

Joint application for Notice of Requirement and Resource consents under the Resource Management Act 1991 – Recommendation on a Notice of Requirement and Decision on Resource Consents



Notice of Requirement under s168

Resource Consents under s9(3), s14 and s15

Application numbers:

Resource Consents:

BUN60334952 (reference)

LUC60334953

WAT60334954

DIS60338392

Notices of Requirement (NoR):

Proposed Designation: 9571

Applicant/Requiring Authority:

Watercare Services Limited (WSL)

Site address:

Shaft site at 44-48 Tawariki Street, Ponsonby Auckland. 1.6km underground tunnel.

Legal description:

Tunnel

Various (refer to Attachment C from application material)

Tawariki Street Shaft Site

Lot 38 DP 38075 CT: NA44C/1089

Lot 39 DP 38075 CT: NA44C/1090

Lot 40 DP 38075 CT: NA44C/1091

Proposal:

Construct and maintain a wastewater tunnel and associated infrastructure known as the 'Grey Lynn Tunnel' or interchangeably as the 'Grey Lynn Interceptor'. Designation of land at 44-48 Tawariki Street and immediate surrounds for construction, operation and maintenance of wastewater infrastructure.

Notice of Requirement

WSL, as a requiring authority, has served a notice of requirement on Auckland Council pursuant to section 168(1) and (2) of the RMA. WSL proposes to designate the shaft site at Tawariki Street, Grey Lynn. The purpose of the designation is for “the construction, operation, and maintenance of wastewater infrastructure”.

The designation as proposed applies to 44 – 48 Tawariki Street, Grey Lynn, the Tawariki Street road reserve and the St Paul’s College site at 183 Richmond Road:

Address	Legal Description	Land Area
44 Tawariki Street	Lot 38 DP 38075	561m ²
46 Tawariki Street	Lot 39 DP 38075	561m ²
48 Tawariki Street	Lot 40 DP 38075	470m ²
183 Richmond Road (St Paul’s College)	Lot 3 DP 17191	Approx. 150m ² of 5.66ha
Tawariki Street	Road reserve	Approx. 250m ²
Total area		2,208m²

The physical extent of the proposed designation is shown in Figure 3 below.



Figure 3: Map showing land requirement as part of Notice of Requirement

Resource Consents

Resource consent is needed for the following reasons:

Water permits (s14) – WAT60334954

Resource Consents: BUN60334952, LUC60334953, WAT60334954, DIS60338392.
 Notices of Requirement (NoR): Proposed Designation: 9571

Groundwater

Auckland Unitary Plan (Operative in Part)

Chapter E7: Taking, using, damming and diversion of water and drilling

- *Rule E7.4.1(A28)*: Resource consent is required as a **Restricted Discretionary Activity** for the diversion of groundwater caused by any excavation, (including trench) or tunnel that does not meet the permitted activity standards or not otherwise listed. The diversion of groundwater caused by the tunnel and shaft excavation will not meet permitted activity standards E7.6.10 (2) and (5) as the proposed excavation will extend below natural groundwater level and will exceed 6m depth below the natural ground level. The shaft excavation (25m deep) will be within 25m to an existing building on 42 Tawariki Street;
- *Rule E7.4.1(A20)*: Resource consent is required as a **Restricted Discretionary Activity** for dewatering or groundwater level control associated with a groundwater diversion authorised as a restricted discretionary activity under the Unitary Plan, not meeting permitted activity standards or is not otherwise listed. There will be dewatering associated with the diversion of groundwater caused by the tunnel and shaft excavation as stated above and during construction only.

Discharge consents (s15) – DIS60338392

Discharges to Air

Auckland Unitary Plan (Operative in Part)

Chapter E14: Air Quality

- *Rule E14.4.1 (A167)*. Resource consent is required as a **Restricted Discretionary Activity** for a wastewater facility that is for the transfer of raw or partially treated wastewater. The design of the proposed tunnel does not meet permitted standard E14.6.1.24 as the storage volume of the tunnel is approximately 29,000m³, whereas the permitted standard allows up to 10,000m².

Land use consents (s9) – LUC60334953

District land use

Auckland Unitary Plan (Operative in Part)

Chapter E26: Infrastructure

- *Rule E26.6.3.1 (A117)*: Resource consent if required as a **Restricted Discretionary Activity** for earthworks in association with a network utility from 10m² to 2500m² and from 5m³ to 2500m³ within a Special Character Areas overlay. The tunnel excavation will involve earthworks of more than 10m² and 5m³ (but less than 2500m² and 2500m³) and will pass beneath the Special Character Areas – Residential Isthmus A Overlay. This part of the works being outside of the designated area.

Chapter E25: Noise and Vibration

- *Rule E25.4.1 (A167)*. Resource consent is required as a **Restricted Discretionary Activity** as the night-time vibration standards under E25.6.30(1)(b) will be exceeded on parts of the tunnel alignment where the tunnel is less than 20m below ground level. This part of the works being outside of the designated area.

NB: For the avoidance of doubt, district level rule triggers arise because the course of the tunnel is not subject to a designation.

Overall resource consent is required as a **restricted discretionary activity**.

Notice of Requirement

I have carried out a site visit, read the applications, supporting documents, submissions and associated correspondence and the report and recommendations on the notice of requirement. I am satisfied that I have sufficient information to consider the matters required by the Resource Management Act 1991 (RMA) and make a recommendation under delegated authority on the notice of requirement.

Obligation to hold a hearing

Under Section 100 of the Resource Management Act 1991 a hearing is not required in respect of this application because the submitters have confirmed with the Council in writing that they do not wish to be heard, the applicant (Watercare) has advised that they do not wish to be heard and the council officers do not consider that a hearing is necessary.

Recommendation

Acting under delegated authority, under s171 of the RMA, the Auckland Council recommends to Watercare Services Limited that the notice of requirement is **CONFIRMED** subject to conditions.

Resource Consents

I have read the applications, supporting documents, submissions and associated correspondence and the report and recommendations on the applications for resource consents. I am satisfied that I have sufficient information to consider the matters required by the Resource Management Act 1991 (RMA) and make a decision under delegated authority on the consideration of the application.

Obligation to hold a hearing

Under Section 100 of the Resource Management Act 1991 a hearing is not required in respect of this application because the submitters have confirmed with the Council in writing that they do not wish to be heard, the applicant (Watercare) has advised that they do not wish to be heard and the council officers do not consider that a hearing is necessary.

Decision

Acting under delegated authority, under sections 104, 104C, 105, 107 and Part 2 of the RMA, the resource consent applications are **GRANTED**.

Reasons

The reasons for this recommendation (OPW) and decision (resource consents) are:

1. The resource consent applications are for restricted discretionary resource consents, and as such under s104C only those matters over which council has restricted its discretion have been considered. Those matters are:
 - Listed in clause E7.8.1 (1), (4), (6) (a-f)
 - Listed in clause E14.8.1 (1), (12)
 - Listed in clauses E26.5.7.1 (2) and E26.6.7.1 (2)
 - Listed in clause E25.8.1 (1)
2. In accordance with an assessment under ss104(1)(a) and (ab), and 171(1) of the RMA, the actual and potential effects from the proposal will be acceptable as:
 - a. In terms of positive effects, the proposal will the capacity of the wastewater network. This is considered to be an important step to realising the projected residential growth anticipated by the Auckland Plan and AUP, in terms of infill and multi-unit developments within Grey Lynn, Cox's Bay and Ponsonby. Thus, the project enables future development and housing supply for the city.
 - b. The volume and frequency of combined wastewater overflows to the Waitemata Harbour will be reduced by the proposal. This will help remedy existing adverse effects in terms of ecology, water quality and public recreation/enjoyment of the coastal marine area.
 - c. Visual and landscape effects will arise at the shaft site primarily during the construction phase due to the presence of a crane structure, but will be temporary in nature and limited to the immediate visual catchment. Long-term visual effects arising from permanent built elements such as the plant and ventilation building, air vent stack and concrete retaining wall can be mitigated by landscaping and the use of appropriate materials and recessive colours. A condition is recommended as part of the NoR to require these details to be provided at the time an OPW is submitted for the works.
 - d. Some trees and vegetation will be removed from the area of works; however, these trees are not protected under the AUP (OP) and can be removed as of right. Their loss in a visual sense will be mitigated via the implementation of the proposed landscaping across the shaft site. Ecological effects are discussed below.
 - e. Whilst some habitat loss will arise from the works from removal of trees, this will be mitigated through the implementation of mitigation planting. Additionally, the trees proposed to be removed are non-native and serve a lower ecological function compared to native trees/vegetation. There will be a temporary lowering of the base-flow levels of

Cox's Creek due to dewatering. This however will be temporary and is of a very limited scale – consequently this will have negligible effects on terrestrial and aquatic ecology.

- f. Whilst there are no known archaeological sites in the area of works, the applicant has proposed to employ accidental discovery protocol as part of their works methods to ensure that adverse effects do not arise, or are minimised and mitigated, on any previously undiscovered materials/objects. A condition is recommended as part of the NoR.
- g. Given the depth of the tunnel excavations below the ground, adverse effects on special character values and streetscape will be avoided entirely. Additionally, the shaft site is remote from any Special Character Areas and Historic Heritage Places/Items.
- h. The applicant has proposed to manage construction traffic via a Construction Traffic Management Plan (CTMP). This plan will detail specific detail of how traffic will be managed in terms of traffic routes, times, the level of required temporary parking and frequency of delivery of plant, equipment and materials. Appropriate measures are also proposed in terms of managing pedestrians, cyclists, rubbish collection and school drop-off traffic. Whilst there will be disruption from traffic during construction, these effects will be managed and temporary. The loss of 12 on-street parking spaces is acceptable in the context of the wider road network. The operation of the shaft site will entail infrequent use and visits from service vehicles – this being met readily by the existing road network.
- i. To manage noise generated from construction, the applicant has proposed to develop and implement a construction noise and vibration management plan (CNVMP). This plan will have procedures and methods to ensure that the works are carried out in a manner that avoids and mitigates adverse effects as far as is practicable. The parties that are identified to be most impacted by these effects are also proposed by WSL to be engaged during the drafting and implementation of the plan.
- j. Operational noise will occur from the shaft site only and will comply with the night-time noise limits stipulated within the AUP (OP). Conditions have been proffered by WSL in this regard and are imposed on the NoR.
- k. Regarding vibration effects, there will be vibration effects on people at certain points along the tunnel alignment arising from tunnel boring. Whilst this may result in some discomfort and interruption of sleep for the receivers the duration will be temporary and remedied when the tunnel boring machine moves along the alignment. Conditions regarding monitoring of vibration and a complaints/response procedure, as well as a CNVMP have been offered by the applicant in order to mitigate these effects as much as practicable.
- l. With regard to groundwater effects, dewatering/diversion and settlement effects that will arise from the proposal will not be felt or experienced by the public or wider environment given the depth of the works, remoteness from water-systems and construction methodology. While there will be adverse effects felt by surrounding the shaft site and potentially at points along the tunnel alignment that may result in settlement and damage to buildings, these can be mitigated by conditions that have been imposed, which ensure damage to buildings is remedied should this arise, and that a Monitoring and Contingency Plan is prepared to require on-going monitoring during the works.

- m. Adverse effects in terms of air quality are unlikely to be experienced beyond the site due to the operational nature of the facility. There may be rare occasions during construction, operation and during maintenance where extreme conditions in weather may result in adverse odour effects being experienced by people in the immediate area. However, these effects are likely to be of low impact and highly infrequent. To ensure that these adverse effects are avoided as much as possible, the ventilation stack also has the potential to be extended to a height of up to 8m if the need arises. Conditions are imposed in this regard.
- n. In relation to contamination effects, given that the PSI and DSI have demonstrated that there is no evidence of contamination at the site, disturbing the land will not lead to adverse effects on the wider area in this regard.
- o. The applicant has proposed to manage all earthworks/land disturbance via an Erosion and Sediment Control Plan (ESCP). Actual and potential adverse effects that may arise from land disturbance works, such as erosion, siltation of waterways, airborne dust and other nuisances can be suitably avoided, remedied and/or mitigated by the measures proposed in the ESCP.
- p. Regarding public safety and stability of the area, whilst there is a possibility of some of the works posing a risk to public safety for collapse or failure, this potential is of a very low probability due to the extensive traffic, pedestrian management and general safety procedures that will be in place around the site during the works as offered by the applicant. Additionally, engineering supervision of large cuts and excavations is proposed as well as the implementation of best-practice engineering methods used on similar projects in Auckland – namely the CI project.
- q. In terms of water and stormwater effects, the quantity and quality of water will be able to be met by the stormwater network. Contaminants will be removed from water that is extracted from the construction site prior to it being discharged into the receiving environment via the stormwater network to ensure water quality and associated values are maintained.
- r. Mana whenua groups have been consulted by WSL and no groups have expressed concern with the proposal. As mana whenua groups are best placed to comment on how their cultural values may or may not be impacted, the lack of concern or further involvement has been taken to infer that there is no immediate concern with the proposal. Additionally, there are no items, sites or places known to the Council or the applicant within or near to the project area – adverse effects in this regard being avoided. There are no statutory acknowledgement areas located in the project area either. Accidental discovery protocols under E11 and E12 of the AUP are required to be observed during the works which will ensure that if previously unknown items/objects/remains are uncovered that appropriate steps can be taken to remedy potential effects in this regard – noting that the applicant has proposed to comply with these standards and offered them as a condition of the NoR.
- s. With reference to s104(1)(ab) and s171(1B), there are no specific offsetting or environmental compensation measures proposed or agreed to by the applicant to ensure positive effects on the environment and/or within the relevant matters of discretion.

3. In accordance with an assessment under s104(1)(b) and 171(1)(a) of the RMA the proposal is consistent with the relevant statutory documents the NoR and also insofar as they relate to the matters over which discretion is restricted for the resource consents. In particular:

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)

The applicant has undertaken both a PSI and DSI at the shaft site. The PSI concludes that a HAIL activity is unlikely to have been undertaken at or near the shaft site, whilst the DSI finds no evidence of asbestos contamination or any other contaminants in excess of the NESCS requirements at the shaft site. In this case consents are not required, and the NESCS is not relevant to the consideration of this proposal.

New Zealand Coastal Policy Statement (NZCPS)

The proposal is considered to be generally consistent with the direction and thrust of the NZCPS. Specifically, the increased network capacity delivered by the Project is anticipated to reduce combined wastewater overflows (WWOs) and associated contaminants from entering the Waitemata Harbour. Resultant enhancements in water quality align with Policy 21 which seeks to enhance water quality where it has having significant adverse effects on ecosystems, natural habitats or water-based recreational activities. The Project will enable a reduction of WWO's in the Waitemata Harbour catchment which in various locations is identified as being unsafe for swimming and other recreational activities. The Project is also directly relevant to Policy 23, and specifically 23(4)(a) which seeks to avoid where practicable and otherwise remedy cross contamination of sewage and stormwater systems. The proposal is therefore consistent with the NZCPS.

Hauraki Gulf Marine Park Act 2000 (HGMPA)

It is considered that the Project is consistent with the relevant provisions of the HGMPA. Specifically, the increased network capacity delivered by the proposal is anticipated to reduce WWOs and associated contaminants from entering the Waitemata Harbour. This supports Section 7 of the HGMPA in that resultant increase in water quality better enables the use and resources of the Gulf for economic activities and recreation, and better maintains the ecosystems of the Gulf. In terms of Section 8, this provide for the enhancement of life-supporting capacity of the environment of the Hauraki Gulf. The proposal is therefore consistent with the HGMPA.

Auckland Unitary Plan Regional Policy Statements (Chapter B of the AUP(OP)).

The Project is consistent with the relevant provisions of the RPS. Specifically, the Project aligns with Chapter B2 Urban growth and form by providing additional network capacity growth and through appropriate design of the facilities to integrated with the existing urban character. The Project is consistent with B3 Infrastructure, Transport and Energy, given that the Project is a vital infrastructure investment with a functional need to be constructed in the proposed location, will provide for an efficient use of infrastructure, and will avoid significant adverse effects on the environment. The Project is also consistent with B6 Mana Whenua given the reduction in WWOs, adoption of accidental discovery protocols and engagement with mana whenua through the process. The Project also aligns with B7 Natural Resources given the

outcome of reduced WWO, and the measures proposed to mitigate significant air quality effects associated with land disturbance and operation of the facilities.

Auckland Unitary Plan (Operative in Part)

The relevant regional and district plan provisions of the AUP are addressed in Appendix G of the AEE. This assessment is accepted, and therefore it is considered that the proposal is consistent with the regional and district plan components of the AUP.

4. Plan Changes 14 and 16 were publicly notified on 29 November 2018 and the Council's decision were publicly notified on 22 August 2019. The changes seek to improve the consistency of the Auckland Wide and Overlay provisions (PC 14) and to also improve the consistency of provisions for the different zones (PC 16). Both plan changes do not alter the current policy direction of the Auckland Unitary Plan (Operative in Part) as the changes proposed seek to develop the horizontal and vertical alignment of the provisions across the AUP. In accordance with section 86B(1) of the Resource Management Act 1991, all of the proposed plan change rules now have legal effect. With regards to the applicant's proposal, there are no rules that have a legal effect that are relevant to the proposed development or such that requires a weighing exercise to be undertaken.
5. In accordance with s171(1)(b), WSL does not have an interest in the land sufficient for undertaking the work. However, adequate consideration has been given to alternative sites, routes, or methods of undertaking the work, as demonstrated by the analysis contained in Appendix F to WSL's application.
6. In accordance with s171(1)(c), WSL has demonstrated that the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.
7. As a restricted discretionary activity, the other matters that can be considered under s104(1)(c) and 171(1)(d) of the RMA must relate to the matters of discretion restricted under the plan. In this case the following are relevant:

Auckland Plan 2050

The proposal is consistent with 'Direction 1, 2 and 4', 'Focus Area 1', and 'Map 21' of the Auckland Plan 2050. We note that Housing NZ made a submission in support of this application as it would cater for future demand and infrastructure needs as the city intensifies – noting they are a major supplier of housing within Auckland. We agree with the comments within that submission and note that that the improved access to infrastructure that the proposal would be provide would serve the ability for the city to develop and intensify and meet the housing needs of the city. The proposal is consistent with these provisions of the Auckland Plan 2050.

Waitemata Local Board Plan 2017

The proposal is consistent with the direction under Sections 'Waitemata Local Board Area' and 'Outcome 3' of the Waitemata Local Board Plan 2017. Whilst no comment was received from the Waitematā Local Board in relation to this project, it is clear that the Board and the local constituents desire an improvement in local water quality and recognise that future growth in the area will ultimately need to be appropriately serviced by infrastructure. The

project is aimed at providing for the anticipated growth in the local area and is designed to reduce discharges and overflows of wastewater to Cox's Creek and the Waitematā harbour. The proposal is therefore consistent with these provisions of the Waitemata Local Board Plan 2017.

8. In terms of s35 and s36 of the RMA, Council may impose conditions to offset any adverse effects associated with the resource consent. The applicant and the various specialists have proffered/recommended conditions respectively for ongoing monitoring, including the preparation of various and on-going management plans that will be implemented during the works and also post construction. Conditions are recommended for the NoR and imposed on the Resource Consent and are available in Appendix 1. A monitoring fee condition is imposed on the Resource Consent conditions in order to enable Council to carry out its monitoring functions.
9. In terms of s105 of the RMA, the proposal requires consent to discharge contaminants to air under section 15 of the RMA. Under section 105 of the RMA, the council must have regard to additional matters for any application for a discharge permit or a coastal permit that would contravene section 15 or section 15B of the RMA. The proposal is considered to satisfy the matters set out in section 105 because the applicant has considered alternatives and has provided valid reasons for the proposal that is before Council. Additionally, conditions are recommended for the NoR and imposed on the Resource Consent and are available in Appendix 1.
10. In terms of s107 of the RMA, the proposal the proposed air discharges will result in emissions of objectionable odour beyond the site. In the case where such effects are experienced, contingency measures are proposed by way of increasing the height of the ventilation stack at the shaft site. This application does not seek discharges to water and therefore the other adverse effects listed in s107(1)(c-d and f-g) are not considered relevant for assessment. Accordingly, the proposal accords with this section of the RMA.
11. In terms of s124 of the RMA, a duration of 35 years is granted on the air discharge permit (DIS60338392) and the groundwater permit (WAT60334954). This is considered appropriate given the scale of potential effects, the proposed conditions, and given the lifespan of the infrastructure.
12. In terms of s125 and s184 of the RMA, a 10-year lapse date is considered appropriate for both the NoR and respective Resource Consents. This timeframe is considered appropriate timeframe given the scale of the project and the complexities it entails.
13. In terms of s128 of the RMA, review condition has been imposed on the air discharge permit (DIS60338392) and the groundwater permit (WAT60334954). The reasons for this are to enable the review of the conditions if any unforeseen adverse effects become apparent or if best practice requirements change over the duration of the consents.
14. In the context of Part 2 of the RMA and the NoR, the proposal provides for sustainable management as it enables the construction of infrastructure critical to the intensification and growth within Auckland's isthmus whilst reducing wastewater overflows and this improving water quality, and whilst ensuring that adverse effects on the environment will be avoided, remedied and mitigated by the proposed conditions.

In terms of the resource consents, in the context of these restricted discretionary activity applications, where the relevant objectives and policies and matters for discretion 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. They also provide a clear framework for assessing all relevant potential effects and 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.

15. Overall the proposal will result in acceptable effects and will enable infrastructure to accommodate the future growth of the city and help improve water quality in the Waitemata Harbour from reduce wastewater overflows. The proposal also accords with the relevant statutory documents and aligns with the sustainable management purpose of the RMA.

Conditions

Under sections 108, 108AA and 171(2)(c) of the RMA, the recommended conditions for the designation and those imposed on the resource consents are set out in Appendix 1 of this decision.

In terms of the NOR the Council's position on conditions is preferred in respect of the landscape plan certification requirements of Condition 13 for the NOR.

I refer to the s42A report where it is noted that;

We agree that a condition requiring details of landscaping is appropriate, and concur with the majority of wording changes proposed by WSL. However, we do not support the removal of the certification process as proposed by WSL, given that Council certification is commonly used in designations conditions to ensure that the relevant plan or information submitted by a RA adequately addresses the effects sought to be managed within the condition. In our view, the absence of a certification process does not provide Council with the confidence that landscaping details will suitably address the visual and landscape effects of the proposal.

We also consider that it is beneficial to retain the purpose statement within NoR Condition 13.1 to provide additional clarity to WSL and Council at the OPW stage in terms of the key effects that are sought to be addressed by detailed landscape information.

I concur with the Council that certification of the finalised landscape details is an appropriate means of terms of ensuring necessary outcomes fundamental to the proposal being acceptable are achieved. I also concur with the Council experts that stating the purposes of the landscaping is both appropriate and necessary.

Advice notes

1. *Any reference to number of days within this decision refers to working days as defined in s2 of the RMA.*
2. *For the purpose of compliance with the conditions of consent, "the council" refers to the council's monitoring inspector unless otherwise specified. Please contact or monitoring@aucklandcouncil.govt.nz to identify your allocated officer.*

3. *For more information on the resource consent process with Auckland Council see the council's website: www.aucklandcouncil.govt.nz. General information on resource consents, including making an application to vary or cancel consent conditions can be found on the Ministry for the Environment's website: www.mfe.govt.nz.*
4. *If you as the applicant disagree with the additional charges relating to the processing of the application, you have a right of objection pursuant to section 357B of the Resource Management Act 1991. Any objection must be made in writing to the council within 15 working days of your receipt of the council invoice.*
5. *The consent holder is responsible for obtaining all other necessary consents, permits, and licences, including those under the Building Act 2004, and the Heritage New Zealand Pouhere Tāonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), 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.*
6. *The scope of this resource consent is defined by the application made to Auckland Council and all documentation supporting that application*



Barry Kaye

Duty Commissioner

9 October 2019

Appendix 1 – Conditions of NOR and RC

1. Definitions

Alarm Level – Specific levels at which actions are required as described in the relevant conditions.

Alert Level – Specific levels at which actions are required as described in the relevant conditions.

Bulk Excavation – Includes all excavation that affects groundwater excluding minor enabling works and piling less than 1.5m in diameter.

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).

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.

Commencement of Excavation – Means commencement of Bulk Excavation for shafts, trenches and tunnels.

Completion of Excavation – Means the stage when Bulk Excavations has been completed for shafts, trenches and tunnels.

Condition Survey – Means an external visual inspection or a detailed condition survey (as defined in the relevant conditions).

Damage – Includes Aesthetic, Serviceability, Stability, but does not include Negligible Damage. Damage as described in the table 1.

Monitoring Station – Means any monitoring instrument including a ground or building settlement monitoring mark, inclinometer, groundwater monitoring bore, retaining wall deflection station, or other monitoring device required by this consent.

Seasonal Low Groundwater Level – Means the annual lowest groundwater level – which typically occurs in summer.

2. Building Damage Classification reference table

Category of Damage	Normal Degree of Severity	Description of Typical Damage <i>(Building Damage Classification after Burland (1995), and Mair et al (1996))</i>	General Category <i>(after Burland – 1995)</i>
0	Negligible	Hairline cracks.	Aesthetic Damage
1	Very Slight	Fine cracks easily treated during normal redecoration. Perhaps isolated slight fracture in building. Cracks in exterior visible upon close inspection. Typical crack widths up to 1mm.	
2	Slight	Cracks easily filled. Redecoration probably required. Several slight fractures inside building. Exterior cracks visible, some repainting may be required for weather-tightness. Doors and windows may stick slightly. Typically crack widths up to 5mm.	
3	Moderate	Cracks may require cutting out and patching. Recurrent cracks can be masked by suitable linings. Brick pointing and possible replacement of a small amount of exterior brickwork may be required. Doors and windows sticking. Utility services may be interrupted. Weather tightness often impaired. Typical crack widths are 5mm to 15mm or several greater than 3mm.	Serviceability Damage
4	Severe	Extensive repair involving removal and replacement of walls especially over door and windows required. Window and door frames distorted. Floor slopes noticeably. Walls lean or bulge noticeably. Some loss of bearing in beams. Utility services disrupted. Typical crack widths are 15mm to 25mm but also depend on the number of cracks.	
5	Very Severe	Major repair required involving partial or complete reconstruction. Beams lose bearing, walls lean badly and require shoring. Windows broken by distortion. Danger of instability. Typical crack widths are greater than 25mm but depend on the number of cracks.	Stability Damage

Table 1: Building Damage Classification

Note: In the table above the column headed “Description of Typical Damage” applies to masonry buildings only and the column headed “General Category” applies to all buildings.

3. Reference maps for Condition 3.6 of the NOR and 3.12 of the RC

160-178 Surrey Crescent



490 and 510 Richmond Road



Resource Consents: BUN60334952, LUC60334953, WAT60334954, DIS60338392.
Notices of Requirement (NoR): Proposed Designation: 9571

24, 26, 30, 2/20, 32, 34 and 38 Sackville Street



35, 37, 39, 41, 42 Tawariki Street



Resource Consents: BUN60334952, LUC60334953, WAT60334954, DIS60338392.
Notices of Requirement (NoR): Proposed Designation: 9571

Notice of Requirement Conditions

1. General conditions

- 1.1 Except as modified by the conditions below and subject to final design, the works shall be undertaken in accordance with the information provided by the Requiring Authority in the Notice of Requirement dated February 2019, and supporting documents being:
- a) Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Notice of Requirement, Resource Consent Application and Assessment of Environmental Effects" prepared by Jacobs, dated February 2019.
 - 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.
 - '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 Bioresarches Group Ltd, dated 18 February 2019.
 - Archaeological and Historic Heritage Assessment, prepared by Clough & Associates Ltd, dated February 2019.
 - Traffic Impact Assessment, prepared by Commute, dated 21 February 2019.
 - Noise Assessment, prepared by Marshall Day Acoustics, 13 February 2019.
 - Vibration Assessment, prepared by McMillen Jacobs Associates, dated 21 December

2019.

- Settlement Assessment, prepared by McMillen Jacobs Associates, dated 31 January 2018.
- Contamination Report, prepared by AECOM, dated 21 February 2019.
- Visual Impact and Landscape Assessment, prepared by Boffa Miskell Ltd, dated 20 February 2019.
- Arborist Report, prepared by Greenscene NZ, dated 20 February 2019.

d) Section 92 responses dated 18 April and 24 May 2019

1.2 As soon as practicable following completion of commissioning of the Project, the Requiring Authority shall, in consultation with the Council:

- a) review the extent of the area designated for the Project;
- b) identify any areas of designated land that are no longer necessary for the ongoing operation, maintenance, renewal and protection of the Project and associated structures and activities;
- c) identify, in consultation with Auckland Transport any areas of the designation within road reserve that are no longer necessary as the completed infrastructure is otherwise provided for and adequately protected by provisions of the Local Government (Auckland Council) Act 2009 and Utilities Access Act 2010;
- d) give notice to the Council in accordance with Section 182 of the RMA for the removal of those parts of the designation identified in (b) and (c) above, which are not required for the long-term operation and maintenance of the Project; and
- e) provide as-built plans to the Council's Team Leader, Compliance and Monitoring, Resource Consents.

1.3 A liaison person shall be appointed by the Requiring Authority for the duration of the construction phase of the Project to be the main and readily accessible point of contact for persons affected by the designation and construction work. The liaison person's name and contact details shall be advised to affected parties by the Requiring Authority. This person must be reasonably available for on-going consultation on all matters of concern to affected persons arising from the Project. If a liaison person will not be available for any reason, an alternative contact person shall be nominated to ensure that a Project contact person is available by telephone 24 hours per day seven days per week during the construction phase.

1.4 The designation shall lapse on the expiry of a period of 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

designation and is continuing to be made; and fixes a longer period for the purposes of this subsection.

- 1.5 Except as provided for in Condition 1.6 below, the Requiring Authority shall submit an Outline Plan of Works (OPW) for the Project for each of the relevant Project stages in accordance with section 176A of the RMA.
- 1.6 An OPW need not be submitted if the Council has waived the requirement for an OPW in accordance with section 176A(2)(c) of the RMA.
- 1.7 The OPW shall include the following Management Plans, relevant to the stage of works sought for the Project:
 - a) Construction Management Plan (CMP);
 - b) Construction Traffic Management Plan;
 - c) Communications Plan;
 - d) Construction Noise and Vibration Management Plan (CNVMP); and
 - e) Site Reinstatement Plan.
- 1.8 The OPW shall include plans for any proposed new permanent buildings. The design of any buildings shall take into account the following matters:
 - a) The extent to which the buildings are appropriate to their context and minimise potential adverse effects on the amenity of the surroundings (including neighbouring properties);
 - b) The use of building materials which are sufficiently robust and minimise the potential for graffiti and vandalism;
 - c) The extent to which the buildings are visually recessive through use of appropriate colours, textures and modulation.
- 1.9 The OPW shall include plans for any other permanent at grade and above ground structures. Any permanent at grade and above ground structures shall take into account the following matters:
 - a) the location, landscape setting and adjoining land uses;
 - b) the layout, form and detail, and the use of a consistent and appropriate palette of materials, to ensure these elements are visually recessive;
 - c) the configuration of multiple surface elements to minimise their prominence and visual clutter;
 - d) the use of materials which are sufficiently robust and minimise the potential for graffiti and vandalism;
 - e) landscaping to integrate with the Reinstatement Plan required in Condition 12.1; and
 - f) site configuration that maximises the use of Crime Prevention Through Environmental Design (CPTED) principles;
 - g) site access that complies with the vehicle crossing standards of the Auckland Unitary Plan;

and

h) consultation with the owners of 39 and 41 Tawariki Street.

2. Construction Management

- 2.1 The Requiring Authority shall prepare Construction Management Plans (CMP) for each of the relevant Project stages. The purpose of the CMP(s) is to set out the detailed management procedures and construction methods to be undertaken in order to avoid, remedy or mitigate potential adverse effects arising from construction activities and to achieve compliance with the specific conditions of this designation that relate to the matters referred to items (c) to (o) of Condition 2.2 below. The CMP(s) shall be submitted to the Council with the relevant OPW for the stage to which they relate.
- 2.2 The CMP(s) required by Condition 2.1 above shall include specific details relating to the management of all construction activities associated with the relevant Project stage, including:
- a) Details of the site or project manager and the construction liaison person identified in Condition 1.3, including their contact details (phone, postal address, email address);
 - b) An outline construction programme;
 - c) The proposed hours of work, including activities that may occur outside the typical working day hours;
 - 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 removal of soil, debris, demolition and construction materials (if any) from public roads and / or other places adjacent to the work site including removal of any unreasonable levels of dust (as determined by the Council's Team Leader Compliance Monitoring Central) deposited on any adjacent dwellings;
 - 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 providing for the health and safety of the general public and for pedestrian management as required by Condition 6.1;
 - 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 refuelling of plant and equipment;

- l) A Construction Noise and Vibration Management Plan (CNVMP) containing measures to address the management of noise and vibration as identified in Condition 3.1;
- m) Measures for the protection and management of trees as identified in Condition 10.1; and
- n) Measures to address CPTED issues within and around the site; and
- o) In relation to the owners of 39 and 41 Tawariki Street, a parking plan will be developed in consultation with the owners that provides parking for the owners of 39 and 41 Tawariki Street either on the road beside the properties or a reasonable alternative as agreed with the owners prior to the works commencing.

2.3 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. The CMP or any specific component of the CMP shall be updated as necessary and provided to the Council in accordance with Condition 2.1.

3. Construction Noise and Vibration

3.1 A Construction Noise and Vibration Management Plan (CNVMP) either as part of the CMP, or as a standalone plan, shall be prepared by a suitably qualified person, and shall be submitted to and certified by the Council with the OPW to which it relates. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for management of all construction noise and vibration effects and to define the procedures to be followed when full compliance with the construction noise and vibration standards of Conditions 3.2 to 3.9 are not met following adoption of the BPO.

3.2 Construction noise shall be measured and assessed in accordance with NZS6803:1999 Acoustics – Construction Noise, and shall comply with the following noise limits, unless varied in accordance with Condition 3.5:

Time and Day	Noise Limits	
	L _{Aeq} dB	L _{Amax} dB
Monday to Saturday 0730 – 1800	70	85
At All Other Times and Public Holidays	45	75

3.3 Construction works which exceed a level of LAeq 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 LAeq 45dB and can therefore be undertaken outside of these hours in compliance with Condition 8.1.

3.4 Each CNVMP shall, in demonstrating compliance with Condition 3.2, 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 would occur;
- 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 consultation undertaken by the Requiring Authority with affected stakeholders to develop the proposed noise management measures and any feedback received from those stakeholders, along with the noise management measures that will be adopted based on this consultation;
- 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.

- 3.5 Where a CNVMP predicts that noise levels from a particular activity will or will likely exceed the noise limits set out in Condition 3.2, or where noise measurements show that compliance is not being achieved, the Requiring Authority shall prepare and submit for the certification of the Council an Activity Specific Construction Noise Management Plan (ASCNMP). The ASCNMP(s) 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 certification 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 certified by the Council.

In addition to the requirements of Condition 3.4, an ASCNMP must:

- a) describe the activity (including duration), plant and machinery that is expected not to comply with the noise limits in Condition 3.2;
- 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 3.2, including the effect of mitigation specified in 3.5(b);

- 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.
- 3.6 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) subject to agreement with the landowner and occupier, preparation of building condition reports on 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, 41 and 42 Tawariki Street prior to, and after completion of works (refer to Appendix 1, 3 Reference maps);
 - 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) 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), 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;
 - e) the consultation undertaken by the Requiring Authority with affected stakeholders to develop the proposed vibration management measures and any feedback received from those stakeholders, along with the vibration management measures that will be adopted based on this consultation;
 - f) methods for monitoring and reporting on construction vibration; and
 - g) methods for receiving and responding to complaints about construction vibration.
- 3.7 Construction activities shall comply with the Guideline vibration limits set out in DIN 4150-3:1999 unless varied in accordance with Condition 3.8.
- 3.8 The Guideline vibration limits set out in DIN4150 must not be exceeded except where the Requiring Authority can demonstrate to the 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 Requiring Authority has obtained the written agreement of the building owner(s), that a higher limit may be applied.
- 3.9 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 3.1.

4. Operational Noise

- 4.1 The noise arising from any operational activities undertaken on the designated land, shall not exceed the following noise limits when measured at or within the boundary of any site zoned as follows:

Residential	
Time	Noise Limit*
0700-2200 hours	50 dB LAeq
2200-0700 hours	40 dB LAeq 75 dB LAm _{ax}
Special Purpose – School	
Time	Noise Limit
Monday to Saturday 0700-2200 hours	55 dB LAeq
Sunday 0900-1800 hours	
All other times	40 dB LAeq 75 dB LAm _{ax}
Business	
Time	Noise Limit
At all times	60 dB LAeq

*Notes:

(1) These noise limits relate to noise generated by the normal operation of permanent works associated with the Project and do not apply to short term maintenance activities.

(2) Noise levels shall be measured and assessed in accordance with New Zealand Standards NZS6801:2008 Acoustics - Measurement of Environmental Sound and NZS6801:2008 Acoustics - Environmental Noise.

5. Traffic Management

- 5.1 A detailed Construction Traffic Management Plan (CTMP) or plans shall be prepared for the Project or relevant Project stage by a suitably qualified person, in consultation with Auckland Transport and St Pauls College, and submitted as part of the CMP. The purpose of the CTMP is to:

- a) Manage the road transport network for the duration of construction to manage congestion

and minimise delays to road users;

- b) Inform the public about traffic management on the road transport network for the duration of construction;
- c) Protect public safety including the safe passage of pedestrians and cyclists;
- d) Maintain pedestrian access to private property at all times;
- e) Provide vehicle access to private property to the greatest extent possible; and
- f) Manage traffic effects from construction yards on adjacent properties.

5.2 The CTMP(s) shall be submitted to the Council for certification that it achieves the overall purpose of Condition 5.1 and complies with the relevant conditions this designation. No related construction activity shall commence until certification is provided by the Team Leader – Compliance Monitoring Central. If no certification or request for alteration of the CTMP has been received from Council within 20 working days, the CTMP is deemed to be certified. The CTMP(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, and safety, or minimise the impact on traffic capacity during weekdays and weekends;
- b) Measures to ensure that Parawai Crescent is not used by heavy vehicles travelling to or from the site and that all heavy vehicles travelling to the site utilise a left turn only from Richmond Road into Mokau Street.
- c) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses;
- d) Methods to manage the effects of the delivery of construction material, plant and machinery;
- e) Measures to maintain pedestrian access at all times and existing vehicle access to property where practicable, or to provide alternative access arrangements;
- f) 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;
- g) 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;
- h) 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;
- i) 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 for on-street parking;

- j) Means for communicating options to site staff for travel to and from the work site including public transport, walking, cycling and carpooling, for the purpose of minimising demand for on-street parking generated by site staff;
- k) Reconstruction of the residential vehicle crossings to Auckland Transport commercial vehicle crossing standards at 33 and 40 Tawariki Street to provide for heavy vehicle manoeuvring; and.
- l) Methods to ensure public refuse collection can be maintained for all properties.

5.3 The CTMP(s) shall be consistent with the New Zealand Transport Agency Code of Practice for Temporary Traffic Management, which applies at the time of construction.

5.4 Any damage in the road corridor directly caused by heavy vehicles entering or exiting the site shall be repaired as within two weeks or within an alternative timeframe to be agreed with Auckland Transport.

6. Pedestrian Management

6.1 Any temporary accessways shall be designed as far as practicable in accordance with CPTED (Crime Prevention Through Environmental Design) principles and provide appropriate lighting and signage where necessary.

7. Work within Road Reserve

7.1 The Requiring Authority shall not require Auckland Transport or network utility operators with existing infrastructure within the road reserve to seek written consent under Section 176 of the RMA for on-going access, to enable works associated with the routine construction operation, maintenance, upgrade, replacement, urgent repairs and renewal works of existing assets. Furthermore, this exemption to s176 approval does not alleviate the need for Works Over approval from Watercare.

7.2 Works within transport corridors shall be undertaken in accordance with the National Code of Practice for Utility Operators' Access to Transport Corridors (November 2011), or any approved update of that code, unless otherwise agreed between the Requiring Authority and the Corridor Manager.

8. Construction Hours

8.1 Construction hours shall be as follows, except where work is necessary outside the specified days or hours for the purposes specified in Condition 8.2 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 – 7am to 6pm, Monday to Friday, 8am to 6pm Saturday.
- c) Truck movements – 7am to 6pm, Monday to Friday, 8am to 6pm Saturday. Truck movements shall be managed to avoid, as far as practicable, entering and exiting Mokau Street between 8:15am and 9:15am and 2:45pm and 3:45pm Monday to Friday during school term times for St Paul's College. and Marist School Herne Bay.

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

- a) where, due to unforeseen circumstances, it is necessary to complete an activity that has commenced;
- b) where work is specifically required to be planned to be carried out at certain times;
- c) for delivery of large equipment or special deliveries required outside of normal hours due to traffic management requirements;
- d) in cases of emergency
- e) for the securing of the site or the removal of a traffic hazard; and/or
- f) for any other reason specified in the CMP or TMP.

Where any work is undertaken pursuant to paragraphs (a) – (f), the Requiring Authority shall, within five working days of the commencement of such work, provide a report to Team Leader Compliance Monitoring Central detailing how the work was authorised under those paragraphs.

9. Community Information and Liaison

9.1 The Requiring Authority shall prepare a Communications Plan (CP) for the construction phase of the Project or for each Project stage and submit the plan in accordance with Condition 1.7. The CP shall set out:

- a) the method(s) of consultation and liaison with key stakeholders, including the Catholic Diocese of Auckland, and the owners/occupiers of neighbouring properties regarding the likely timing, duration and effects of works;
- b) details of prior consultation or community liaison undertaken with the parties referred to in (a) above, including outlining any measures developed with such persons or groups to manage or to mitigate any adverse effects or inconvenience that may arise;
- c) details of the consultation undertaken with the owners of 39 and 41 Tawariki Street in relation to the proposed landscaping of the site at 44 and 46 Tawariki
- d) full contact details for the person appointed in accordance with Condition 1.3 to manage the public information system and be the point of contact for related enquiries; and
- e) the information required by Conditions 3.4(g) and (i) and 3.6(e) and (g).

10. Tree Management

10.1 The Requiring Authority shall provide details in the CMP as to how the potential impacts of construction on trees and vegetation will be managed. The details shall provide for the:

- a) Identification of trees to be protected, pruned, removed, or transplanted and procedures for marking these out on site.
- b) Procedures for identifying and protecting trees to be retained where works occur in the dripline of such trees as identified by a suitably qualified person.

11. Archaeology and Heritage

- 11.1 If any archaeological material, including human remains are exposed during site work then the Accidental Discovery Protocol according to Standard E12.6.1 of the Auckland Unitary Plan shall apply.

12. Site Reinstatement

- 12.1 Prior to commencement of works at all surface construction sites or an alternative timeframe as agreed in writing with the Team Leader Compliance Monitoring Central, the Requiring Authority shall prepare a Reinstatement Plan for the site, in consultation with the landowner(s). The Reinstatement Plan shall be submitted to the Council in accordance with Condition 1.7. The Reinstatement Plan shall include:

- a) Any existing structures or features on the site to be protected during works or reinstated on completion of works.
- b) The location and design of permanent wastewater infrastructure to remain at the site including the design of lid structures and chamber covers including the associated contouring of ground.
- c) The location and design of permanent access to the wastewater infrastructure. As far as practicable, permanent all-weather access for heavy vehicles shall minimise areas of new impermeable surfaces and, in open space areas, the use of grass cell, or similar, shall be preferred.
- d) Details of proposed landscaping and planting, including implementation and maintenance programmes.
- e) Details of permanent vehicle crossings to the site and design standards.

- 12.2 When contractors' yards or other temporary works areas are no longer required for any construction or operational purpose, site works, including site offices, storage and equipment sheds, fencing and hard stand areas shall be removed, and the area reinstated in accordance with Conditions 12.1.

13. Detailed Landscape Design Drawings, Maintenance Requirements and Implementation

- 13.1 Prior to the commencement of any work on site, the Requiring Authority shall provide to the Council's Team Leader Compliance Monitoring Central for written certification, a finalised set of detailed landscape design drawings and supporting written documentation which have been prepared by a landscape architect. The purpose of the detailed landscape drawings and information is to demonstrate that adverse visual and amenity effects arising from the development of permanent features on the site are appropriately mitigated. Particular regard shall be had to:

- a) Adverse visual effects on 35, 37, 39, 41 and 42 Tawariki Street;
- b) Adverse effects on the character of the Tawariki Street streetscape; and
- c) The quality of replacement planting at the western embankment on St Paul's College land (183 Richmond Road) to screen views from the east of the site

13.2 The submitted information shall be generally consistent with the approved landscape concept plan(s) (prepared by Boffa Miskell dated April 2019) and shall include the design changes certified through consultation with 39 & 41 Tawariki Street; and at a minimum, shall include the following visual mitigation and planting maintenance measures:

- a) Reinstatement planting on site, including plant type and size, within Tawariki Street road reserve and St Paul's College grounds;
- b) Planting, including plant type and size, along the western and southern boundary to partially screen views from 42, 41, 39 and 37 Tawariki Street and provide a vegetated backdrop (on site) for the above ground elements and buildings - specifically the future-proof-planned height of the air vent (8 metres);
- c) Provision of retaining walls, fences, lighting, signage and other structural landscape design elements of a design, material and colour that reflects the treatment of neighbouring residential dwellings.
- d) A landscape maintenance plan (report) and related drawings and specifications for all aspects of the finalised landscape design covering a minimum for 3 years, including in relation to the following requirements: soil preparation, irrigation, watering, drainage, staking, mulching, tree pits and garden bed details, weed removal/spraying and pest control, plant replacement for all plants including specimen trees and climbers which are severely damaged or die for a period of, covering a minimum 3 years, inspection timeframes, contractor responsibilities and ongoing maintenance requirements after contractors approved maintenance period.

13.3 The landscape design shall be implemented within the next planting season after completion of works on site, retained and maintained for a minimum three (3) years in accordance with the implementation and maintenance programme, to the satisfaction of Council's Team Leader Monitoring (Central) and shall be retained for the life of the designation.

4. 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:

- a) Assessment of Effects on the Environment, titled "Grey Lynn Tunnel – Notice of Requirement, Resource Consent Application and Assessment of Environmental Effects" prepared by Jacobs, dated February 2019.
- 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.
 - '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 Bioreserches 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
- d) Section 92 responses dated 18 April and 24 May 2019

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 out 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

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 Inclinator (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, 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).*

- 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 ± 5 mm. 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, the

corresponding 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 show either:
- 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 $\pm 2\text{mm}$ for level and $\pm 5\text{mm}$ 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.

- 4.10 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.
- 4.11 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.
- 4.12 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.
- 4.13 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.
- 4.14 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.



Barry Kaye

Duty Commissioner

9 October 2019

Resource Consent Notice of Works Starting

Please email this form to monitoring@aucklandcouncil.govt.nz at least **5 days prior to work starting** on your development or post it to the address at the bottom of the page.

Site address:				
AREA (please tick the box)	Auckland CBD <input type="checkbox"/>	Auckland Isthmus <input type="checkbox"/>	Hauraki Gulf Islands <input type="checkbox"/>	Waitakere <input type="checkbox"/>
Manukau <input type="checkbox"/>	Rodney <input type="checkbox"/>	North Shore <input type="checkbox"/>	Papakura <input type="checkbox"/>	Franklin <input type="checkbox"/>
Resource consent number:			Associated building consent:	
Expected start date of work:			Expected duration of work:	

Primary contact	Name	Mobile / Landline	Address	Email address
Owner				
Project manager				
Builder				
Earthmover				
Arborist				
Other (specify)				

Signature: Owner / Project Manager (indicate which)	Date:
--	--------------

Once you have been contacted by the Monitoring Officer, all correspondence should be sent directly to them.

SAVE \$\$\$ minimise monitoring costs!

The council will review your property for start of works every three months from the date of issue of the resource consent and charge for the time spent. You can contact your Resource Consent Monitoring Officer on 09 301 0101 or via monitoring@aucklandcouncil.govt.nz to discuss a likely timetable of works before the inspection is carried out and to avoid incurring this cost.