavation).*

3.13 Where neighbouring building/property owners indicate, to the satisfaction of the Team Leader Compliance Monitoring Central 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 engage a Chartered Professional Engineer to undertake a full engineering assessment to determine what, if any, additional avoidance, design, remedial or monitoring works are

required in this vicinity. The Team Leader Compliance Monitoring Central may require an independent review of that assessment by a Chartered Professional Engineer.

3.14 The building condition surveys required by the conditions of this consent shall be undertaken by an independent and suitably qualified person. When requested in writing by the Team Leader Compliance Monitoring Central, the Consent Holder provide the contact details and qualifications of this person within five workings days.

Post-construction Condition Surveys

3.15 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 postconstruction survey of buildings identified in Condition 3.12 and 3.13. 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 Team Leader Compliance Monitoring Central to waive this condition. If any building damage is identified following completion of the pre-construction survey, the survey shall determine the likely cause of damage.

Advice 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, in accordance with the design.*

3.16 The Consent Holder shall, at the direction of the Team Leader Compliance Monitoring Central, and subject to the owner's approval on terms acceptable to the Consent Holder, undertake an additional survey on any existing building or structure surveyed in accordance with Condition 3.12 and 3.13, 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.

3.17 The Consent Holder shall ensure that a copy of the pre, post-construction and any additional building survey reports are provided to the respective property owner(s) and the Team Leader Compliance Monitoring Central (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

3.18 If the exercise of this consent causes any unforeseen damage to buildings, structures or services not assessed under Conditions 3.12 and 3.13, the Consent Holder shall notify the Team Leader Compliance Monitoring Central as soon as practicable, and provide in writing to the Team Leader Compliance Monitoring Central a methodology for repair of the damage caused that has been certified by a Chartered Professional Engineer, and shall urgently undertake such repairs in accordance with the certified methodology, at its cost, unless written approval for this damage is provided from the owners.

Groundwater Monitoring

3.19 The Consent Holder shall install and maintain groundwater monitoring boreholes at the locations described in the M&CP for the period required by Conditions 3.21, 3.23 and 3.25. Should any of the monitoring bores be damaged and become in-operable or unsuitable for monitoring, then the Consent Holder shall contact the Team Leader Compliance Monitoring Central within three working days and a new monitoring bore shall be installed at a nearby location in consultation with, and to the satisfaction of, the Team Leader Compliance Monitoring Central.

3.20 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 ± 5mm. These records shall be compiled and submitted to the Team Leader Compliance Monitoring Central at six monthly intervals.

3.21 The Consent Holder shall monitor groundwater levels monthly in boreholes identified in the M&CP and keep records for a period of at least six (6) 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 at regular intervals in all proposed monitoring boreholes during the monitored period (three readings indicating steady state) before the Commencement of Dewatering of any Project stage involving shaft sinking or dewatering.

3.22 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 3.21.

3.23 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, thecorresponding water level in each borehole and the corresponding depth of all excavations. In addition to the above, all boreholes located within 100 metres of the shaft construction site or within 100 metres of the tunnel excavation face shall be monitored for groundwater level at least once in any period of seven consecutive days. These records shall be compiled and submitted to the Team Leader Compliance Monitoring Central at six (6) monthly intervals.

3.24 All monitoring data obtained pursuant to Condition 3.23 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 Team Leader Compliance

Monitoring Central 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.

3.25 The Consent Holder shall continue to monitor groundwater levels in each borehole at monthly intervals for a period of twelve (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 showeither:

a) recovery of the groundwater level to within two (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 Team Leader Compliance Monitoring Central if groundwater levels are not recovering from construction effects and there is a risk of adverse effects on neighbouring buildings or properties.

Settlement and Deflection Monitoring

3.26 The Consent Holder shall establish and maintain a Settlement Monitoring Network of ground settlement monitoring marks and inclinometers 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.

a) The locations of the monitoring marks shall be identified on a plan within the draft M&CP, as required under Condition 3.9;

b) The monitoring marks shall be located at least one mark within five (5) metres of each of the groundwater monitoring boreholes described in Condition 3.19;

c) The locations and number of monitoring marks shall be sufficient to provide a reliable basis for assessing, monitoring and responding to settlement risk during shaft and tunnel construction work, and for confirming compliance with the limits set out in Condition 3.33.

3.27 In the event of any of the monitoring marks required under Condition 3.26 being destroyed or becoming inoperable, the Consent Holder shall, unless otherwise agreed in writing by the Team Leader Compliance Monitoring Central, replace the monitoring marks with new monitoring marks.

3.28 The Consent Holder shall survey and record the elevation of each monitoring mark and record the corresponding date. 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 ± 2mm for level and ± 5mm for plan position, or as otherwise achieved by best practice precise levelling.

3.29 The Consent Holder shall survey and record the readings of each inclinometer as required in Condition 3.26 at an average of each two (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 Excavation, then monthly until the Completion of Dewatering for any Project stage involving shaft sinking. At least two baseline surveys shall be completed by the Consent Holder before Commencement of Dewatering.

3.30 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 3.28.

***Advice 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 3.33, 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 Team Leader Compliance Monitoring Central.

3.31 During construction in any Project stage involving shaft sinking or tunnelling, the Consent Holder shall survey the settlement monitoring network described in Condition 3.26 at maximum six monthly intervals and keep records of each date and the corresponding ground surface and building level. In addition to the above, all monitoring marks located within 50 metres of the excavated tunnel and within 100 metres of the tunnel excavation face shall be monitored at least once every month, monitoring marks located within 100 metres of an excavated shaft shall be monitored at least once every week. These records shall be compiled and submitted to the Team Leader Compliance Monitoring Central at six monthly intervals.

3.32 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 Team Leader Compliance Monitoring Central 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.

3.33 The Consent Holder shall ensure that the exercise of this consent does not cause

building or ground settlement greater than the Alarm Level thresholds specified below.

a) greater (i.e. steeper) than 1:1,000 differential settlement (the Differential Settlement Alarm Level) between any two adjacent settlement monitoring marks required under this consent; or

b) greater than 50mm total settlement (the Total Settlement Alarm Level) at any settlement monitoring mark required under this consent.

3.34 The Consent Holder shall continue to monitor the Monitoring Stations at monthly intervals for a total period of 12 months after Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, or for a shorter period if certified by the Team Leader Compliance Monitoring Central. 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 Team Leader Compliance Monitoring Central if monitoring marks have breached trigger levels and there is risk of adverse effects.

3.35 The Team Leader Compliance Monitoring Central shall be advised in writing within 10 working days of when excavation and dewatering has been completed.

Advice Note: *The Consent Holder is advised that the discharge of pumped groundwater to a stormwater system or waterbody will need to comply with any other regulations, bylaws or discharge rules that may apply.*

4. Specific conditions: Air quality discharge consent - DIS60338392

General Air quality conditions

4.1 This consent shall expire 35 years (or in October 2054) from the date of granting of the consent unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

4.2 Under section 128 of the RMA, the conditions of this consent may be reviewed by the Manager Resource Consents at the Consent Holder's cost in May 2021 and annually thereafter in order to:

a) Deal with any significant adverse effects on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which is appropriate to deal with at the time of the review.

b) Consider the adequacy of conditions which prevent nuisance and adverse effects beyond the boundary of the Site, particularly if regular or frequent complaints have been received and validated by an enforcement officer.

c) Consider developments in control technology and management practices that would enable practical reductions in the discharge of contaminants to air.

d) Alter the monitoring requirements, including requiring further monitoring, or increasing or reducing the frequency of monitoring.

e) Take into account any Act of Parliament, regulation, national policy statement, regional policy statement or relevant regional plan at the time of consent approval that relates to limiting, recording or mitigating emissions by this consent.

Or, the consent may be reviewed by the Team Leader, Central Compliance Monitoring at any time, if it is found that the information made available to the council in the application contained inaccuracies which materially influenced the decision and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.

Operational Air Quality

4.3 The Consent Holder shall, at all times operate, monitor and maintain the Grey Lynn Tunnel so that odour discharges authorised by this consent are maintained at the minimum practicable level.

4.4 Access to the relevant parts of the property shall be maintained and be available at all reasonable times to enable the servants or agents of Auckland Council to carry out inspections, surveys, investigations, tests, measurements or take samples whilst adhering to the Consent Holder's health and safety policy.

4.5 Beyond the boundary of the site there shall be no effect caused by discharges from the normal operation of the Grey Lynn Tunnel which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.

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

4.6 Air ventilated from the tunnel shall be discharged via a stack no lower than 5 metres above ground level. In the event that odour discharges are found to result in noxious, dangerous, offensive or objectionable, the Team Leader, Central Compliance Monitoring, may require the Consent Holder increase the vertical stack height by up to further 3 metres to enable greater dispersion.

4.7 Except as authorised by this consent, beyond the boundary of the site, there shall be no hazardous air pollutant, caused by discharges from the site, which is present at a concentration that causes, or is likely to cause adverse effects to human health, the environment or property.

4.8 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.

4.9 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.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.

4.10 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.

4.11 A record of the timing and nature of any maintenance activities undertaken to wastewater infrastructure at the Site that has the potential to discharge odour or dust

shall be kept. Details of all inspections and monitoring records relating to the operation and maintenance of the Site shall be kept for a minimum of two years from the date of each entry and shall be provided to the council on request.

4.12 The council shall be notified as soon as practicable in the event of any significant discharge to air, which results or has the potential to result in a breach of air quality conditions or adverse effects on the environment. The following information shall be supplied:

a) Details of the nature of the discharge;

b) An explanation of the cause of the incident; and

c) Details of remediation action taken.

4.13 All air quality complaints that are received shall be recorded. The complaint details shall include:

a) The date, time, location and nature of the complaint;

b) The name, phone 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;

d) Any remedial actions undertaken.

Details of any complaints received shall be provided to the council within one working day of the complaint being received.