

19 April 2023
30552.9082

Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

Attention: Mark Ross

Dear Mark

Response to s92 requests - Point Erin Tunnel

Further to your letter dated 28 March 2023 requesting further information with respect to application BUN60415108, we provide the below response.

We step through each Request for Information (RFI) and provide further detail and/or explanation as applicable. Each RFI question is reproduced in full and italicised in *blue font* at the start of each relevant section.

In addition, an updated set of proposed key conditions of consent is attached as **Appendix A**.

1 Earthworks

- 1 *Please provide the total cut and fill volumes in m3 that are required across the two areas of earthworks at 94 Shelly Beach Road and provide a cut and fill plan to demonstrate depths in the respective areas.*

Indicative cut and fill volumes for the **main construction area**¹ which are based upon the Construction Phase Plan presented in drawing 2013964.003 rev2 (submitted with the consent application) are as follows:

- Strip 200 mm topsoil over the main construction area – **approximate cut 630 m³**. Topsoil will be removed off-site for storage or disposal.
- Cut site to 17.7 mRL and use cut material for fill – **approximate cut-to-fill 750 m³**. Vehicle movements will be within main construction area only.
- Fill remainder of main construction area to 17.7 mRL and batter west of site towards temporary retaining wall – **approximate fill 2,550 m³**. Fill imported to site.
- Import and place 300 mm thick wearing course across whole main construction area - **approximate fill 950 m³**. Fill imported to site.

The total volume of earthworks is expected to be approximately **4,900 m³**. Site reinstatement will be to the same appearance and contours as existing. The required earthworks will be the same as the activities above but in reverse order².

¹ Area around the proposed terminal shaft which will be fenced and levelled. This includes the temporary site offices and laydown areas.

² Albeit the volumes associated with site reinstatement is expected to be less than establishment.

Indicative cut and fill volumes for the **south west construction area** which are based upon the Construction Phase Plan presented in drawing 2013964.003 rev2 (submitted with the consent application and as modified in the drawing snip below) are as follows:

- Strip 200 mm topsoil over whole of the south west construction area - **approximate cut 360 m³**. Topsoil to be removed off-site for storage / disposal.
- Cut site to 9.57 mRL (lower platform - pink) and 12.0 mRL (upper platform - blue) and use cut material for fill – **approximate cut-to-fill 300 m³**. Vehicle movements within south-west construction area of Point Erin Park only.
- Fill remainder of south west construction area to 9.57 mRL (lower platform - pink) and 12.0 mRL (upper platform - blue) – **approximate fill 1,800 m³**. Fill imported to site.
- Import and place 300 mm thick wearing course across whole site - **approximate fill 540 m³**. Fill imported to site.

The total volume of earthworks is expected to be approximately 3,000m³.



Site reinstatement will be to the proposed final general arrangement and levels. For the northern portion of the site, only minor works are required to achieve final levels. For the southern portion of the site, removal of all temporary fill in this area is required, or **approximately 1,100 m³** to be disposed of off-site, and **approximately 100 m³** topsoil to be imported for site reinstatement.

It is noted that these volumes are provisional and based upon a conceptual arrangement of the proposed construction areas. During the next design phase, Contractor input will be gained which will enable temporary works and cut / fill requirements to be further refined.

2 Development Engineering (Matthew Revill – Auckland Council)

2 *A 1050mm diameter stormwater pipe is proposed for removal. The current purpose of this pipe is unclear, but it is assumed to be some form of overflow bypass such that its removal may have an effect on the flood plain that has not been assessed. Accordingly, please review and provide an assessment of:*

- any effect on the flood plain and overland flow as a result of removing this stormwater pipe; and
- any other effects related to the removal of this stormwater pipe.

This pipe is the existing Sarsfield overflow collector. Flows from this pipe will be diverted into the Point Erin Tunnel. It will be maintained during the construction period and will continue to operate/perform. At commissioning of the Point Erin Tunnel, flows will be picked up by the control chamber and diverted into the Central Interceptor. Therefore, there will be no effects on the flood plain and overland flow path.

3 Groundwater

General comment on questions and additional reporting

These questions were issued by Auckland Council based on the information contained within the original Groundwater and Settlement Effects Report (GSER) – “Screening-level Assessment of Groundwater and Settlement Effects, Tonkin & Taylor Ltd, February 2023” which was presented with the application at the time of lodgement. Subsequently, an addendum report was issued to Auckland Council – “Addendum report – Assessment of Groundwater and Settlement Effects, Tonkin & Taylor Ltd, March 2023”. These reports are referred to as the screening-level report and addendum report respectively in our responses below.

- 3 *In Sections 5.1 and 5.2 of the Groundwater and Settlement Effects Report (GSER), groundwater drawdown settlement (consolidation settlement) and mechanical settlement have been assessed along the tunnel alignment. However, in Section 5.2.2 it appears that the assessment of the predicted mechanical settlement only has been used in the assessment against the Burland classification. Accordingly, please update the GSER to reflect an assessment of predicted total and differential settlement along the tunnel alignment against the Burland Classification.*

The addendum report includes an updated assessment of predicted total and differential settlement along the tunnel alignment and compares this against the Burland Classification (in Section 5.3 of the addendum report).

Section 5.2.6 of the addendum report provides our methodology for combining the effects, with total settlement values tabulated in Appendix B.

- 4 *It is noted that the maximum predicted differential settlement as a result of consolidation settlement alone is 1:300 within 5m of the tunnel axis. This indicates “Slight Damage” in the Burland Classification, with the effects considered to be potentially adverse. Accordingly, please provide a list and identify on plan those properties where the total settlement is 10mm or greater and the differential settlement (as a result of both mechanical settlement and consolidation settlement) is greater than 1:500.*

The revised assessment provided in the addendum report does not identify any properties where construction related total settlements are assessed to be greater than 10 mm or differential settlement steeper than 1:500 along the tunnel alignment.

- 5 *Please provide a total settlement plot along the tunnel alignment and highlight those areas where the predicted differential settlement is greater than 1:500.*

The results of our revised assessment in the addendum report do not identify surface ground settlement to be greater than 10 mm or differential settlement steeper than 1:500 along the tunnel alignment. As such, a plot has not been provided for the tunnel alignment. Rather, settlement values along the tunnel have been tabulated at 40 m chainage intervals in Appendix B of the addendum report.

- 6 *In Section 6.1 of the GSER, groundwater drawdown settlement (consolidation settlement) has been assessed in relation to the excavations for the terminal shaft and control chamber in*

Point Erin Park. Please clarify how the modelled groundwater drawdown settlements (consolidation settlement) of 5mm to 8mm were calculated.

A 1D settlement assessment was undertaken in the screening-level report to assess the consolidation settlement arising from the groundwater drawdown calculations which were undertaken using AnAqSim numerical modelling software. The settlement methodology is summarised in Section 6.1.1 of the screening-level report, adopting the parameters provided in Section 6.1.2 of that report.

- 7 *The last paragraph in Section 6.1.5 of the GSER provides an assessment against the Burland Classification based on the predicted groundwater drawdown settlement (consolidation settlement) only. Please provide justification for this. Alternatively, this assessment could be deleted.*

Section 6.1.5 of the screening-level report gives the comparison against the Burland classification to provide context to what the predicted level of settlement means.

However **please refer to the addendum report for revised total settlement estimates**. On this basis, no updates to the screening-level GSER report provided with the application are proposed.

- 8 *Please confirm that the assessment against the Burland Classification in Section 6.5 of the report is based on predicted total and differential settlement for the terminal shaft and control chamber in Point Erin Park.*

Assessment against the Burland Classification in Section 6.5 of the screening-level report is based on the combined (mechanical + consolidation) settlement. Refer to the relevant parts of the addendum report which supersede the screening-level report (GSER).

- 9 *Please provide settlement profiles at critical locations indicating consolidation settlement, mechanical settlement and total settlement for the terminal shaft and control chamber. The total settlement profiles should be annotated with the maximum differential settlement and the distances of assets from the edge of the excavation should be indicated.*

The information requested is now shown in the contour plan attached in the report appendices. The reviewer is requesting a different format for presenting the same information. We consider the existing format is readily understood and do not consider it is necessary to provide the information in the requested format. Note, many of the assets in proximity to the excavations are Healthy Waters or Watercare assets. Watercare is the applicant and Healthy Waters has provided written approval to the proposed works and has confirmed it should not be considered an affected party for the purposes of the Point Erin Tunnel proposal. Therefore, when considering the proposal, Council as the consent authority cannot have regard to any effects on Healthy Waters' assets pursuant to s104(3)(a)(ii) RMA.

- 10 *Please update the GSER to reflect an assessment of predicted total and differential settlement in relation to the excavations for the terminal shaft and control chamber in Point Erin park against the Burland Classification.*

The screening-level report provides the information requested in Section 6.5.

- 11 *Please confirm if any Waka Kotahi / New Zealand Transport Agency assets will be affected by the excavation and retention for the control chamber in Point Erin Park. If so, please provide an assessment of any potential adverse effects on the identified assets.*

As presented on Figure 1 in Appendix D of the addendum report, total settlement values at the Curran Street SH1 onramp located to the west of the control chamber in Point Erin Park has been assessed as between 5 to 20 mm (upper bound potential effect).

Based on the predicted levels of settlement shown in the addendum report, we confirm the effects of the excavation and retention for the control chamber are likely to be minor or less than minor on the area of the Curran Street SH1 on-ramp which adjoins the control chamber.

Revised assessments will be confirmed through detailed design and the development of the Groundwater Settlement Monitoring and Contingency Plan (GSMCP). As set out in the proposed conditions of consent, if minor damage should result from any settlement, Watercare will remedy it. Nevertheless, Watercare is engaging directly with NZTA regarding their assets.

- 12 *Based on the screening level assessment, please confirm if the predicted effects of the excavation and retention for the control chamber in Point Erin Park will be less than minor / acceptable on those assets listed in Table 6.5 of the GSER along with kerb-lines, footpaths, and private driveways. In particular, please provide evidence from Auckland Transport in relation the predicted total and differential settlement within the road reserve and evidence from Healthy Waters in relation to the predicted total and differential settlement on their stormwater assets.*

Healthy Waters has provided written approval to the proposed works and has confirmed it should not be considered an affected party for the purposes of the Point Erin Tunnel proposal. Therefore, when considering the proposal, Council as the consent authority cannot have regard to any effects on Healthy Waters' assets pursuant to s104(3)(a)(ii) RMA. For this reason, no further assessment of the potential effects on stormwater assets has been provided.

Based on the predicted levels of settlement shown in the addendum report, we confirm the effects of the excavation and retention for the control chamber are likely to be less than minor on kerb-lines, footpaths, and private driveways.

Revised assessments will be confirmed through detailed design and the development of the Groundwater Settlement Monitoring and Contingency Plan (GSMCP). As set out in the proposed conditions of consent, if minor damage should result from any settlement, Watercare will remedy it. Nevertheless, the application has been publicly notified and there is no requirement to demonstrate that the effects will be less than minor.

General comment regarding Questions 13-22

Questions 13 to 22 relate to proposed monitoring locations and methods, including pre-condition surveys. We agree that it is important that trigger levels are developed, pre- and post-condition surveys undertaken as appropriate, and monitoring is undertaken and this will be required by the project requirements. However, we consider that these details are not required at the application stage to understand the effects of the proposal. This application for consent demonstrates the potential envelope of effects and offers conditions to ensure that these effects are appropriately managed.

We provided initial recommendations regarding monitoring type and location in the addendum report to demonstrate how monitoring would support management of groundwater and settlement effects. However, as with other CI sites, the proposed conditions require a Groundwater Settlement Monitoring and Contingency Plan (GSMCP) to be developed once the construction method has been confirmed. The specific location of monitoring and buildings to be monitored shall be confirmed in the GSMCP. At that stage, a more detailed risk based assessment will be undertaken to confirm buildings and structures which could potentially be adversely affected and a monitoring plan will be developed. We have responded to the below questions on this basis.

- 13 *In order to allow for the measurement of differential settlement, it is likely that three settlement pins will be required on the main swimming pool building. Please comment on this, and if necessary, please update the relevant documentation.*

We agree with this recommendation. Our addendum report shows that three (3 No.) monitoring points on the main swimming pool building are proposed (Refer Figure 1 in Appendix B).

- 14 *In order to measure ground settlement between the terminal shaft and the main swimming pool building, it is likely that at least one array of ground settlement marks at 5m centre to centre spacing will be required. Please comment on this, and if necessary, please update the relevant documentation.*

Predicted ground settlement between the terminal shaft and the main swimming pool building are expected to be less than 5 mm, with predicted settlements of 2 mm at the nearest corner of the swimming pool building. This level of ground settlement cannot be accurately monitored with settlement pins as the natural ground fluctuations in the park are likely to exceed these thresholds. If ground settlement does occur in this area, it is likely to be a result of groundwater drawdown. Groundwater monitoring bore BH6 located near the shaft excavation is proposed and considered sufficient to monitor groundwater levels and to provide an alert if groundwater drawdown may result in excessive settlement.

Nonetheless, additional pins can provide reassurance to owners and are relatively easy to install. We recommend that the GSMCP considers this point specifically and if necessary add in additional points to be monitored in accordance with the GSMCP (M&CP as referred to in the draft proposed key conditions (Appendix A of this document)).

- 15 *Three ground settlement pins will likely be required on the eastern side of Curran Street opposite MP9 to MP11 in order to measure differential ground settlement. Please comment on this, and if necessary, please update the relevant documentation.*

We agree with the above. Three monitoring points at 10 m centres parallel to the curb to monitor the eastern side of Curran St are proposed in the addendum report. These details will be further outlined by the Contractor in GSMCP documentation, as set out above.

- 16 *Retaining wall deflection markers will likely be required on the proposed retaining wall that supports Curran Street. Please comment on this, and if necessary, please update the relevant documentation.*

We agree with the above. Monitoring of the retaining structures for the chamber and shaft excavations is proposed in the addendum report. These details will be further outlined by the Contractor in GSMCP documentation, as set out above.

17 *Please identify all groundwater monitoring boreholes which are to be used for monitoring.*

All proposed groundwater monitoring boreholes are identified on Figure 2 in Appendix D of the addendum report. One further groundwater monitoring borehole is proposed directly adjacent to MP12 shown on Figure 1 in Appendix D of the addendum report. These details will also be further outlined by the Contractor in GSMCP documentation.

18 *Please identify in the text and on plan which buildings/structures are proposed to have pre and post construction detailed condition surveys*

At this stage, no specific buildings or structures are proposed to have mandatory pre- and post-condition surveys. However, the consent conditions take a risk based approach, such that where it is appropriate condition surveys will be undertaken. We anticipate, subject to the construction methodology being confirmed, that this will require pre-condition surveys for 72 and 74 Curran St.

19 *Please identify in the text and on plan the extent of each public services for which pre and post construction CCTV surveys and reporting are proposed*

Watercare is in discussion with Waka Kotahi and Auckland Transport and will confirm any pre- and post-construction survey requirements for their assets through this process. Watercare and Healthy Water assets cannot form part of this as Watercare is the applicant and Healthy Waters has given their written approval to the proposed Point Erin Tunnel Project. Any condition survey requirements for Watercare and Healthy Waters assets will be addressed outside of the resource consent process.

20 *Please identify in the text and on plan the extent of the Curran Street Road pavement, kerb-lines, foot paths and private driveways which are to have visual inspection during construction of the control chamber and provide a frequency for these inspections*

These details will be outlined by the Contractor in GSMCP documentation, informed by a risk based assessment based on the confirmed construction methodology.

21 *Please separately identify ground surface settlement markers, building settlement pins, groundwater monitoring boreholes and add retaining wall deflection markers.*

These details will be outlined by the Contractor in GSMCP documentation, informed by a risk based assessment based on the confirmed construction methodology.

22 *Please provide proposed alert and alarm trigger levels for total and differential settlement for buildings and ground surface, and retaining wall deflection markers and alert level 1 and 2 for groundwater monitoring.*

These details will be outlined by the Contractor in GSMCP documentation, informed by a risk based assessment based on the confirmed construction methodology. We would anticipate that these would be consistent with trigger values utilised on other CI sites.

4 Landscape and visual

- 23 *The permanent above ground structures and buildings required include venting (2.6m² vent and 10m² total area and approximately 3m high), a plant room (40m² in area and 4m high) and retaining walls. No design details have been provided for these permanent structures, as they are to be undertaken later through consultation with Council and mana whenua etc., which has been offered as a condition of consent. However, to understand potential adverse effects associated with their visual presence, a general idea of the location, relationship, and scale of these structures and buildings within the site is required. Accordingly, please provide perspectives or model views of the site illustrating the proposed location and scale of the: vent within the terminal shaft location; and the plant room and retaining walls (or retained embankment) within the control chamber location, as seen from within the site and from the immediately surrounding catchment.*

Advice Note: the perspectives do not need to indicate proposed future planting (noting this is to be confirmed later through a condition) but at a minimum it should show the structures, landform modification, recontouring anticipated, and removal of trees.

As set out in the application, the final design of the above ground infrastructure and reinstatement planting is proposed to be developed in consultation with mana whenua and Auckland Council.

To provide further clarity on the potential landscape and visual effects of the project, the following additional information has been compiled in Appendix B:

- Memo titled “Further information on potential design and appearance of above-ground infrastructure – Point Erin Park”, prepared by Tonkin & Taylor Ltd, dated 17 March 2023.
- A ‘mood board’ showing examples of design precedents which will be used to commence discussions on options for the design consultation process with mana whenua and Auckland Council.
- Images showing the 3-D design model for the project overlain on photographs of the site to provide a rough indication of the general bulk and location of above-ground infrastructure, noting that these do not include any planting or potential design elements to integrate them with the surrounding environment.
- An indicative planting plan, showing potential areas of planting.

We consider that this is sufficient information to provide a good understanding of the potential landscape and visual effects of the project.

- 24 *The submitted Assessment of Effects on the Environment (AEE) notes that the size and design of the temporary retaining walls required to form the flat construction areas will be determined by the contractor. However, the submitted Landscape and Visual Effects Assessment (LVA) recommends that all temporary retaining walls be timber post and board to manage landscape effects. Please confirm if any conditions are offered to manage the design, scale, height, and integration of the temporary walls and fences, noting they could be in place for up to three years and are up to 4m tall. In addition, please clearly mark on the submitted ‘site general construction phase plan’ which retaining walls are temporary.*

We acknowledge that the LVA recommends all temporary retaining walls be timber post and board. However, it is important that some degree of flexibility is maintained to allow the Contractor to explore alternatives, whilst maintaining similar or better landscape outcomes. Refer to proposed condition 58A which requires timber for temporary retaining walls unless otherwise approved by Auckland Council.

Please refer to Appendix B, containing a marked up version of the 'site general construction plan', with temporary retaining walls clearly labelled.

- 25 *From an atmospheric carbon sequestration rate perspective and to ensure there is no deficit by 2050, at least thirty-eight exotic trees or forty-nine native trees are required to be planted (page 59 of the AEE). The offered condition (condition 60) notes that as many trees as practical shall be planted on site. That notwithstanding, the nine trees proposed for removal, including the loss of two large pohutukawa trees at the southwest entrance, will change the character and amenity afforded to both local residents and regular visitors. From a landscape and visual amenity perspective, is there a minimum number of trees and / or species that are required to be reinstated within the southwest corner of the site in order to mitigate the loss of the pohutukawa and other trees? Please advise.*

The number of replacement trees is not the key driver for addressing landscape and visual effects associated with the removal of trees and establishment of permanent above-ground infrastructure in the south-western corner. Rather, the location of plantings and species selection are more relevant.

We do not want to pre-empt the outcome of the design consultation process with mana whenua and Auckland Council, and as such it is not feasible to make a recommendation on number of trees from an effects management perspective. However as set out in the proposed conditions, the objective of replanting will be to restore and enhance the landscape, amenity and recreation values of the park. The planting will achieve the same intent as is shown on the indicative planting plan provided in Appendix B.

- 26 *The AEE notes (page 45) the permanent area within the southwest of the site will reduce to 10m in width, with a permanent retaining wall along Curran Street and a smaller permanent retaining wall (or reinforced embankment) along the eastern edge. The section provided in the drawing set only shows the reinforced embankment option. Accordingly, please provide an additional section showing the retaining wall option in order to allow for an understanding of both potential outcomes to be obtained*

Please refer to Appendix B which provides sections through the south-west corner of Point Erin Park. These show the reinforced embankment option, and the retaining wall option along the eastern edge of the plant room platform. Which option is selected will be determined through the design consultation process. The options present different opportunities for visual integration – the embankment could be planted, whereas the retaining wall would provide a 'layering' of structures and could also have seating built into it, serving a dual purpose.

- 27 *Please demonstrate that within the 10m wide permanent platform accommodating the plant room and chamber covers (i.e., post construction) that there will be sufficient space directly along the retaining walls, or in close proximity, to enable planting. The submitted plan shows a generic area but does not specify if this is required to be paved (e.g., for access purposes) or is suitable for planting. This is requested as the proposal relies on the integration of the wall to manage long term adverse effects, but limited information has been provided to demonstrate that this is achievable.*

Please refer to the marked up planting plan (Appendix B) showing areas which are available for planting. The final location and type of planting will be determined through the design process in consultation with Auckland Council and mana whenua. The indicative planting plan demonstrates

that it is possible to plant in proximity to the retaining walls, which provides one potential method for visually integrating the wall(s) with the surrounding landscape.

Planting is not the only option available to integrate the retaining wall with the surrounding landscape – design of the retaining wall, use of colour and cladding and vines are all potential options to visually integrate the retaining wall.

It is important to note the scale of the permanent retaining walls, as shown on Section 1, Drawing 2013964.009 in the drawing set provided with the application. The permanent retaining along Curran St will be 2-3m high at its maximum height, tapering to ground level at both ends along a length of 90m. Along much of its length the retaining wall will be less than 1m in height.

- 28 *Will the permanent retaining wall along the western side of the control chamber site be constructed to its final height and design as one stage, or will a temporary wall be constructed with the final wall to be comprehensively designed and constructed with all other structures as part of the reinstatement works? Please confirm.*

It is likely that the retaining walls for the construction areas will be temporary, then replaced with permanent structures at completion, as levels will likely change between the construction level and permanent level. Nevertheless, should a retaining wall developed during the construction phase ultimately become a permanent retaining wall, the external appearance of the retaining wall could be treated with cladding to better visually integrate the retaining wall. If this were the case, it would be considered through the design process in consultation with Auckland Council and mana whenua.

- 29 *Proposed condition 59 outlines the design objectives for the permanent structures, including modulation of buildings and screening / anchoring of buildings through planting, with the ultimate outcome being the overall enhancement of amenity values. However, these objectives seem to specifically relate to the plant room. Please confirm if these objectives will also apply to the design of the vent structure? If not, please provide an assessment as to why this is not necessary.*

It is intended that the objectives of visually integrating permanent infrastructure and maintaining or enhancing visual amenity apply to all above-ground infrastructure. Condition 59 applies to all permanent above-ground infrastructure to remain as a result of the project, and specifically lists the air vent.

We have also amended condition 63 to include reference to planting to visually integrate the air vent. Refer to Appendix A.

- 30 *Please provide copies of the Cultural Values Assessments (CVAs) from the relevant mana whenua groups when they are complete. Please also provide a supplementary assessment that details how the concerns and / or recommendations raised within any of the CVAs have been, or will be, incorporated or adopted into the proposal (which could be by way of condition), or why not where they have not.*

Refer to the response to Question 52.

5 Contamination (Paul Crimmins – Auckland Council)

- 31 *Within the submitted AEE, 'out of an abundance of caution', discretionary activity consents have been applied for under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES:CS) and Rule E30.4.1(A7) of the AUP(OP) (for contaminant discharges). However, instead of applying for these consents under the NES:CS and AUP(OP), the low-level risks associated with potential accidental discovery of contamination during the project could potentially be managed by adhering to a Contaminated Site Management Plan (CSMP), which could be referenced by an Augier condition.*

The above pathway is offered as within the AEE it is acknowledged that there is negligible risk of encountering soil contamination during the works, noting that there have been instances at other Central Interceptor work sites where soils with contaminants above natural background ranges have been encountered. However, the potential presence of elevated levels of contaminants (particularly when limited to levels above natural background ranges but at levels less than the relevant soil contaminant standards for the protection of human health referenced by the NES:CS and AUP(OP) contaminant discharge soil acceptance criteria Standard E30.6.1.4) does not trigger any consenting requirements. Given the depth of tunneled excavations (largely within natural rock) and absence of HAIL activities within the areas where near-surface excavations are to occur at Point Erin Park, there is negligible risk of encountering such significant contamination during the works. Any unexpected discovery of significant contamination during the works is proposed to be handled in accordance with existing Central Interceptor CSMPs, which is appropriate and adheres with the relevant accidental discovery protocols.

Accordingly, it is considered that it is unnecessary and would potentially be incorrect to grant soil contamination consents as part of this proposal. Please review and comment on this, including the ability to address the potential accidental discovery of contamination during the works through the implementation of a CSMP via an Augier condition.

We agree with the above and consider it a pragmatic approach to managing the potential accidental discovery of contamination. On this basis, Watercare considers the following consent triggers identified in the AEE are not applicable and do not need to be considered further through this application process::

- **Rule E30.4.1 (A7)** of the AUP - Discharge of contaminants onto or into land without a Detailed Site Investigation (DSI) as a **discretionary activity**
- **Regulation 11** of the NES Soil – soil disturbance as a **discretionary activity**

A condition has been offered in the key proposed conditions which sets out how unexpected contamination is to be dealt with. Refer to Condition 20 in Appendix A.

6 Stormwater

- 32 *A stormwater diversion and discharge consent is sought for the duration of the construction period. While Section 1.2.2 of the AEE outlines that construction is expected to take approximately two-years, it is not clear within the submitted documents the length of the*

consent duration that is sought. Accordingly, please clarify the duration of consent sought in respect of the diversion and discharge of stormwater runoff.

Consent is sought for a duration of 10 years from the date of grant, to provide flexibility on the timing of construction should there be unexpected delays to the tunnel boring machine's progress towards Point Erin. This is the consent duration and does not mean that the diversion and discharge of stormwater during the construction period occurs for this duration. As set out above and in the application and as required by proposed condition 1, the stormwater discharge will occur over the construction period only (likely to be approximately 2 years although potentially longer e.g. 3 years).

- 33 *While the extent of above ground works within Point Erin Park is clear, the management of stormwater runoff from these works is not, with the AEE only stating that runoff of stormwater will be managed in accordance with industry best practice. Please clarify where stormwater runoff will be directed to for each area of works and provide more detail on the management methodologies and devices that will be employed.*

We note this is a relatively small construction area that marginally exceeds the relevant permitted activity threshold of 5,000m².

The terminal shaft and control chamber will be dewatered so any stormwater (rain) that enters these deeper excavations will be subject to dewatering and associated treatment. Outside of these excavations, stormwater runoff from the two stabilised (metalled) construction areas will be discharged as overland flow via the sediment treatment and detention devices, consistent with practice on other construction sites. Refer to the draft Erosion and Sediment Control plan attached to the original application as Appendix H4.

7 Noise and vibration

- 34 *The submitted Noise and Vibration Effects Report (NVER) references construction works in the coastal marine area (CMA) as a potential reason for working outside of standard construction hours. It is understood that there are no works proposed within the CMA. Please confirm.*

The reference to works in the CMA in Section 2.4.3 of the Assessment of Noise and Vibration Effects refers to the original CI consents to illustrate what was permitted in previous consents for 'out of hours' work. We can confirm no work in the CMA is required for the Point Erin Tunnel project.

- 35 *Section 3.6 of the NVER references AS/NZ 2107:2016 for internal noise limits within sleeping areas at night during tunnelling. The AS/NZ 2107:2016 Standard is for designing interior spaces of buildings and selecting appropriate building materials with respect to excluding noise from steady-state sources, such as mechanical ventilation. The Standard states that it is "not intended for either the assessment or prescription of acceptable recommended noise levels from transient or variable noise outside the building such as construction noise". Accordingly, this Standard is not an appropriate reference for the project with respect to potential noise effects from tunnelling, which is a temporary construction activity that will generate varying noise levels over a short period of time. However, it is agreed that an internal noise limit of 35 dB LAeq(15 min) within occupied bedrooms at night (22:00 to 07:00) is generally appropriate for the avoidance of sleep disturbance from reradiated noise caused by tunnelling. Accordingly, please either provide further assessment on the appropriateness of the use of Standard AS/NZ 2107:2016 or remove them from the NVER and confirm that the internal noise limit is included in a condition of consent for the project.*

As there is no standard for regenerated noise, AS/NZ 2107:2016 was used as a source of reference for internal noise. We could have referenced a number of other guidance documents such as those from the World Health Organisation, which would have resulted in the same recommended internal noise limit of 35dB $L_{Aeq(15min)}$ for occupied bedrooms at night. We also note this limit has been accepted for previous CI projects involving night-time regenerated noise within buildings. Watercare agrees with the recommendation to include the noise limit in a regenerated noise condition of consent. Refer to proposed condition 24A, attached at Appendix A.

- 36 *Section 5.3.4 of the NVER references the guideline vibration values of DIN 4150-3:1999 for commercial buildings with respect to avoiding potential damage within the swimming pool at Point Erin Pools. The guideline vibration values of this Standard are based on 'no damage' limits for structural vibration in buildings. They do not apply to swimming pools. Vibration within swimming pools cannot be measured or assessed in accordance with DIN 4150-3:1999. Accordingly, please ensure that the vibration levels at the pool are reviewed by a relevant expert (e.g., a structural engineer) and provide an assessment from this expert advising on the potential for damage to Point Erin Pools from vibration, including limits if required.*

In the absence of relevant guidance for structural vibration sensitivity for swimming pools, DIN 4150-3:1999 was adopted. We consider the low predicted vibration levels of less than 2 mm/s to be less than minor in terms of structural integrity for a commercial pool even when assessed against the Standard's most protective limit of 2.5-3 mm/s for sensitive structures. We consider that a structural investigation is not required. If vibration concerns arise when construction starts then they will be managed via the CNVMP through monitoring and investigation if required. However based on the Noise and Vibration Assessment and the very low predicted vibration levels, well below guideline levels including the permitted activity threshold levels in the AUP, we consider this is highly unlikely.

- 37 *Section 6.2.1 of the NVER assumes a reduction of 20 dB through the building façades and states that 25-30 dB will be more likely in many cases. This is agreed with but it is noted that the internal noise levels discussed in Table 6-1 of the NVER are based on only a 17 dB reduction because the +3 dB for reflections in the external noise level predictions have not been accounted for. Please address this.*

Table 6-1 has been used as a guide to inform the assessment of effects. We agree in practice that a 3 dB reflection correction when measuring external noise levels would apply. However, for illustrating internal noise effects a rounded 20 dB was used rather than having 'odd' numbers, e.g. 70-17 dB = 53 dB rather than 50 dB. The approach adopted is considered conservative since a 25-30 dB reduction is more likely.

- 38 *Section 3.5.2 of the NEVER states "AUP Rule E25.6.30 includes an allowance for up to 5 mm/s PPV being received between 7am and 6pm for no more than three days provided that occupants within 50m are advised at least three days prior to works commencing". This allowance only applies to projects that generate vibration for a total of three days or less. The permitted construction vibration amenity limit during the daytime for the project is therefore 2mm/s within any occupied building. This is unlikely to affect the conclusions of the NEVER but the rule will need to be applied correctly in the CNVMP to avoid non-compliance. Please address this.*

We agree that this is the correct interpretation of AUP E25.6.30 and 2 mm/s PPV will be applied within the CNVMP as the general project limit. Nevertheless, this does not change the conclusions in

report, there are only 3 receivers where construction vibration is predicted to exceed 2 mm/s PPV. We also note that the TBM will typically move 10-20m a day so it is likely to pass beneath individual properties in less than three days.

- 39 *The proposed construction noise limit condition (condition 24) should state the numerical noise limits that apply to the project (rather than refer to the AUP standard for adjustments). This is a requirement for setting noise limits in accordance with the provisions of NZS 6803:1999. Please address this.*

We have amended the construction noise limits within the proposed consent conditions to remove reference to the AUP, and to just refer to the numerical noise limits. Refer Appendix A.

- 40 *What are the predicted noise levels, and the timing and duration of any expected noise compliances, during tree removal and chipping on site, including all proposed mitigation measures? This information is required to understand the level of effect that an Activity Specific Noise and Vibration Management Plan for these activities would enable.*

Tree removal works are likely to be completed within a five day period during normal construction hours. The woodchipper will be operated periodically over this time. Currently, it has not been determined where the woodchipper will be located, therefore two approximate locations have been assumed to provide a worst case prediction (Figure A1) and more likely location (Figure A2) (Appendix C). The woodchipper may not be limited to the two locations only, and the presented noise levels are indicative. Predictions will be revised prior to tree removal activities as part of the activity specific management within the CNVMP. Predictions assume a 2 m noise barrier will be erected around the woodchipper.

As with current CI practices, the following mitigation will be employed:

- An activity specific management plan/section within the CNVMP to be submitted to Council prior to commencement of the activity to identify location of works and affected parties;
- A 2-3 m barrier will be erected around the woodchipper;
- Consultation with affected parties to enable scheduling of works outside of sensitive times during normal construction hours;
- Noise monitoring when wood chipping commences.

More broadly, works will be carried out in accordance with general best practice.

8 Auckland Transport

- 41 *The vehicle tracking drawings provided in Appendix A of the Integrated Traffic Assessment (ITA) are not legible. Please provide a legible drawing for each of the proposed vehicle crossings.*

Advice Note: For clarity, the drawings should not show any underground services, trees or tree dripline extents, or topographic contours. The must show all road markings (existing and proposed), kerb-lines, the outlines of any vehicle crossings or internal driveways / paved areas internal to the site, buildings, or fences. The swept path of the vehicle should be shown and also a line representing a 0.5m clearance beyond the swept path. This 'body clearance line' should be in a different colour from the swept path, the road markings and the kerb-line.

An updated version of the drawings is provided in Appendix D.

- 42 *It is noted that a 17.9m semi-trailer is used for tracking purposes. As vehicles of up to 19.45m are permitted on New Zealand roads, please confirm the largest vehicle that will access the site.*

As detailed in section 3.6.1 of the ITA, a semi-trailer (17m) is the largest construction vehicle typically expected to access the site for the majority of the construction work in Point Erin Park.

As detailed in section 3.6.2 of the ITA, specialised machinery will require access on a periodic basis to remove each of the tunnel boring machine elements from the site. Separate to the Resource Consent application, bespoke SSTMPs and CARs will be developed once exact details of the machinery and vehicles required is known, as they have successfully been carried out for the rest of the CI project. Agreement with Auckland Transport and Waka Kotahi will be required and over-dimension rules and associated permitting processes will need to be complied with.

- 43 *Please clarify the location of the solid median referred to in Section 3.6.3 of the ITA*

Please see image below



- 44 *Section 3.6.3 of the ITA states “For egress movements onto Curran Street, a Traffic Management supervisor will assist truck drivers to safely exit the site”. It is noted that this is the case for both construction as well as permanent use of the Curran Street vehicle crossing. Please confirm if the traffic management supervisor assistance for all trucks leaving the site is offered as a condition of consent for both construction and permanent use.*

Advice Note: Vehicles using Shelly Beach off ramp will need to be advised to slow down as slow right turning trucks from Sarsfield Rd may cause a safety concern. This will need to be addressed in the required Construction Traffic Management Plan / Traffic Management Plan.

Amendments have been made to proposed key condition 32 in Appendix A to include:

- Measures to manage and/or supervise the egress of vehicles onto Curran Street.
- Measures to manage traffic on Shelly Beach Rd offramp.

These matters will need to be addressed as part of the CTMP, and will be subject to certification by Council.

Regarding the permanent egress onto Curran St, it is anticipated that use of this egress point will be very infrequent – likely once or twice a year for ongoing maintenance and operation of the Point Erin Tunnel as required. Access to the site for routine inspections will be via a ute. Where maintenance is required, the largest anticipated vehicle is an 8m medium rigid truck see drawing No. 2013964.010). Due to the infrequency and nature of vehicles using this egress, we do not consider it is necessary to condition a requirement for the exit to be supervised.

- 45 *The vehicle crossing drawing for the Sarsfield Road access as shown on Appendix B – “Drawings, Proposed Site Layout” indicates that an existing power and lighting pole will be located in the middle of the proposed permanent vehicle crossing along with an existing catch pit. The vehicle crossing also splays towards the west. Noting the above, please provide:*
- a *an assessment of the vehicle crossing’s design in relation to the power pole, noting the ITA appears to indicate tracking those conflicts with the pole.*

An updated drawing of the south west permanent access is attached in Appendix D with vehicle tracking (drawing No. 2013964.010). Please note the following:

- The existing site layout has been maintained in terms of the pedestrian-oriented entrance to the park, as opposed to a vehicle crossing oriented layout. The existing pedestrian ramp, tactiles, footpaths on Sarsfield Street (north and south) and the footpath into Point Erin Park will be retained.
 - The existing pedestrian ramp will be slightly lengthened by approximately 3.5m to accommodate the maintenance access.
 - The existing ramp transition will be extended by approximately 2m.
 - The existing street tree will be removed (provision for its removal is included in the resource consent application).
 - The existing power pole will not be affected and hence no change is required.
 - Existing catchpits will be unaffected.
 - The existing grass paver maintenance access will be surfaced and widened from 4m to 5m.
 - The existing bollard will be reinstated and an additional bollard will be provided.
 - Existing road markings will be reinstated including the NSAATs, stop marking and pedestrian ramp markings.
- b *an assessment of the vehicle crossing’s design with regard to the proposed turns into the site, noting that the ITA only shows right turning into the site but the design of the crossing indicates that it allows for left turns as well.*

The access has been designed for a truck to turn right into the site from Sarsfield Street.

- c *further information regarding the design of this vehicle crossing, including the width of the crossing as well as the proposed treatment at the kerb.*

Please see the response to Q45 a above.

- d *an assessment of effects of the location and design of this proposed crossing on pedestrian safety and amenity taking into account the above-mentioned power pole and the existing pedestrian crossing (see figure 1 below).*



Figure 1: existing park access showing power pole, catch pit and pedestrian crossing.

Advice Note: Auckland Transport encourages the exploration of mitigation measures that will maintain the pedestrian-oriented entrance to the park as opposed to vehicle crossing oriented.

As demonstrated in response to Q45a above, the access design maintains the pedestrian-oriented entrance to the park which can be used infrequently for vehicular access and therefore there will be no impact on pedestrian safety or amenity.

- 46 *Section 3.7.2 of the ITA states that “The site ingress will be bollarded to prevent future public vehicle access and will provide access for pedestrians to the Point Erin Park footpath network (as is the existing situation)”. Please confirm the operation and removal procedures of these bollards as there is a need to avoid trucks parked in the road and / or footpath while removing the bollards.*

Advice Notes: It is unsure if someone will arrive on site prior to trucks entering the site noting that this could be required. The traffic management supervisor mentioned in section 3.6.3 of the ITA could remove the bollards prior to trucks entering the site. The applicant is encouraged to explore the option of providing this as a condition of consent to ensure the safe access to and from the site for trucks.

The proposed situation is no different to the existing situation, where there is a wooden bollard at the park entrance which is removed for maintenance (eg by Council Parks). It is anticipated that Watercare use of this site ingress point will be very infrequent – likely once or twice a year for ongoing maintenance and operation of the plant room. Access to the site for routine inspections will be via a ute. Where maintenance is required, the largest anticipated vehicle is an 8m medium rigid truck. There is ample on-street parking on Sarsfield St for the ute or truck to park up and wait in while the driver removes the bollard to provide access. Maintenance vehicles will be programmed to take place wherever possible, during out of peak times to reduce any impacts in the peak periods. Due to the infrequency and nature of vehicles using this entrance, and the availability of on-street parking, we do not consider it is necessary to condition a requirement for a traffic management supervisor to remove the bollard prior to vehicles entering the site.

Advice note: There is a portion of road reserve that extends into the park over which structures and fencing are proposed, please see figure 2 below. The 'Permanent Structures in the Road Corridor' Bylaw does not apply to utility operators and as such encroachment license for these works will not be required if they are included and approved via Engineering Approval. Water supply and wastewater infrastructure is not defined in the Local Government (Auckland Council) Act (LGACA) and it is unsure if the proposed fencing falls under this within the LGACA. If the fence/retaining wall is considered as part of the infrastructure, then encroachment approval will not be required.

We understand you are referring to the Activities in the Road Corridor Bylaw 2022 (Bylaw). Pursuant to clause 2(6), the Bylaw does not apply to:

- a) a utility operator, to the extent that it is exercising a statutory right to construct or maintain utilities in, on or under a road, or is otherwise accessing the road corridor in accordance with the Utilities Access Act 2010;
- b) utilities constructed in, on or under a road by a utility operator pursuant to a statutory power to do so.

Watercare has the power to construct, place, and maintain water supply and wastewater infrastructure in, on, along, over, across or under any road or public land under s65(1) of the Local Government (Auckland Council) Act 2009 (LGACA). Although neither the Bylaw or LGACA defines "wastewater infrastructure", to the extent the Bylaw applies the exclusion in clause 2(6) of the Bylaw must also apply to ancillary supporting infrastructure, such as fences and retaining walls, which are a necessary component to the safe and efficient functioning of wastewater infrastructure. Watercare therefore does not consider an encroachment approval to be required under the Bylaw for the Project.

9 Traffic – Council

47 Please provide tracking drawings to demonstrate that a medium rigid truck and an 85th percentile car can pass one another along the Point Erin Pools access road.

Given the existing width of the Pool access road (circa 5m) it is unlikely that a semi-trailer truck and car will be able to safely pass one another. A rigid truck and car will be able to pass each other. It is therefore proposed that the CTMP includes measures whereby once the Traffic Management (TM) supervisors are radioed of an incoming semi-trailer truck, then one TM supervisor will hold cars wanting to leave the public car park within the car park (there is sufficient space to do this), whilst another TM supervisor controls the truck (and any other following cars) into the Pool access road. Once the semi-trailer truck has entered the main site, then the cars can be allowed to exit the car park.

For semi-trailer trucks exiting the main site, these can be held within the main site. The TM supervisors will be able to manage the safe exit of the trucks should there be arriving cars to the public car park. If required, the same process can be used for rigid trucks.

The above needs to be put in the context that the public car park peak use is limited to weekdays for only for 1 month (January) and on Saturdays for only three months (December, January and February). Outside of these periods there are very limited numbers of cars using the Pool access road. Furthermore, as demonstrated in Table 4.1 of the ITA, the highest number of trucks using the Pool access road will be 4 per hour (or 1 every 15 minutes) and the number of semi-trailer trucks is

only likely to be a maximum of 1 per day. Therefore, there will be very limited times during the day on a January (or Saturdays in December, January and February) when semi-trailer trucks and cars will actually seek to utilise the Pool access road at the same time.

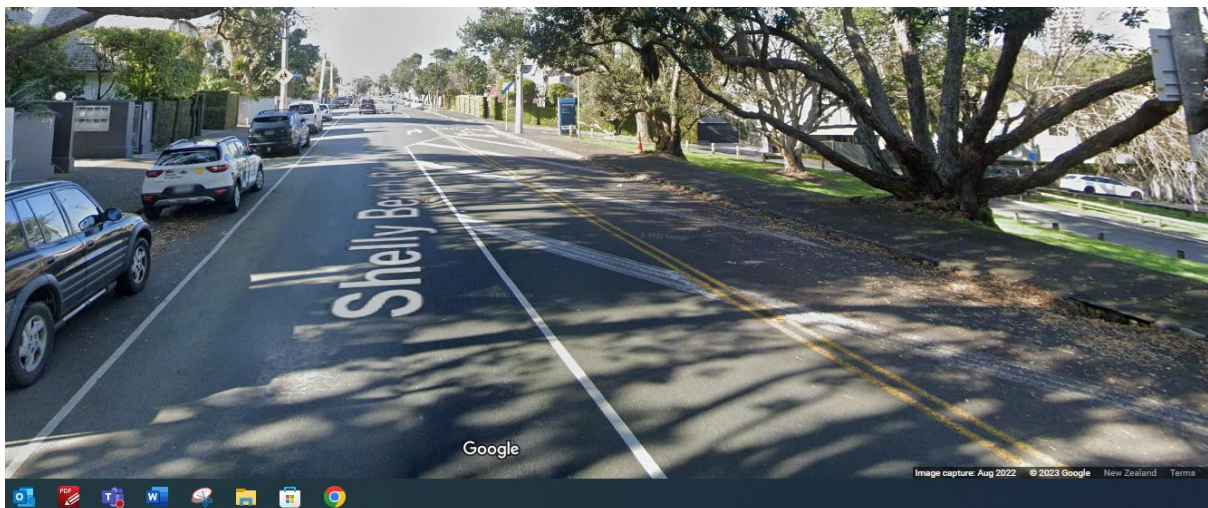
- 48 *Please confirm the type of vehicle that will be used for maintenance at the southwestern area once operational and whether ingress movements will need to be supervised, particularly if semi-trailer trucks will be utilised.*

It is anticipated that this use of this site ingress point will be very infrequent – likely once or twice a year for ongoing maintenance and operation of the plant room. Access to the site for routine inspections will be via a ute. Where maintenance is required, the largest anticipated vehicle is an 8m medium rigid truck. Due to the infrequency and nature of vehicles using this entrance and the existing low speeds at this location, we consider truck movements into the site for maintenance can be performed safely without a TM supervisor.

- 49 *While it is accepted that adverse traffic related effects can be addressed through the implementation of a construction traffic management plan, details in respect of the following are required at application stage in order to ensure that adverse effects can be appropriately managed:*

- *Details as to where the heavy vehicle layover will be accommodated and how it will be managed by the site traffic management supervisor (STMS) to minimise disruption to the surrounding transport network.*

For the main site access, if required, the vehicle layover could be located on Shelly Beach Road utilising either the on-street 120 minute time limited parking on the west side or the painted median on the east side (see image below):



As explained in response to Q47 above, it is anticipated that the use of a layover area will be very infrequent. Details of the layover area, if required will be provided in the CTMP.

For the south west site access, if required, the vehicle layover could be located on Sarsfield Street utilising the on street 120 minute time limited parking on the south side (see image below):



It is anticipated that the use of a layover area will be very infrequent. Details of the layover area, if required, will be provided in the CTMP.

- *Details with respect to the monitoring of the main construction area access at all times while the construction site is operational in order to provide for the safety of pedestrians, noting the likely high level of use of the footpath.*

As detailed in section 6.4 of the ITA, the TM supervisor will monitor and assist pedestrians on the access road footpath to the Pool and playground to cross the site access and also assist any pedestrians from the car park to cross the access road to the park during times that construction vehicles are accessing the site.

As detailed in section 5.7 of the ITA, site surveys were undertaken which indicated use of the footpath (whilst the Pool was open) was observed to be from people who had parked on Sarsfield Street and this is not considered as 'high level' usage. Outside of the peak Pool usage for the remaining 11 months of the year, use of the footpath is likely to be minimal³.

- *Details on how semi-trailer truck movements along the Point Erin Pools access road will be managed safely and how disruption to the surrounding transport network will be minimised given that cars will not be able to use this access road when it is being used by semi-trailer trucks.*

See response to Q47.

- *A concept design for the proposed temporary pram crossing along Sarsfield Street demonstrating compliance with Waka Kotahi's / New Zealand Transport Agency's Pedestrian Network Guidance and the Auckland Transport Design Manual and the*

³ This is supported by the Strava heatmaps presented on Page 14 of the Recreation Assessment (Appendix H1 of the application).

potential need for a temporary 30 km/h speed limit on affected sections of Sarsfield Street (to ensure that the pram crossing can safely function), including in the vicinity of the Point Erin Pools access road.

The proposed temporary stepped path is expected to be located opposite #14 Sarsfield Street. Given that this is a temporary stepped path and therefore unsuitable for use by visually impaired people, it is not considered that TGSi warning tactiles are necessary. It is also considered unsuitable for use by mobility impaired people or people with buggies/pushchairs and hence ramped (pram) crossings are considered not to be required. At this stage we do not have a design drawing available but we expect the temporary pedestrian crossing of Sarsfield Street will consist of:

- 1 Sarsfield Street (south side) use the dropped crossing of the existing driveway at #14.
- 2 Sarsfield Street (north side) either retain the existing kerb or provide reflective heavy duty rubber temporary kerb ramp – see image below:



- 3 Surface a 1.8m wide section of berm on the north side of Sarsfield Street to connect to the existing footpath to avoid pedestrians crossing over wet grass.
- 4 Introduce temporary removal of parking on Sarsfield Street for a distance of 20m east and west of #14 driveway and 20m east and west of the north side pedestrian crossing point to avoid pedestrians crossing in between parked vehicles.
- 5 As part of the overall CTMP, investigate the scope to have a temporary reduced speed limit on Sarsfield Street of 30 km/h between Shelly Beach Road and Curran Street.

10 Parks

- 50 *As outlined within objectives and policies H7.5.2., H7.5.3., H7.6.2., and H7.6.3 of the Auckland Unitary Plan (Operative in Part), the location and design of any new buildings, structures, and activities must maintain the character, function, and amenity values of open space for, in this case, informal recreation and sport and active recreation purposes, and avoid or mitigate any adverse amenity effects, including those relating to visual dominance, overlooking and shading. Please provide an assessment that specifically addresses these matters.*

An assessment against the objectives and policies in Chapter H7 – Open Space Zones is provided in Section 7.4.3 of the Assessment of Effects on the Environment. Of particular relevance to the Point Erin Tunnel project is Policy H7.3(4) “Enable the construction, operation, maintenance, repair and minor upgrading of infrastructure located on open spaces”. This explicitly recognises that infrastructure required to service a city and ensure the health and wellbeing of its inhabitants is sometimes required to be sited in Open Space zones.

The question refers to objectives and policies in H7.5.2., H7.5.3., H7.6.2., and H7.6.3 of the Auckland Unitary Plan which relate to the character, function, and amenity values of open space and amenity effects. Notwithstanding that the relevant provisions in the AUP should be considered as a whole,

and that Policy H7.3(4) expressly provides for the construction of infrastructure in open spaces, an assessment of the objectives and policies in Chapter H7 which relate to these matters is provided below.

| Objectives and policies relating to character, function, and amenity values of open space and amenity effects | Comment |
|---|--|
| H7.5.2.(1) The open and spacious character, amenity values and any historic, Mana Whenua, and natural values of the zone are maintained. | <p>At the outset the Project has sought to manage and minimise effects on the Open Space zone. This includes locating the construction areas away from the SEA and Mana Whenua overlay areas. While there will be temporary effects from construction works on the amenity values of Point Erin Park, measures will be implemented to avoid, remedy, or mitigate effects and minimise disruption as far as practicable (e.g. through the use of site fencing, noise and vibration limits set out in the proposed consent conditions, noise barriers where required, communication with the public, providing alternative access, etc (Objective H7.5.2(1)).</p> <p>As required by the proposed conditions of consent a Park Restoration and Landscape Plan (PRLP) will detail how the amenity values of the park will be restored and enhanced upon the conclusion of construction (Objective H7.5.2 (1) and Policy H7.5.3 (2)).</p> <p>The permanent structures will be located and designed to minimise effects on the open space and amenity values (Policy H7.5.3 (5)) and all other areas will be returned to public use and recreation space (Objective H7.5.2 (2), Objective H7.5.2 (3) and Policy H7.5.3 (4)).</p> |
| H7.5.3.(2) Maintain or enhance the natural character values of open spaces by retaining significant vegetation (where appropriate and practical) and through weed removal, new planting and landscaping. | |
| H7.5.3.(5) Locate and design buildings and structures to: (a) complement the open and spacious character, function and amenity values of the zone; (b) maintain public accessibility and minimise areas for exclusive use; and (c) protect any natural or historic heritage values | |
| H7.6.3.(3) Design and locate buildings and structures (including additions) to be compatible with the surrounding environment in which they are located, particularly residential environments, and to avoid or mitigate any adverse effects, including visual, dominance, overlooking and shading. | |
| H7.6.3.(3) (4) Design and locate buildings, structures and activities so that any adverse effects, including noise, glare and traffic effects, are managed to maintain a reasonable level of amenity value for nearby residents, communities and the surrounding environment. | |

Having regard to the nature of the project and the mitigation proposed, the application is considered to be broadly consistent with the objectives and policies of the AUP which includes those contained within Chapter H7 – Open Space Zones.

- 51 *The proposed works need to address the requirements of the Reserve Act, which refers to the “appropriate purpose” of a reserve under section 16(8) and is defined as follows: “When classified under this section, each reserve shall be held and administered for the purpose or purposes for which it is classified and for no other purpose”. In light of this definition, please provide an assessment of the provision of the proposed infrastructure works on reserve land, including the need for any easements required in favour of Watercare Services Limited, and any resulting adverse effects on the purpose of the reserve noting what it is classified for.*

As set out in Section 7.5.5 of the AEE, Point Erin Park is held in freehold by Auckland Council. That is, the Reserves Act 1977 does not apply to the land, and an assessment against the requirements of the Reserves Act is not appropriate or required.

11 Planning

- 52 *As indicated in on pages 61 and 62 of the AEE, engagement with mana whenua is on-going and with cultural values assessments (CVAs) to be provided by a number of mana whenua entities. Once the CVAs are received, please provide an effects assessment that takes into consideration, and responds so, all issues raised.*

Advice Note: This response can be combined with the response on question 30 noting that it will need to cover all relevant matters identified by mana whenua and not just those relevant to landscape and visual matters.

Copies of any CVAs received will be provided to Council once Watercare receives them from mana whenua partners, alongside an assessment detailing how the matters raised in the CVAs will be responded to. To date, Watercare has received CVAs from Te Ākitai Waiohū, and Ngaati Te Ata Waiohū. Watercare's initial response to the Te Ākitai Waiohū CVA is provided below. Ngaati Te Ata Waiohū's CVA was received on 14 April and Watercare is currently reviewing it. An initial response to the Ngaati Te Ata Waiohū CVA will be provided to Council in due course.

Engagement with other iwi has also been occurring consistent with the requirements of best practise, and in accordance with the expectations in the AUP and in the RMA. Similar areas of interest and concern have been raised at hui with other iwi. At least three other mana whenua partners have indicated they are interested in preparing a CVA for the Project. Watercare will continue to engage with mana whenua and will respond to any issues raised as the consenting process continues.

Watercare would be happy to offer conditions in response to any matters raised, and will be guided by mana whenua partners on whether they prefer to address matters through existing relationships or have particular matters formalised into conditions.

Te Ākitai Waiohū Cultural Values Assessment

Te Ākitai Waiohū have provided a CVA for the project to Watercare, and this has been reviewed and considered by Watercare.

The below table summarises the potential effects on cultural values arising from the project as identified in the CVA by Te Ākitai Waiohū, and Watercare's interim response to the issues raised⁴. The potential cultural effects are broken down into key themes as identified by Te Ākitai Waiohū; Participation; Acknowledgement; Iwi Monitoring and Water quality; Landscaping, Earthworks and Ecology; and Design. Watercare acknowledges that Te Ākitai Waiohū may have additional concerns, not encapsulated in that CVA.

Watercare will be engaging further with Te Ākitai Waiohū after lodgement to undertake a more detailed consideration of the proposed response to the matters raised in the CVA, and to understand whether any refinements to the project or the proposed conditions of consent might be required.

| Advocated action | Response |
|--|--|
| Participation | |
| The ongoing participation, consultation and involvement of Te Ākitai Waiohū must be ensured in all phases of the project moving forward, including communicating any changes to the project design | Watercare has committed to continuing to work with mana whenua partners, including Te Ākitai Waiohū throughout the project, including during the consenting, construction and reinstatement of the park. |

⁴ If other CVAs are provided by Mana Whenua, Watercare will undertake the same process with those groups.

| | |
|---|--|
| Provision for blessings (karakia) before commencement of earthworks, cultural inductions, involvement in pre-application discussions and accidental discovery protocols | Watercare will notify mana whenua prior to commencement of works to agree on a process to bless the site prior to commencement of work, ensure contractors are culturally inducted for the site works, and undertake cultural and archaeological monitoring during topsoil removal for site establishment in Point Erin Park. |
| Engagement with Te Ākitai Waiohū directly in addition to engagement through the Kaitiaki Forum | Watercare will continue to work directly with Te Ākitai Waiohū as well as engaging with all mana whenua partners through the existing Kaitiaki Managers' Forum and Cultural Outcomes Group. |
| The cultural, spiritual and historical values and relationships associated with the cultural landscape around Okā, including connections to other nearby Schedule 12 AUP sites and places of significance to mana whenua and the Waitemata harbour, are all recognised, protected and enhanced where possible | The project layout has been designed to avoid directly impacting on the mapped extent of scheduled sites of significance. |
| Acknowledgement | |
| Acknowledging Te Ākitai Waiohū as mana whenua and kaitiaki of the project area can be achieved through accurate 'historical' signage of landmarks and correct naming, as well as potentially incorporating Te Reo Māori dual language signs and wayfinders. | Watercare will work with Te Ākitai Waiohū and other mana whenua partners to identify appropriate opportunities for providing signage of landmarks and correct naming, as well as incorporating Te Reo Māori dual language signs and wayfinders. |
| Iwi monitoring and Water Quality | |
| Te Ākitai Waiohū recommends engaging and resourcing an iwi monitor nominated by the Kaitiaki Team to assist in the project and monitor earthworks to ensure any koiwi or archaeological items found are handled appropriately. | Watercare will invite Te Ākitai Waiohū and other mana whenua partners to monitor earthworks, and to provide feedback on accidental discovery protocols for the works. |
| Stormwater systems in place should maintain high treatment standards in relation to water quality and flow. | Watercare acknowledges the need to ensure that adverse environmental effects of its works are minimised. Measures to achieve this include implementation of the best practice approach to earthworks and sediment and erosion control, which is designed to minimise the generation of sediment and prevent the discharge of sediment laden water, thereby protecting water quality. Ultimately, the project will result in a significant reduction in the frequency and volume of network overflows. The reduction in the quantity of wastewater contaminants entering freshwater and the coastal environment contributes to the restoration of mauri of these environments and supports cultural well-being and health and safety. |
| The Kaitiaki Team strongly recommends minimizing adverse environmental effects to land or waterways now and in the future through prudent project design and exceeding minimum standards set by Auckland Council. | |
| The environment should be rehabilitated where possible to negate the impact of historical damage or any effects the project may have on the area. | Watercare will seek to work with mana whenua in the reinstatement of the park following completion of the work. There will be opportunities to incorporate and acknowledge the history of the area and cultural significance of sites in the reinstatement of the construction area. |

| | |
|---|--|
| Efforts should be made to keep fresh water and stormwater separate to maintain the mauri (life force) of the water, following the principles of Mauri Tu in emphasising the environmental health and life essence of the eco-systems in the project area. | The project will provide additional sewer capacity and network resilience within the local catchment and wider network, reducing wet weather wastewater overflow discharges. |
| Landscaping, earthworks and ecology | |
| Te Ākitai Waiohū recommends preserving the natural and cultural landscape in the project's design and maintenance, restoring or rehabilitating land to its historical or natural state where possible, meeting minimum earthworks standards, monitoring topsoil earthworks and disturbances, and following additional erosion and sediment control measures recommended by the Kaitiaki Team. | Watercare will work with Te Ākitai Waiohū and other mana whenua partners to identify opportunities to preserve or enhance the natural and cultural landscape of Point Erin and in particular Okā. Further discussions will be undertaken during detailed design and development of the landscape plans for the reinstatement of the park. Watercare acknowledges the need to ensure that adverse environmental effects of its works are minimised. Measures to achieve this include implementation of the best practice approach to earthworks and sediment and erosion control, which is designed to minimise the generation of sediment and prevent the discharge of sediment laden water, thereby protecting water quality |
| Develop a site-specific Cultural Management plan for Okā that includes processes of engagement beyond the existing CI Cultural Management plan that covers: a. cultural monitoring of topsoil stripping and other activities such as sediment control and tree removal; b. onsite cultural inductions; c. expression of tikanga and karakia | The CI project has a specific Cultural Management Plan developed under the guidance of the COG and with the wider Kaitiaki Forum membership. A number of procedures and initiatives give effect to the Cultural Management Plan including: <ul style="list-style-type: none"> • A process of engagement for cultural monitoring for topsoil stripping activities. • Cultural inductions. • Karakia for significant events (such as when the TBM entered/exited the Manukau Harbour section of its journey.) • Economic opportunities (such as establishing a commercial laundry business for CI PPE with the aim of expanding this business post project). Watercare is open to updating the Cultural Management Plan for the works at Point Erin in consultation with mana whenua partners |
| A works budget comparable to that allocated by Auckland Council Public Arts for other CI sites on public reserve land | The co-design project will be allocated appropriate funding to achieve project objectives. |
| Consider mana whenua attendance at pre-start meetings | Watercare will invite mana whenua to attend pre-start meetings as relevant. |
| Use native tree species where appropriate | Subject to landowner agreement, preference will be given for native trees for reinstatement planting wherever practicable, however, some exotic vegetation may be utilised in particular areas to supplement native plantings, where growing conditions may be unfavourable for native species or where rapid screening is required. |
| Retain trees 16 and 17 on site as two mature pōhutukawa | While the proposed location and design of the construction areas have sought to minimise the |

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| | need for any tree alteration or removal, effects on trees have not been able to be avoided completely, and trees 16 and 17 will need to be removed to facilitate the project. Watercare will collect seeds and cuttings from pōhutukawa that need to be removed and can provide these to mana whenua, and replacement plantings will be provided. |
| Adopt a tree replacement ratio of 8 trees for every tree removed where removal of vegetation cannot be avoided; | It may not be practicable to plant 72 trees in this location. Watercare will continue to work with Te Ākitai Waiohū and the intent of this recommendation may be able to be accommodated in other ways. |
| Retain any excavated whenua including earth and soil on site given the nature of the area as a historical pā and wāhi tapu; | If top soil is to be stored on site for the duration of the works and then reinstated at completion, a much larger construction site would be required to provide the storage space, with corresponding increased effects as a result of this. Watercare would welcome the opportunity to continue discussing this matter with Te Ākitai Waiohū. |
| Follow the recommendations in the CI Point Erin Landscape Assessment Report | Watercare has adopted the recommendations in the Landscape Assessment Report, and these are reflected in the proposed conditions of consent. |
| Develop a clear and comprehensive accidental discovery protocol for this project in a location where there is a fairly good chance of finding cultural heritage | Watercare acknowledges the cultural significance of this site and that, whilst the mapped extent of the site of significance has been avoided, the full extent of the pā site is unknown and it is important to appropriately acknowledge and recognise the spiritual and cultural significance of the wider landscape. Watercare proposes to prepare accidental discovery protocols in consultation with iwi and Heritage New Zealand Pouhere Taonga to ensure mana whenua-directed procedures are included. |
| Consider drafting key cultural consent conditions | Watercare would welcome the opportunity to discuss this aspect further with Te Ākitai Waiohū. The main Central Interceptor consents do not include specific cultural consent conditions. Cultural monitoring, inductions and karakia are completed as part of the project. |
| Develop a park reinstatement plan to ensure the park character is maintained which includes full consideration of: a. Replacement of any removed or relocated facilities such as footpaths and furniture; b. Recontouring landform and the materiality of retaining walls; c. Landscape treatment of grassed areas, mitigation planting and retaining walls; d. External appearance and design of the plant room and ventilation arrangement; e. Enhancement of Point Erin Park recreational and cultural values. | A park reinstatement plan will be developed in consultation with mana whenua and Auckland Council. Proposed key conditions of consent will ensure these matters are addressed as part of the reinstatement plan. |

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| Any archaeology and heritage general authority application that may affect Okā under section 44(a) of the Heritage NZ Pouhere Taonga Act 2014 should not be lodged without further discussion, consideration and resolution between mana whenua and the applicant | Watercare will provide a copy of the HNZPTA application to mana whenua prior to lodging it, providing an opportunity for mana whenua to provide feedback on the application. |
| Integrate cultural content with key management plans including park reinstatement, communications, construction management, tree management, groundwater and settlement, mitigation planting, park restoration and landscape. | Watercare supports this initiative. |
| The Kaitiaki Team also want to be engaged and have input into the final landscape strategy including location and selection of trees, enhancement planting, site enrichment and provision of natural cultural amenity. | Watercare will seek to work with mana whenua on the reinstatement of the park following completion of the work. There will be opportunities for mana whenua to exercise their kaitiakitanga through this process, and to incorporate and acknowledge the history of the area and cultural significance of sites in the reinstatement of the construction area |
| Design | |
| The design aspects of the project should incorporate Māori cultural values and concepts, including Māori colours, symbols, building materials, narratives, and storytelling. The Kaitiaki Team recommends integrating cultural elements that reflect the traditional significance of Okā and nearby associated sites within the broader cultural landscape. Only iwi can determine how Māori design principles are incorporated into the project, and the Kaitiaki Team must be engaged by the applicant for appropriate utilisation of design principles. | Watercare acknowledges and welcomes the provision of mana whenua expertise and advice on opportunities to incorporate Māori cultural values and concepts, including Māori colours, symbols, building materials, narratives, and storytelling into the design of the permanent above-ground infrastructure and the park reinstatement works. Watercare will work with mana whenua on the design to identify appropriate opportunities. |

53 *The following assessment is provided on page 65 of the AEE with respect to noise from sheet piling:*

A maximum noise level of 78 dB LAeq is predicted at 72 and 74 Curran Street which are located less than 25 m from the piling works. This external noise level would usually equate to an internal noise level 20-25 dB lower, i.e. 53-58 dB LAeq depending on the glazing and façade construction. An internal noise level less than 60 dB LAeq is unlikely to interfere with normal residential activities for short durations. The predicted maximum noise levels are only likely to occur when the sheet piling works is nearest to the receivers. These levels are anticipated to only occur for a relatively short period and intermittently within the total duration of the works.

High external noise levels for sheet piling are not uncommon for this type of works close to residential receivers and have been successfully managed on existing CI sites through the CNVMP and an ASCNMP, which includes industry standard practice for sheet piling mitigation and consultation with receivers around timing and duration.

In order to assist with the assessment of noise effects on these properties, please provide further details on what is meant by 'relatively short period' and 'intermittently' i.e., can they be

defined in a more definitive manner so as to allow for a more precise assessment on likely levels of adverse effects. Please also provide details on the methods that will be employed as part of 'industry standard practice for sheet piling mitigation'.

Based on experience at other CI sites, it is anticipated that if sheet piling is required, it will be undertaken for an estimated total of 30 days and up to a maximum of 60 days intermittently within the Project duration. As works move further from particular properties, noise levels will decrease.

- Mitigation will focus on effective communication with neighbours, and selection of appropriate equipment and methods. As detailed in the Noise and Vibration Assessment (appendix H2 of the AEE) industry standard practice for sheet piling mitigation will include:
 - Prior notification and consultation with neighbours prior to commencing sheet piling;
 - Managing times of sheet piling to avoid sensitive times where practicable (based on consultation with surrounding properties);
 - Selecting equipment and methodologies to minimise noise and vibration to the extent practicable; and
 - Monitoring of vibration during activities predicted to exceed the noise standards or 2 mm/s amenity limit.

The CI Project Team has considerable experience managing sheet piling in close proximity to neighbouring properties. The above mitigation measures have ensured a best practise approach such that there have not been any particular noise issues or complaints to date associated with sheet piling.

- 54 *The following assessment is provided on page 66 of the AEE with respect to noise from works outside of standard construction hours:*

Dewatering and overpumping for temporary diversions or connections into the existing network will require the use of pumps that may operate 24/7. Similarly shaft ventilation is likely to operate outside of standard hours. All of these noise sources are likely to be located over 100 m from the nearest residential dwelling, and with localised noise screening the resulting noise effects will be less than minor.

Please confirm if these works will result in exceedances of permitted noise standards. If so, please provide details along with any additional necessary assessment that specifically addresses adverse effects from the exceedances.

Based on existing CI data for overpumping and dewatering works, noise levels from generators and pumps can be mitigated to meet the night time noise limit of 45 dB LAeq at receivers less than 30 m away. As the dewatering pumps and shaft ventilation will be located over 100 m from the nearest residential dwelling, and with localised noise screening around the equipment, noise levels are not anticipated to result in any exceedances of the permitted noise standards.

- 55 *The following assessment is provided on page 66 of the AEE with respect to construction vibration effects:*

When sheet piling is occurring in the southwestern construction area, these three receivers are predicted to experience vibration levels above the 2 mm/s amenity level for short/intermittent periods when the piling is occurring.

As with question 53, please provide further detail on what is meant by 'short/intermittent periods' i.e., can it be defined in a more definitive manner so as to allow for a more precise assessment on likely levels of adverse effects.

As set out in the answer to Question 53 above, it is anticipated that if sheet piling is required, it will be undertaken for an estimated total of 30 days and up to a maximum of 60 days intermittently within the Project duration. As works move further from particular properties, vibration levels will decrease.

For sheet piling and subsequent excavations, three receivers at 70, 72 and 74 Curran Street are predicted to experience vibration levels above the 2 mm/s amenity level but under the 5 mm/s DIN 4150-3 threshold for cosmetic damage. Vibration levels of 2 mm/s may be perceivable by occupants and they may be disturbed by such occurrences, but based on experience with other construction projects vibrations at this level will generally be acceptable to receivers provided they have received prior warning (this is so that the receivers are not surprised or startled when the vibrations occur). Effects will be managed through consultation with the occupants prior to construction works starting and vibration monitoring as set out in response to Question 53.

We trust there is enough information to continue processing this application and proceed to a hearing. Should you have any questions regarding the above responses, please contact Rachel Signal-Ross (RSignal-Ross@tonkintaylor.co.nz).

Yours sincerely



Rachel Signal-Ross
Senior Planner



Karen Baverstock
Project Director

19-Apr-23
Compiled s92 questions 19.4.23 post PD reviewclean.docx

Appendix A Updated proposed key conditions of consent

Appendix A - Proposed Key Conditions – Section 92 set

Notes:

The effects of the proposed Point Erin Tunnel project are well understood as a result of the existing work that has occurred to date on CI. The conditions of consent proposed below are informed by practical on-the-ground experience gained through the CI project to date and have proven to be effective at managing effects while also providing sufficient flexibility for the contractor.

The proposed conditions are based on the CI and Grey Lynn Tunnel consent conditions previously approved by Auckland Council, subject to changes to reflect current practice for condition drafting, experience from CI and implementation of the CI conditions, and specific matters relevant to the Project location particularly for the works in Point Erin Park.

The proposed conditions are intended to provide a project-specific key condition set. Watercare expects that there will be standard and administrative type conditions, along with additional other conditions, Auckland Council considers are required.

[This is the Section 92 condition set – changes since lodgement are shown in track.](#)

A. General conditions

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| 1 | Except as modified by the conditions below and subject to final design, the works shall be undertaken in general accordance with the plans and information submitted with the application, including the Central Interceptor – Point Erin Tunnel Assessment of Effects on the Environment (AEE) prepared by Tonkin & Taylor Ltd dated February 2023 and Appendices to the AEE. <i>[Appendices to be listed]</i> |
| 2 | The consent shall lapse on the expiry of a period of ten (10) years after the date on which the last of any appeals on the consent are determined or withdrawn, or if no appeals are lodged, the date on which the consent is granted in accordance with Section 104 of the RMA. <i>Advice note: An extension to the lapse date specified above is subject to the provisions of Section 125 (1A) of the RMA.</i> |
| 3 | Detailed drawings and design At least twenty (20) working days prior to commencement of works, the Consent Holder shall submit detailed engineering design plans for the Project, or for that stage of the Project works, to the Council. |

B. Construction phase consent conditions

| Community Liaison and Communications | |
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| 4 | A liaison person shall be appointed by the Consent Holder 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 construction work. The liaison person's name and contact details shall be advised to affected parties by the Consent Holder. 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 |

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| | contact person is available by telephone 24 hours per day seven days per week during the construction phase. |
| 5 | <p>The Consent Holder shall prepare a Communications Plan (CP) for the construction phase of the Project or for each Project stage. The CP shall be submitted to the Council no less than twenty (20) working days prior to works commencing for certification that the CP complies with the requirements of Condition 6.</p> <p><i>Advice note: "Project stage" means a separable part of the Project by activity, programme or location/geographic extent (e.g. tunnelling, terminal shaft construction, control chamber construction, TBM removal).</i></p> |
| 6 | <p>The objective of the CP is to set out a framework to ensure appropriate communication is undertaken with key stakeholders during the construction phase of the Project. The CP shall set out:</p> <ul style="list-style-type: none"> (a) the method(s) of consultation and liaison with key stakeholders and the owners/occupiers of neighbouring properties regarding the likely timing, duration and effects of works. This shall include the method(s) to ensure affected properties are notified of noisy activities prior to works commencing; (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 from any construction; (c) full contact details for the person appointed in accordance with Condition 4 to manage the public information system and be the point of contact for related enquiries. |
| Construction Management | |
| 7 | <p>The Consent Holder shall prepare a Construction Management Plan (CMP) for the Project or for each stage of the Project (e.g. tunnelling works, terminal shaft construction and control chamber construction). The purpose of the CMP 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 consent that relate to the matters referred to in Condition 8 (a) to (l) below. The CMP shall be submitted to Auckland Council no less than twenty (20) working days prior to works commencing on the Project or stage of the Project (as relevant) for certification that the CMP complies with the requirements of Condition 8 as applicable.</p> |
| 8 | <p>The CMP required by Condition 7 above shall include specific details relating to the management of all construction activities associated with the relevant Project stage, including:</p> <ul style="list-style-type: none"> (a) Details of the site or project manager and the construction liaison person identified in Condition 4 including their contact details (phone, postal address, email address); (b) An outline construction programme; (c) The proposed hours of work; (d) Measures to be adopted to maintain the land affected by the works in a tidy condition in terms of disposal / storage of rubbish, storage and unloading of construction materials and similar construction activities; (e) Location of site infrastructure including site offices, site amenities, contractor's yards site access, equipment unloading and storage areas, contractor car parking, and security; |

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| | <ul style="list-style-type: none"> (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; (g) Procedures for ensuring that residents, road users, park users and businesses (including Community Leisure Management (CLM) which manages the Point Erin Pool) 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 Conditions 31 and 32; (i) Procedures for the management of works which directly affect or are located in close proximity to existing network utility services (note: this requirement does not apply to the Consent Holder's infrastructure or where written approval has been obtained from the relevant network utility operator); (j) A mechanism and nominated stakeholder manager responsible for receiving, addressing and monitoring queries and responding to complaints in relation to the construction works; (k) Procedures for the refuelling of plant and equipment; (l) Measures for the protection and management of trees as identified in Conditions 39 and 40. |
| 9 | The CMP shall be implemented and maintained by the Consent Holder 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 for certification prior to being implemented. |
| Construction hours | |
| 10 | <p>Construction hours shall be as follows, except where work is necessary outside the specified days or hours for the purposes specified in Condition 11 below.</p> <ul style="list-style-type: none"> (a) Tunnelling activities - 24 hours a day, 7 days a week operations for all tunnelling activities; (b) General site activities - 7 am to 6pm, Monday to Friday, 8am to 6pm Saturday; and (c) Truck movements - 7am to 6pm, Monday to Friday, 8am to 6pm Saturday. |
| 11 | <p>Work may occur outside of the specified days or hours set out in Condition 10 for the following purposes:</p> <ul style="list-style-type: none"> (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 (e.g. to tie into the existing network during period of low flow or for commissioning sewer connections); (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 |

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| | <p>(f) for any other reason specified in the CMP or CTMP.</p> <p>Where any work is undertaken pursuant to (a) to (f) above, the Consent Holder shall, within five (5) working days of the commencement of such work, provide a report to Council detailing how the work was authorised under those provisions.</p> <p>Activities such as dewatering during excavation and concrete pours may be undertaken outside of the specified days or hours subject to meeting the noise limits specific in Condition 24 (or as otherwise provided for through an ASCNVMP required by Condition 25).</p> |
| <p>Earthworks</p> <p><i>Note: It is anticipated that Auckland Council will include a full suite of standard earthworks conditions. The below proposed conditions are intended to provide a key condition set.</i></p> | |
| 12 | <p>At least ten (10) working days prior to the commencement of any earthworks at the site authorised by this consent, the Consent Holder must submit a final Erosion and Sediment Control Management Plan (ESCP) for certification by the Council. No earthworks activities shall commence until the ESCP has been certified. Any subsequent amendments to the certified ESCP(s) and/or methodology must be provided to the Council at least ten (10) working days prior to the proposed amendment and certified prior to any such amendment being implemented.</p> |
| 13 | <p>The objective of the ESCP shall be to set out the methods and techniques and management procedures and protocols for controlling the potential for erosion and sediment runoff as a consequence of earthworks. The ESCP must be prepared by a suitably qualified and experienced practitioner in accordance with Auckland Council Guidance Document, Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Guideline Document 2016/005 (GD05) and the draft ESCP referenced in Condition 1.</p> |
| 14 | <p>The ESCP shall include the following information:</p> <ul style="list-style-type: none"> (a) Timing and duration of construction and operation of control works; (b) Specific erosion and sediment control works (location, dimensions, capacity) in accordance with GD05, including staging details (where relevant) and specific erosion and sediment controls. Erosion and sediment controls are to include: <ul style="list-style-type: none"> a. stabilised site accesses b. clean water diversion around the construction areas to reduce the contributing catchment to the exposed working areas; c. silt fences and super silt fences; d. stabilised construction area platform surface; e. wheel wash facility at the site exit (as a contingency/if required); f. progressive stabilisation of works area as required; and g. the removal of stripped topsoil and surplus excavated material from site. (c) Supporting calculations and design drawings; (d) Catchment boundaries and contour information; (e) Provision for regular inspection and maintenance of ESC measures to maximise the sediment retention efficiency of the site; and (f) Specific dust control measures (where required) in accordance with the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions, MfE |

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| | (2016) and the Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region – GD05, Auckland Council (2016). |
| 15 | All perimeter controls shall be operational before bulk earthworks commence. All cleanwater runoff from stabilised surfaces including catchment areas above the construction areas shall be diverted away from earthworks areas via a stabilised system so as to prevent surface erosion. |
| 16 | At least ten (10) working days prior to the commencement of earthworks at the site, a Chemical Treatment Management Plan (ChTMP) shall be submitted to the Council for certification. The objective of the ChTMP is to set out the management methods, controls and reporting standards to be implemented relating to the chemical treatment of the water treatment devices. For the avoidance of doubt, the ChTMP can be prepared as a standalone plan or as part of the ESCP required by Condition 12 above. |
| 17 | To prevent discharge of sediment-laden water or other debris into any public stormwater drainage systems or watercourses and therefore into receiving waters, and to prevent nuisance and amenity impacts on users of the road reserve, there shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the site. In the event that such deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters. |
| 18 | The Consent Holder shall ensure that all excavation, dewatering systems, retaining structures and associated works for the construction of the chamber, shafts, tunnels, underground structures and associated works, including all temporary and permanent works, are designed, constructed and maintained to avoid, as far as practicable, any damage to buildings, structures and services (including road infrastructure assets such as footpaths, curbs, catch-pits, pavements and street furniture). |
| 19 | The Consent Holder shall ensure that all discharges from dewatering activities, wheel washes and other occasional construction site related discharges are treated to an appropriate standard prior to discharge to either land or stormwater drainage systems or other receiving waters. |
| Unexpected Contamination | |
| 20 | In the event of the accidental discovery of contamination during earthworks which has not been previously identified, including asbestos material, the consent holder must immediately cease the works in the vicinity of the contamination, notify the council, and engage a suitably qualified and experienced contaminated land practitioner (SQEP) to assess the situation (including possible sampling and revision of the ESCP) and decide on the best option for managing the material. |
| Construction Lighting | |
| 21 | Construction lighting shall be minimised to the extent practicable and shall meet the relevant permitted standards in Chapter E24 of the Auckland Unitary Plan. |
| Construction Noise and Vibration | |
| 22 | The Consent Holder shall prepare a Construction Noise and Vibration Management Plan (CNVMP) for the Project, or each stage of the Project, that addresses the management of construction noise and vibration from the works. The CNVMP shall be submitted to the Council no less than twenty (20) working days prior to works on that stage commencing for certification by Council that the CNVMP complies with the requirements of Conditions 23 to 29, as applicable. |

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| | <p>The objectives of the CNVMP are to:</p> <ul style="list-style-type: none"> (a) Identify the Best Practicable Option (BPO) for the management and mitigation of construction noise and vibration effects. (b) Identify how Project noise and vibration limits will be met and set out the methods for scheduling and undertaking works to manage disruption. (c) Ensure engagement with affected receivers and timely management of complaints. |
| 23 | <p>The CNVMP shall be prepared by a suitably qualified and experienced practitioner and shall set out, as a minimum:</p> <ul style="list-style-type: none"> (a) The relevant construction noise and vibration criteria/limits set out in these conditions; (b) Description and duration of the works, predicted construction noise and vibration levels, anticipated equipment and hours of operation (including specific times and days when construction activities causing noise/vibration would occur); (c) The processes to be undertaken including general acoustic management and mitigation measures proposed to be implemented throughout the course of the Project consistent with best practice and the triggers or thresholds for implementing them (if relevant); (d) Physical noise mitigation measures, including prohibiting the use of tonal reverse alarms, maintenance of access roads (to ensure they are smooth), plant selection and maintenance procedures, orientation of plant and machinery, and site layout. Physical noise mitigation measures shall also include the following, as required to ensure a BPO approach to the management of noise: setting minimum setback distances from sensitive receivers (dwellings); acoustic screening of the control chamber construction area and shaft site construction area; and/or pre-drilling of pile locations; (e) The identification of activities (e.g. sheet piling, tree chipping, out of hours concrete pours, night works) and locations that will require specific noise mitigation measures (including scheduling of works, location and orientation of works and/or the use of temporary acoustic barriers e.g. for tree chipping or night works), consultation undertaken with affected properties to develop the proposed noise management measures, any feedback received from those stakeholders along with the noise management measures that will be adopted based on this consultation; (f) Identification of any activities particularly sensitive to vibration and noise in the vicinity of the proposed works (e.g. Stebbing Recording Centre located at 108/114 Jervois Road, Herne Bay) along with the details of consultation with the land owner(s) of the sites where the sensitive activities are located and any management measures that will be adopted, where required, based on this consultation; (g) Details of noise and vibration monitoring to be undertaken and reporting requirements. (h) Communication requirements with stakeholders including notice to owners and occupiers of adjacent buildings prior to construction activities commencing on the site; (i) A complaint management system with contact numbers for key construction staff responsible for the implementation of the CNVMP and complaint investigation. (j) The process for changing, updating, and certifying any changes to the CNVMP; and (k) Training procedures for construction personnel. <p>The CNVMP shall be implemented and maintained by the Consent Holder throughout the construction period for the Project or relevant Project stage to manage potential adverse noise and vibration effects arising from construction activities. The CNVMP or any specific component of the CNVMP shall be updated as necessary and provided to the Council for certification prior to being implemented.</p> |

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Construction noise shall be measured and assessed in accordance with NZS6803:1999 *Acoustics – Construction Noise*, and shall comply with the following ~~AUP~~ noise limits except where authorised by an ASCNVMP (Condition 25):

| Time of week | Time Period | Maximum noise level (dBA) | |
|-----------------------------|-----------------|---------------------------|------------------|
| | | L _{eq} | L _{max} |
| Weekdays | 6:30am - 7:30am | 60 | 75 |
| | 7:30am - 6:00pm | 75 | 90 |
| | 6:00pm - 8:00pm | 70 | 85 |
| | 8:00pm - 6:30am | 45 | 75 |
| Saturdays | 6:30am - 7:30am | 45 | 75 |
| | 7:30am - 6:00pm | 75 | 90 |
| | 6:00pm - 8:00pm | 45 | 75 |
| | 8:00pm - 6:30am | 45 | 75 |
| Sundays and public holidays | 6:30am - 7:30am | 45 | 75 |
| | 7:30am - 6:00pm | 55 | 85 |
| | 6:00pm - 8:00pm | 45 | 75 |
| | 8:00pm - 6:30am | 45 | 75 |

Advice note:

~~i. These limits are contained in Table E25.6.27(1) of the AUP and modified by Standard E25.6.27(4).~~

ii. Project construction hours are subject to Condition 10.

24A

~~Between 22:00 and 07:00 regenerated noise from tunnelling activities shall not exceed 35 dB LAeq(15 min) within occupied buildings except where authorised by an ASCNVMP (Condition 25).~~

25

An Activity Specific Construction Noise and Vibration Management Plan (ASCNVMP) shall be prepared for works predicted to exceed the project construction noise or vibration limits. For the avoidance of doubt, an ASCNVMP may be a separate management plan or may be included as a section in the CNVMP or otherwise appended to the CNVMP.

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In preparing an ASCNVMP, the Consent Holder shall consult with those parties likely to be exposed to noise levels exceeding the relevant noise limit(s) and shall submit the results of this consultation to Auckland Council, including any response by the Consent Holder to a matter raised in consultation. The ASCNVMP(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 ASCNVMP(s) shall not commence until approval is received from the Council. If monitoring shows that levels specified in an ASCNVMP are being exceeded, work generating the exceedance shall stop and not recommence until further mitigation is implemented in accordance with an amended ASCNVMP approved by the Council.

An ASCNVMP must:

(a)

describe the activity (including duration), plant and machinery that is expected not to comply with the noise limits in Condition 24;

(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 24, including the effect of mitigation specified in (b) above;

(d)

provide a set of noise limits that are Activity – Specific;

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| | <p>(e) describe the noise monitoring that will be undertaken to determine compliance with the Activity – Specific noise limits; and</p> <p>(f) describe any additional noise mitigation measures that may be implemented to maintain compliance with Activity Specific noise limits.</p> <p>Note: It is accepted that the noise limits in Condition 24 may not be met at all times, but that the Consent Holder will adopt the Best Practicable Option to achieve compliance.</p> | | | | | | | | | | | |
| 27 | An ASCNVMP shall be submitted to Auckland Council no less than seven (7) working days prior to works on that stage commencing for certification that the ASCNVMP complies with the requirements of Conditions 25 and 26, as applicable. | | | | | | | | | | | |
| 28 | Construction activities shall comply with the Guideline vibration limits set out in the German Industrial Standard DIN 4150-3 (1999) Structural Vibration – Part 3 Effects of Vibration on Structures (DIN 4150). | | | | | | | | | | | |
| 29 | <p>All tunnelling and construction works must be designed and undertaken to ensure that vibration from the Project does not exceed the following vibration limits in buildings (amenity values):</p> <table><tr><td>Receiver</td><td>Period</td><td>Peak Particular Velocity (PPV) mm/s</td></tr><tr><td rowspan="2">Occupied activity sensitive to noise</td><td>Night-time 10 pm to 7 am</td><td>0.3 mm/s</td></tr><tr><td>Day-time 7 am to 10 pm</td><td>2.0 mm/s</td></tr><tr><td>Other occupied buildings</td><td>At all times.</td><td>2.0 mm/s</td></tr></table> <p>Note: Works generating vibration for three days or less between the hours of 7 am to 6 pm may exceed these limits subject to compliance with Condition 28 and provided that all occupied buildings within 50 m of the extent of the works generating vibration are advised in writing no less than three days prior to the vibration-generating works commencing. The written advice must include details of the location of the works, the duration of the works, a phone number for questions and complaints and the name of the site manager.</p> <p><i>Advice note: These limits are contained in Table E25.6.30.1 of the AUP.</i></p> | Receiver | Period | Peak Particular Velocity (PPV) mm/s | Occupied activity sensitive to noise | Night-time 10 pm to 7 am | 0.3 mm/s | Day-time 7 am to 10 pm | 2.0 mm/s | Other occupied buildings | At all times. | 2.0 mm/s |
| Receiver | Period | Peak Particular Velocity (PPV) mm/s | | | | | | | | | | |
| Occupied activity sensitive to noise | Night-time 10 pm to 7 am | 0.3 mm/s | | | | | | | | | | |
| | Day-time 7 am to 10 pm | 2.0 mm/s | | | | | | | | | | |
| Other occupied buildings | At all times. | 2.0 mm/s | | | | | | | | | | |
| 30 | <p>If measured or predicted vibration exceeds the limits set out in Condition 29 the Consent Holder must consult with the occupants to:</p> <p>(a) Discuss the nature of the work and the anticipated days and hours when the exceedances are likely to occur.</p> <p>(b) Determine whether the exceedances could be timed or managed to reduce the effects on the receiver.</p> <p>(c) Provide in writing, no less than three (3) days before the vibration-generating works begin, details of the location of the works, the duration of the works, a phone number for questions and complaints, and the name of the liaison person (Condition 4).</p> <p>The Consent Holder must maintain a record of the consultation and provide this to the Council upon request.</p> <p><i>Advice note: Vibration amenity limits do not apply at any dwelling that is not occupied during the works. This allows high vibration works to be scheduled when residents are not home, subject to compliance with Condition 28 and compliance with amenity controls at other nearby dwellings that are occupied.</i></p> | | | | | | | | | | | |

Traffic management

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| 31 | <p>The Consent Holder shall submit a Construction Traffic Management Plan (CTMP) to Council at least twenty (20) working days prior to the commencement of Project works at Point Erin Park. No construction activity shall commence until certification is provided from Council that the CTMP satisfactorily gives effect to the objectives set out below, and complies with the requirements in Conditions 32 to 34.</p> <p>The objectives of the CTMP are to:</p> <ul style="list-style-type: none"> (a) Ensure construction traffic movements on the transport network, including Sarsfield Street, Curran Street and the SH1 onramp, are appropriately managed; (b) Provide for the safety of everyone at all times; (c) Minimise disruption and maintain pedestrian and vehicle access to/from surrounding residential properties and Point Erin Park including Point Erin Pool, carpark and playground; (d) Minimise disruption from construction traffic on the travelling public and road users along the identified sections of the construction routes; (e) Seek to avoid full road closures and minimise any partial or managed closures; (f) Manage integration with other construction projects and Auckland Transport projects. |
| 32 | <p>The CTMP shall be prepared by a suitably qualified and experienced traffic expert and in accordance with the Council's requirements for traffic management plans or CTMPs (as applicable) and New Zealand Transport Authority's Code of Practice for Temporary Traffic Management and must set out, as a minimum:</p> <ul style="list-style-type: none"> (a) Traffic management measures to be implemented; (b) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses; (c) Construction traffic routing; (d) The design of the access roads and vehicle crossings; (e) Methods to manage the effects of the delivery of construction material, plant and machinery. This shall include, but not be limited to: <ul style="list-style-type: none"> • ensuring heavy vehicles access the south-western construction area via Shelly Beach Road and Sarsfield Street and a right turn into the construction area (i.e. not via Curran and Sarsfield Streets / no left turn into the construction area); • traffic management measures, including a site Traffic Management Supervisor: <ul style="list-style-type: none"> – to ensure the safe movement of construction vehicles on Sarsfield Street and the Pool access road, to manage any potential effects, and to ensure the safe access of cars, cyclists, pedestrians, service trucks and emergency vehicles accessing the Pool and public carpark; – to ensure safe ingress from Sarsfield Street to the southwestern construction area and safe egress onto Curran Street; – to ensure construction vehicles can negotiate access and egress to avoid any additional queueing on the adjacent road network during congested peak periods and to ensure a suitable truck layover area is provided if required. (f) Measures to maintain existing vehicle access to property where practicable, or to provide alternative access arrangements; (g) Measures to maintain pedestrian and cyclist movements adjacent to and through Point Erin Park and measures to reduce the impact on mobility impaired users on roads and footpaths adjacent to the construction works. Where the works impact on existing pedestrian or cycle ways, alternative temporary accessways shall be provided where practicable in accordance with Condition 37. Such access shall be safe, clearly identifiable and seek to minimise significant detours. |

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| | <p>(h) Provision for construction staff and visitor parking on site as far as practicable;</p> <p>(i) Proposed traffic volumes and movements associated with works outside the usual construction hours specified in Condition 11 and associated management and mitigation measures to be implemented.</p> <p>(j) A construction driver education programme (due to the proximity of the Point Erin Pool, carpark and playground);</p> <p>(k) Measures to communicate traffic management measures throughout construction activities (note: these measures may form part of the CP required by Condition 5).</p> <p><u>(l) 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.</u></p> <p><u>(m) Measures to manage and/or supervise the egress of vehicles onto Curran Street.</u></p> <p><u>(n) Measures to manage traffic on the Shelly Beach Rd off-ramp if appropriate/required.</u></p> |
| 33 | <p>The Consent Holder shall consult with the landowner (Auckland Council) and CLM to confirm measures to manage parking and ensure access is maintained for Pool maintenance and operational vehicles, emergency vehicles, and construction traffic during peak parking demand periods for the Point Erin Pool, how these measures will be implemented and the party responsible for implementing any measures identified.</p> |
| 34 | <p>Access for all vehicles to the south western construction area shall be via a one-way system entering from the Sarsfield Street access and exiting from the Curran Street access. The design of the access and vehicle crossing on Curran Street shall ensure it does not affect the effective, efficient and safe operation of the Curran Street SH1 onramp.</p> |
| 35 | <p>The temporary and permanent vehicle crossings from the south western construction area onto Curran Street shall be designed to meet minimum sight distance requirements of the Safe Intersection Sight Distance (SISD) requirements set out in '<i>Austroad (2009). Guide to Road Design Part 4A: Unsignalised and Signalised Intersections. Sydney</i>'.</p> |
| 36 | <p>The Consent Holder shall ensure the construction areas in Point Erin Park are cordoned off/fenced to ensure public safety.</p> |
| 37 | <p>The Consent Holder shall install construction site fencing to prevent pedestrians using the section of footpath on Sarsfield Street between Curran Street and the site ingress.</p> <p>Prior to the temporary closure of the existing footpath through the south-western corner of Point Erin Park, the Consent Holder shall:</p> <ul style="list-style-type: none"> (a) provide temporary pedestrian access through the Park to the east of the construction area and wayfinding signs to direct pedestrians to the temporary route and an existing accessible route in the south eastern corner of the Park. (b) undertake temporary improvements on the north side of Sarsfield Street for pedestrians to cross Sarsfield Street. This shall include the provision of a dropped kerb and tactile paving, a short section of surfacing in the berm, and a temporary parking restriction in the immediate area. <p>These shall be maintained for the duration of the construction works. Once construction works are completed, the closed footpath through the south-western corner of Point Erin Park and the section of footpath on the northern side of Sarsfield Street shall be reinstated.</p> <p><i>Advice note: These requirements are subject to landowner and asset manager approvals.</i></p> |
| 38 | <p>All construction traffic shall be managed at all times in accordance with the certified CTMP.</p> |

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| Tree management | |
| 39 | <p>The Consent Holder shall provide details in the CMP (required by Condition 7) as to how the potential impacts of construction on trees and vegetation will be managed and minimised. The details shall provide for the:</p> <ul style="list-style-type: none"> (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 or rootzone of such trees as identified by a suitably qualified and experienced arborist. (c) Temporary tree protection fencing which must remain in place for the duration of the works for the Project or relevant Project stage. (d) Procedures for undertaking the works under the supervision of a suitably qualified and experienced arborist including works within the dripline or rootzone of trees and the installation of the temporary fencing. |
| 40 | <p>All works shall be undertaken in accordance with the Tree Protection Methodology set out in Appendix A of the Arboricultural Report referenced in Condition 1. All tree removal and pruning shall be undertaken by a suitably qualified and experienced arborist, with all work carried out in accordance with currently accepted arboricultural techniques (e.g., Arb Australia and NZ Arb Minimum Industry Standard MIS308).</p> |
| 41 | <p>Within thirty (30) working days following completion of works on the site, the Consent Holder must supply a completion report to Council. The report must be prepared by a suitably qualified and experienced arborist. The completion report must confirm (or otherwise) that the works have been undertaken in accordance with the tree protection measures contained within the Arboricultural Report referenced in Condition 1 and subject to the specific tree protection measures identified in accordance with Conditions 39 and 33 above.</p> |
| Cultural | |
| 42 | <p><i>[To be developed in consultation with mana whenua and in response to forthcoming cultural values assessments]</i></p> |
| Archaeology and heritage | |
| 43 | <p>The Consent Holder must engage a suitably qualified and experienced archaeologist to give advice on work undertaken on the site in Point Erin Park including monitoring preliminary earthworks. The names and qualifications of this specialist must be provided to the Council prior to earthworks commencing.</p> <p><i>Advice note:</i></p> <p><i>The Heritage New Zealand Pouhere Taonga Act 2014 (hereafter referred to as the Act) provides for the identification, protection, preservation and conservation of the historic and cultural heritage of New Zealand. All archaeological sites are protected by the provisions of the Act (section 42). It is unlawful to modify, damage or destroy an archaeological site without prior authority from Heritage New Zealand Pouhere Taonga. An Authority is required whether or not the land on which an archaeological site may be present is designated, a resource or building consent has been granted, or the activity is permitted under Unitary, District or Regional Plans.</i></p> <p><i>It is the responsibility of the Consent Holder to consult with Heritage New Zealand Pouhere Taonga about the requirements of the Act and to obtain the necessary authorities under the Act should these become necessary, as a result of any activity associated with the consented proposals. For</i></p> |

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| | <p>information please contact the Heritage New Zealand Pouhere Taonga Archaeologist - 09 307 0413 / archaeologistMN@historic.org.nz.</p> |
| 44 | <p>If any archaeological sites, including human remains are exposed during site works then the following procedures shall apply:</p> <ul style="list-style-type: none"> (a) Immediately after it becomes apparent that an archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease. (b) The Consent Holder shall immediately secure the area so that any artefacts or remains are untouched. (c) The Consent Holder shall notify mana whenua, the Heritage New Zealand Pouhere Taonga and the Council (and in the case of human remains, the New Zealand Police) as soon as practicable, and advise those parties that an archaeological site has been exposed so that appropriate action can be taken. Works shall not recommence in the immediate vicinity of the archaeological site until approval is obtained from the Heritage New Zealand Pouhere Taonga. <p><i>Advice note: Should earthworks on the site result in the identification of any previously unknown archaeological site, including any archaeological artefact, koiwi or taonga, the Land Disturbance – Regional Accidental Discovery rule [E12.6.1] set out in the AUP(OP) apply.</i></p> |
| <p>Groundwater and settlement</p> <p><i>The below proposed conditions are intended to provide key conditions to inform the application. It is anticipated that Auckland Council will impose further standard groundwater conditions, including monitoring requirements, similar to the Grey Lynn Tunnel conditions.</i></p> | |
| 45 | <p>Monitoring and Contingency Plan</p> <p>The Consent Holder shall, before Commencement of Dewatering, prepare a Monitoring and Contingency Plan (M&CP) addressing groundwater and settlement monitoring for each of the relevant Project stages. This includes a draft and final M&CP as required by Condition 46.</p> <p>The M&CP shall demonstrate how the conditions of this consent will be implemented and shall include the following:</p> <ul style="list-style-type: none"> (a) details of the groundwater monitoring programme; (b) details of the ground surface settlement and building movement monitoring required; (c) details of the building risk assessment process and building condition surveys process; (d) a location plan of settlement and building deformation marks and the location of existing and proposed groundwater monitoring bores. (e) details of the shaft and control chamber 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) details on the procedures for notification of the Manager in the event that Trigger Levels are exceeded; (h) options for additional investigations and analyses to determine the potential for groundwater effects or settlement and for damage to structures, including additional groundwater or settlement monitoring and building condition surveys; and |

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| | <p>(i) details of the contingency measures to be implemented in the event of Trigger Levels being exceeded, including details on the practicable methodologies to avoid, remedy, or mitigate surface settlements with the potential to cause damage to buildings.</p> <p><i>Advice note:</i></p> <p><i>'Commencement of Dewatering' means commencement of bulk excavation and/or commencing taking any groundwater from a chamber/shaft or tunnel excavation.</i></p> |
| 46 | <p>The Consent Holder shall submit to the Auckland Council for certification:</p> <p>(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 6 months prior to the Commencement of Dewatering for chamber excavations/shaft sinking or tunnelling of any Project stage; and</p> <p>(b) the final M&CP. This shall be provided at least 20 working days prior to Commencement of Dewatering for chamber excavations/shaft sinking or tunnelling of any Project stage.</p> |
| 47 | <p>The Consent Holder shall comply with the M&CP at all times.</p> <p>The Consent Holder may amend the M&CP from time to time, as necessary for the Project or any Project stage. Any amendments to the M&CP must be certified by Auckland Council prior to any such amendment being implemented.</p> |
| 48 | <p>Risk Assessment</p> <p>The Consent Holder shall undertake a risk assessment to identify existing buildings and structures at risk of damage due to settlement caused by shaft sinking and chamber excavations, or tunnelling activities. The risk assessment process shall be set out in the M&CP required by Condition 45 and shall be based upon the final tunnel alignment and construction methodology of the tunnel and chamber/shaft excavations, the groundwater and settlement monitoring required under this consent, and groundwater and settlement modelling completed using this data. The risk assessment shall include:</p> <p>(a) identification of the zone of influence where differential settlements of greater (steeper) than 1:1,000 are predicted due to chamber excavations/shaft sinking or tunnelling activities;</p> <p>(b) identification of the building types in this zone, and their susceptibility to settlement induced damage; and</p> <p>(c) identification of the buildings and structures at risk of damage due to chamber excavations/shaft sinking or tunnelling activities.</p> |
| 49 | <p>A schedule of the addresses of existing buildings and structures identified as being potentially at risk of damage through the risk assessment process defined in Condition 48 shall be included in the M&CP required by Condition 45 (Note: this requirement does not apply to the Consent Holder's infrastructure or where written approval has been obtained from the relevant network utility operator).</p> |
| 50 | <p>Pre-construction condition survey</p> <p>The Consent Holder shall consult with owners of existing buildings and structures identified through the building risk assessment process defined in Condition 48, 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</p> |

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| | <p>Commencement of Dewatering of any Project stage involving shaft sinking and chamber excavation, 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.</p> <p>The survey shall include but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> (a) major features of the buildings and site developments, including location, type, construction, age and existing condition; (b) type and capacity of foundations; (c) existing levels of aesthetic damage; (d) existing level of structural distress or damage; (e) assessment of structural ductility; (f) susceptibility of structure to movement of foundations, including consideration of the local geological conditions. |
| 51 | <p>Post-construction condition surveys</p> <p>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, chamber excavation or tunnelling, undertake a post construction survey of buildings identified in accordance with Condition 48.</p> <p>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 Auckland Council 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.</p> <p><i>Advice note:</i></p> <p><i>'Completion of Dewatering' means when all the permanent chamber and 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 chamber/shaft/tunnel, in accordance with the design.</i></p> |
| 52 | <p>Additional condition surveys</p> <p>The Consent Holder shall, at the direction of Auckland Council, 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 50, 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, chamber excavation or tunnelling.</p> |
| 53 | <p>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). A copy is also to be made available to Auckland Council upon request (unless the property owner(s) has instructed the Consent Holder not to do so).</p> |
| 54 | <p>The building condition surveys required by this consent shall be undertaken by an independent and suitably qualified and experienced practitioner. When requested in writing by Auckland Council, the Consent Holder provide the contact details and qualifications of this person within five working days.</p> |
| 55 | <p>Repair of damage</p> |

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| | <p>If the exercise of this consent causes any unforeseen damage to buildings, structures or services not assessed under Conditions 50 and/or 52, the Consent Holder shall notify Auckland Council as soon as practicable, and provide in writing to the Auckland Council 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.</p> <p><i>Advice note:</i></p> <p><i>Unforeseen damage - means damage to buildings and structures that has occurred outside the area identified as the zone of influence under Condition 48 or to buildings or structures that are located within the zone of influence but were not considered to be at risk at the time of the approval of the M & CP.</i></p> |
| 56 | <p>Settlement and Deflection Monitoring</p> <p>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.</p> <ol style="list-style-type: none"> The locations of the monitoring marks shall be identified on a plan within the draft M&CP, as required under Condition 45 (note: this shall reflect the draft monitoring plans provided as Appendix F to the Groundwater Assessment referenced in Condition 1); The locations and number of monitoring marks shall be sufficient to provide a reliable basis for assessing, monitoring and responding to settlement risk during chamber/shaft and tunnel construction work, and for confirming compliance with the limits set out in the M&CP. |
| 57 | <p>Prior to the Commencement of Dewatering of any Project stage involving chamber/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.</p> <p><i>Advice Note:</i></p> <p><i>'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.</i></p> <p><i>'Alarm Level' is the Differential and Total Settlement Limit set in Condition 58, 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.</i></p> |
| 58 | <p>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 or as otherwise identified in accordance with Condition 57 and set out in the approved GSMCP.</p> <ol style="list-style-type: none"> 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 |

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| | (b) greater than 50 mm total settlement (the Total Settlement Alarm Level) at any settlement monitoring mark required under this consent. |
| <u>Temporary construction yards</u> | |
| <u>58A</u> | <u>Any temporary retaining wall required to form the construction areas for the Project shall be timber post and board, unless otherwise approved by Auckland Council. An alternative construction material may be used, provided that the alternative material will achieve similar or better landscape and amenity outcomes (and subject to the approval of Auckland Council).</u> |

C. Park reinstatement and permanent assets

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| Permanent buildings and structures | |
| 59 | <p>At least three (3) -months prior to their construction, the Consent Holder shall provide design plans and information which specifies the design details, location and materials of the permanent above-ground wastewater infrastructure to remain at the site including:</p> <ul style="list-style-type: none"> (a) The plant room; (b) The air vent; (c) Any lid structures and chamber covers. <p>The design for the buildings/aboveground structures shall take into account the following matters:</p> <ul style="list-style-type: none"> (a) The requirement to meet the AUP permitted activity limits for operational noise (Condition X); (b) The extent to which the buildings/structures minimise potential adverse effects, and maintain and enhance the amenity of the surroundings (including neighbouring properties) including through; <ul style="list-style-type: none"> • The use of building materials which minimise the potential for graffiti and vandalism; • Ensuring buildings/structures are visually integrated into, and respond to, the immediate surrounding environment through use of appropriate colours, textures, design and modulation of the plant room building form; • Minimising the visual clutter of surface elements; • The application of Crime Prevention Through Environmental Design (CPTED) principles in the design of the plant room; and • The use of planting to screen and/or visually anchor the plant room building and enhance amenity values. <p>The design plans and information for permanent buildings and structures may be provided separately or may form part of the PRLP required by Condition 61 below.</p> |
| Mitigation Planting | |
| 60 | <p>The Consent Holder shall provide planting to replace and mitigate the removal of trees within Point Erin Park. This shall comprise the planting of a minimum of 38 exotic trees or 49 native trees (native trees shall be preferentially used wherever practicable. As many of these trees as practicable and acceptable to the landowner (Auckland Council) shall be planted within Point Erin Park and comprise a component of the Park Restoration and Landscape Plan required by Condition 61 below.</p> <p><i>Advice note: Where these trees are to be planted within Auckland Council Parks, then the location and species to be planted shall be subject to the agreement of Auckland Council as landowner (Parks and Community Facilities).</i></p> |

| Park Restoration and Landscape Plan (PRLP) | |
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| 61 | The Consent Holder shall prepare a photographic record of the pre-construction condition of the park and any park assets within the footprint and immediate vicinity of the construction areas. This record shall be provided to the Council at least one (1) month prior to construction in Point Erin Park commencing. |
| 62 | At least three (3) months prior to the completion of the Project, the Consent Holder shall prepare and submit to Auckland Council for certification a Park Restoration and Landscape Plan (PRLP) for the site. The objective of the PRLP is to provide details on the reinstatement of Point Erin Park to restore and enhance the landscape, amenity and recreation values of the park. |
| 63 | <p>The PRLP is to be prepared by a suitably qualified and experienced landscape architect in consultation with the landowner (Auckland Council) and mana whenua and shall include the following:</p> <ul style="list-style-type: none"> (a) Removal of construction yards, equipment, temporary retaining walls, and construction access not required for operation and maintenance access. (b) Details of the restoration of the open space to at least the same standard as that recorded as per Condition 61. (c) Replacement or reinstatement of any park assets that were affected by the Project, or any new proposed assets, including, but not limited to: <ul style="list-style-type: none"> • grassed areas • footpaths • park furniture (d) Details of proposed contouring, landscaping and planting. This is to include: <ul style="list-style-type: none"> • finished contours / levels • details on the replacement of trees removed as per the mitigation planting required by Condition 60 • any additional planting (including proposed species, location and planting timetable). This shall include details of replacement planting in the south western corner of the park to mitigate tree removal in this area and to assist in visually integrating the plant room and permanent retaining walls, <u>as well as any planting proposed to visually integrate the air vent.</u> • implementation and maintenance programmes (including a landscape planting management and maintenance plan) (e) Details of the treatment of permanent retaining walls, including wall construction, materials and design, planting, and any health and safety requirements (e.g. fencing). (f) Details of all hard landscaping materials, dimensions and specifications; (g) Any details of proposed way finding and interpretation signage within and adjacent to the park. (h) Record of consultation with the landowner (Auckland Council) and mana whenua. <p>In preparing the PRLP, consideration shall be given to opportunities to enhance Point Erin Park including its existing recreation, landscape and amenity values (e.g. additional or alternative walkways, seating, appropriate recognition of cultural values, etc), and planting and landform modification around the plant room, ventilation arrangement and permanent retaining walls to assist in the visual integration of any permanent above ground infrastructure.</p> |
| 64 | The PRLP shall set out a timeframe for implementation. This shall be as soon as reasonably practicable, and unless otherwise confirmed through the PLRP, shall be within twelve (12) months of practical completion of construction works. |

D. Operational phase consent conditions

| Noise | | | | | | | | | | |
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| 65 | <p>The noise arising from the operation of the plant room shall not exceed the following noise limits when measured within the boundary of any site zoned as follows:</p> <table border="1"> <tr> <th colspan="2">Residential</th></tr> <tr> <th>Time</th><th>Noise Limit</th></tr> <tr> <td>Monday to Saturday 0700-2200 hours</td><td rowspan="2">50 dB LAeq</td></tr> <tr> <td>Sunday 0900-1800 hours</td></tr> <tr> <td>All other times</td><td>40 dBLAeq 75 dB LAFmax</td></tr> </table> <p><i>Advice notes:</i></p> <p>(a) 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.</p> <p>(b) 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.</p> | Residential | | Time | Noise Limit | Monday to Saturday 0700-2200 hours | 50 dB LAeq | Sunday 0900-1800 hours | All other times | 40 dBLAeq 75 dB LAFmax |
| Residential | | | | | | | | | | |
| Time | Noise Limit | | | | | | | | | |
| Monday to Saturday 0700-2200 hours | 50 dB LAeq | | | | | | | | | |
| Sunday 0900-1800 hours | | | | | | | | | | |
| All other times | 40 dBLAeq 75 dB LAFmax | | | | | | | | | |
| Operational air quality | | | | | | | | | | |
| 66 | The Consent Holder shall, at all times operate, monitor and maintain the Point Erin Tunnel so that odour discharges authorised by this consent are maintained at the minimum practicable level. | | | | | | | | | |
| 67 | <p>Within any private property there shall be no odour caused by discharges from the normal operation of the Point Erin Tunnel which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.</p> <p><i>Advice Note: The storage and transfer of wastewater within the Point Erin 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.</i></p> | | | | | | | | | |
| 68 | <p>The air vent shall be designed to disperse odour and minimise effects. This shall include:</p> <ul style="list-style-type: none"> (a) a stack height of at least 3 m; and (b) a uni-directional discharge vent to allow the discharge when required but prevent inlet of air and preferentially draw inlet air through the control chamber. <p>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 to enable greater dispersion.</p> | | | | | | | | | |
| 69 | 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 | | | | | | | | | |
| 70 | All odour complaints that are received arising from the operation of the Point Erin Tunnel shall be recorded. The complaint details shall include: | | | | | | | | | |

- | | |
|--|--|
| | <ul style="list-style-type: none">(a) the date, time, location and nature of the complaint;(b) the name, telephone number and address of the complainant, unless the complainant elects not to supply these details;(c) weather conditions, including approximate wind speed and direction, at time of the complaint; and(d) any remedial actions undertaken. |
|--|--|

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

Appendix B Landscape and visual effects

Plant Room Precedent.

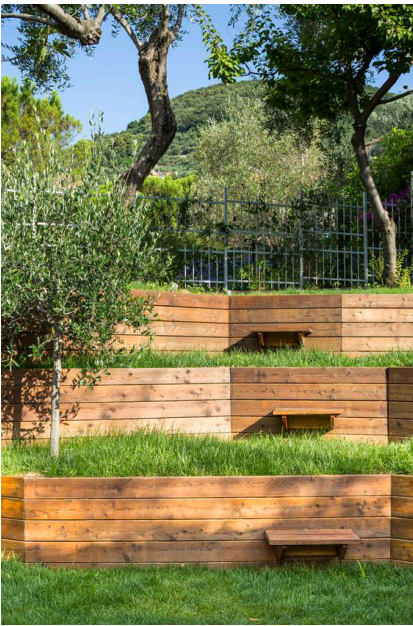


Vent Stack Precedent.



Precedent Study

Retaining Wall Precedent.



Precedent Study



NOTES:

1. CO-ORDINATES ARE IN NZTM AND LEVELS ARE TO AUCKLAND L&S 1946 DATUM.

ISTHMUS.

SK01. - PLANTING INTENT
INDICATIVE CONCEPT.

PLANTING ALONG RETAINING
WALL TBC.

PLANT ROOM

RETAINING WALL
CONTROL CHAMBER
PROPOSED LOCATION

EX. DN160 PE
SDR13.6 SW PIPE
TO BE RELOCATED
EX. DN1050 RC
SW PIPE

EX. DN2050
SWMH 3000085469
DTI : 6.29m

SITE ACCESS APPROX.
5m WIDE

EX. DN160 PE
SDR13.6 SW PIPE
TO BE RELOCATED

POTENTIAL HERNE BAY
COLLECTOR TUNNEL

RETAINING WALL
NEW FOOTPATH
MERGE WITH
EXISTING FOOTPATH

BATTER 1 TO 1
MEET EXISTING
SURFACE

NEW FOOTPATH
MERGE WITH
EXISTING FOOTPATH

POTENTIAL GROUND COVER / SHRUB PLANTING
SPECIES TO BE DECIDED DURING CO-DESIGN PROCESS, ASSUMED NATIVE.

EX. EGG SHAPE BRICK SW
2000333005,
Ø902mm x 1230mm(H)

EX. DN2050 SWMH
200076946
DTI : 4.4m

RETAINING WALL

NEW FOOTPATH

EX. DN1050 RC
SW PIPE

POTENTIAL TREE PLANTING, WHERE UNCONSTRAINED BY
UNDERGROUND SERVICES. SPECIES TO BE DECIDED
DURING CO-DESIGN PROCESS, ASSUMED NATIVE
INCLUDING POUHUTUKAWA.

EX. DN2400
SWMH 3000085470
DTI : 6.29m
MH IL : 5.92m

SEMI TRAILER TRUCK
TRACKING

SCALE 1:200 (A1) 4 3 2 1 0 4 8 12 16 20m

PLAN
SCALE: 1:200

CONSENT ISSUE

JACOBS AECOM JACOBS ASSOCIATE

DESIGNED AD 01.23
DES. CHECKED MBS 01.23
DRAWN PJG 01.23
DWG. CHECKED
PROJECT LEADER
INFRAS'TR APP'D

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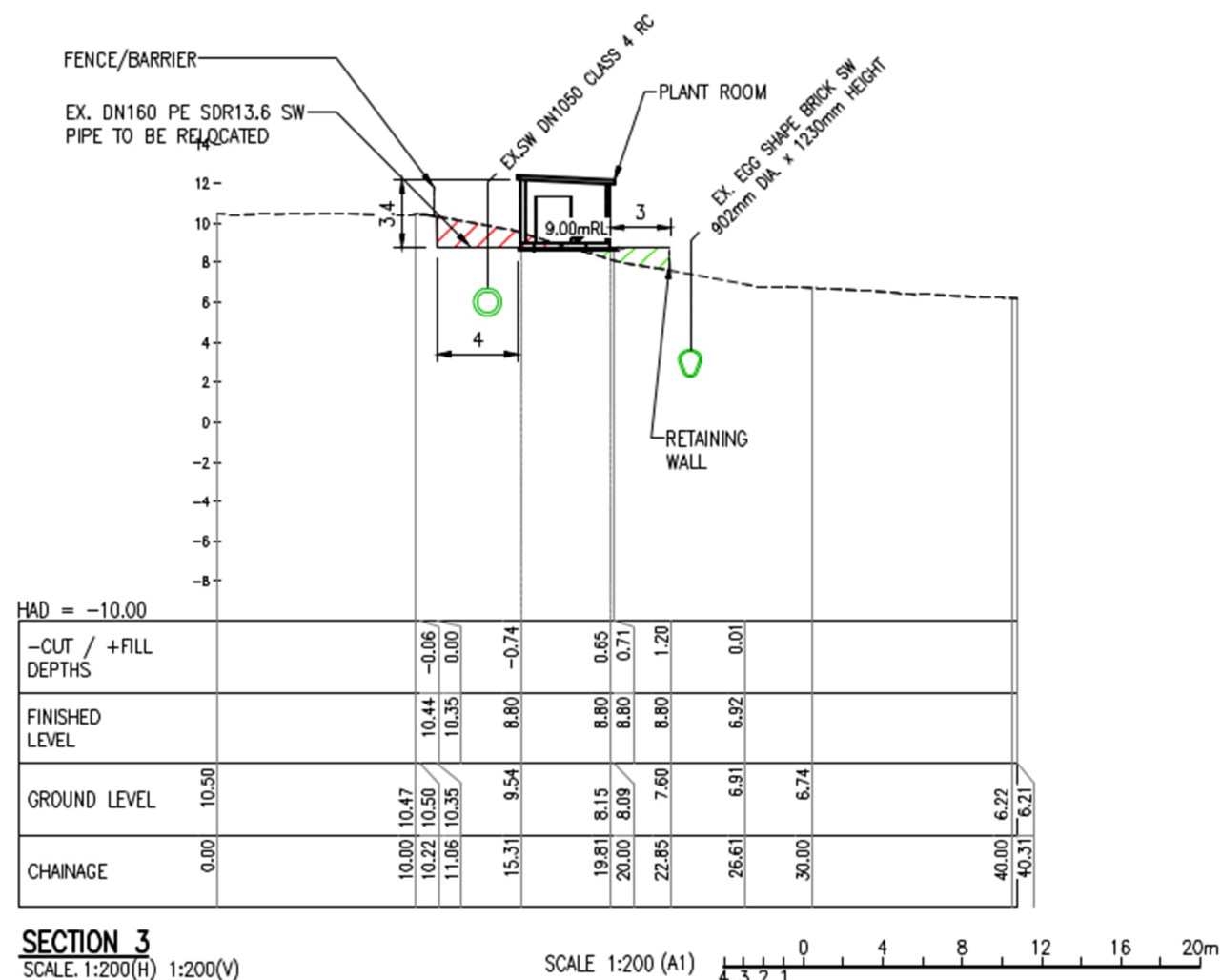
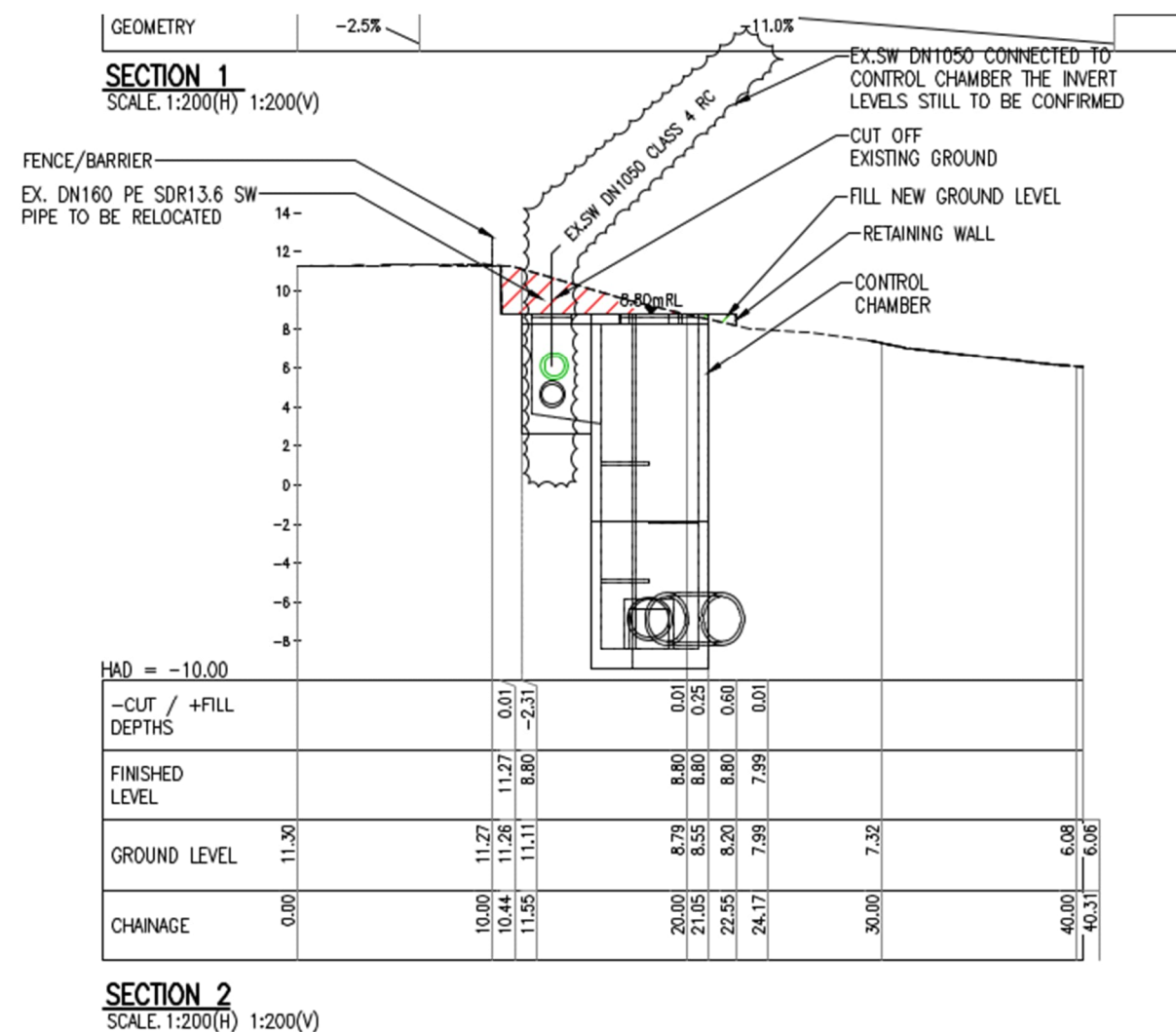
POINT ERIN - CENTRAL INTERCEPTOR (DSCIN)
82 GRAVITY SEWER INCLUDING MANHOLES
POINT ERIN SITE - OPERATIONAL PHASE PLAN - VEHICLE ACCESS LAYOUT

CAD FILE 2013964.008 DATE 02.02.23
ORIGINAL SCALE A1 CONTRACT No. 6661
REF. No. CI-STAT&PLAN ISSUE
DWG. No. 2013964.008 1

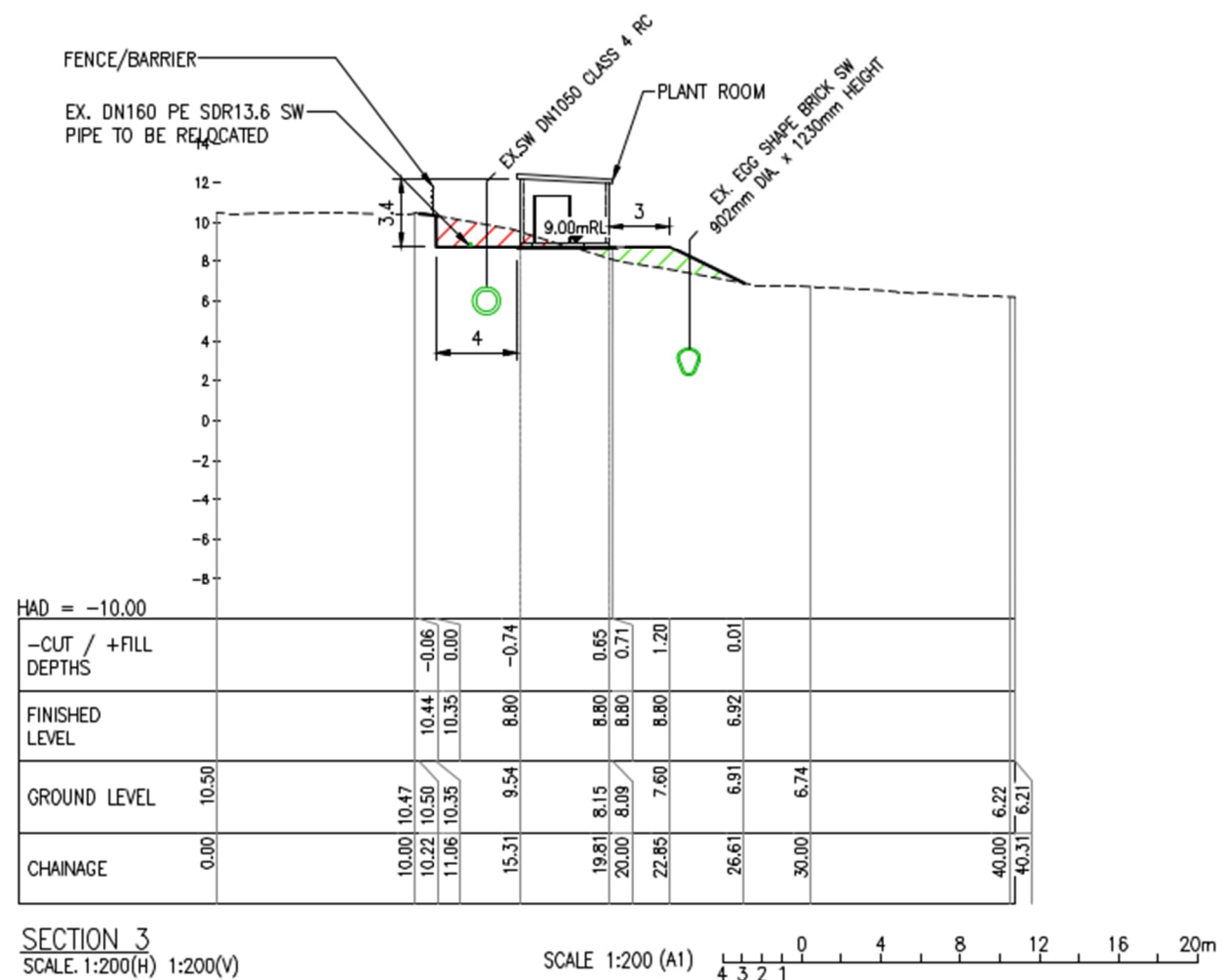
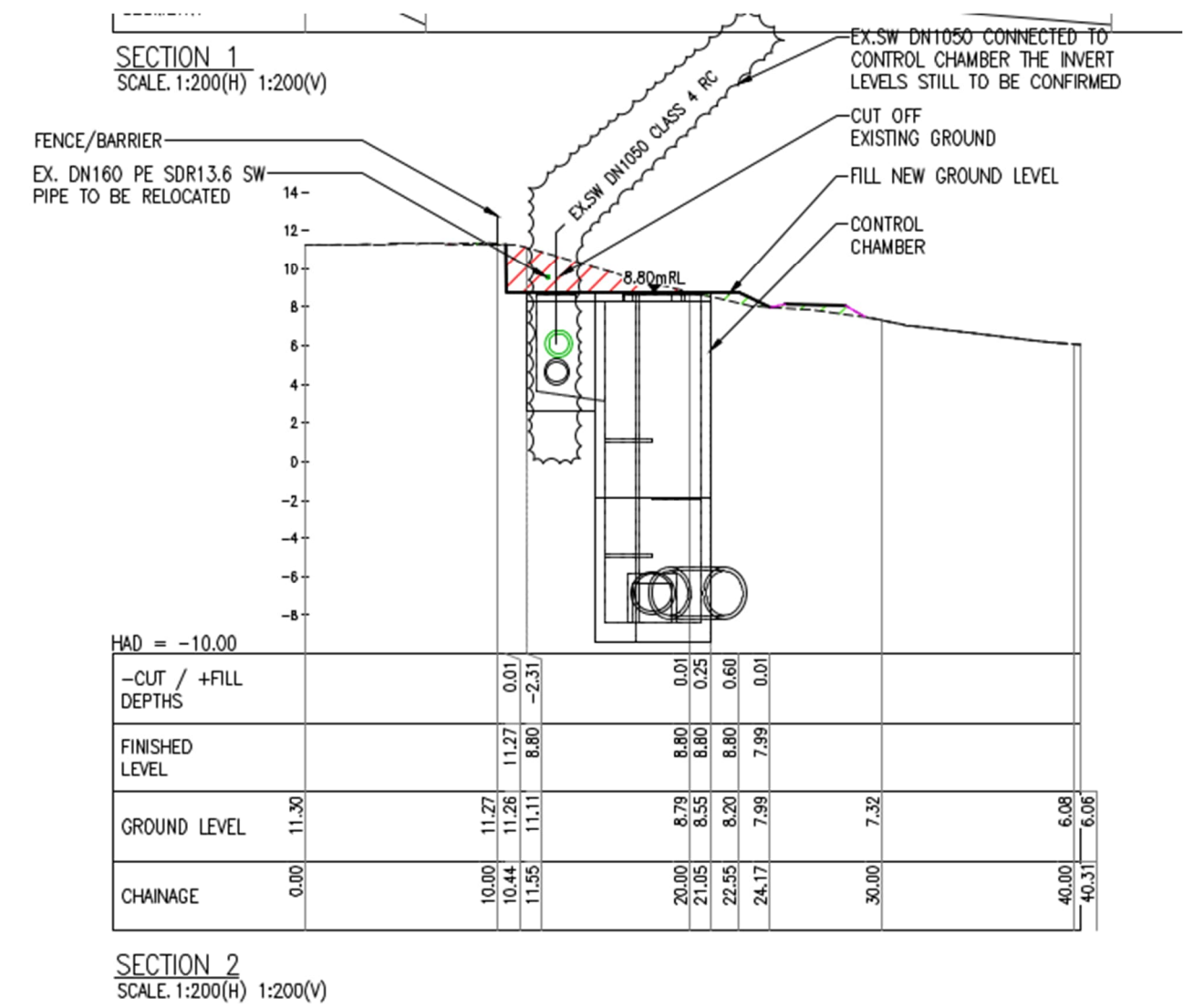
Cross-sections through south-west corner

Cross sections showing permanent retaining wall to west and options for retaining or embankment on the eastern side of the plant room platform.

Short retaining wall option



Embankment option (as shown in Appendix B of the application)



17 March 2023
30552.9082

Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

Attention: Mark Ross

Dear Mark

Further information on potential design and appearance of above-ground infrastructure – Point Erin Park

In order to provide further information on the potential appearance and design of the permanent infrastructure as requested by Council, we have compiled some examples of plant rooms and walls from other Watercare sites (Appendix A). These examples also demonstrate that there is flexibility in the designs to allow the structures to either integrate into or become a feature of their surrounding environment, as appropriate.

As set out in the application materials, Watercare intends to work with mana whenua, Auckland Council Parks, and the local board (subject to their interest) to enable consideration to be given to mana whenua and Auckland Council aspirations and plans when developing the design / appearance of the permanent above-ground infrastructure.

The location of the above-ground permanent structures is shown on the drawings included in Appendix B of the original application. In particular, Drawing 2013964.002 shows the proposed location of the vent, plant room and retaining walls. As set out in the AEE, the permanent above ground infrastructure is limited and consistent with the scale of structures and buildings commonly located within parks.

The examples included in Appendix A include the Project Hobson plant room and Lynch Street plant room. These two plant rooms are examples of where the design of a plant room is modified in response to a specific context. The examples provided from Tawariki Street, Haverstock Road and Lyon Ave are more representative of a typical plant room design. In particular, they reflect and provide a good basis for understanding the likely nature and scale of the plant room in Point Erin Park, noting however the design at Point Erin Park will respond to the coastal/park setting.

A visual simulation of the Tawariki St shaft site, prepared for the Grey Lynn Tunnel application, is included. This gives an indication of the scale and appearance of a plant room and retaining walls associated with a shaft site, noting that the Tawariki site is a much smaller site owned by Watercare, with more permanent paving than is proposed for Point Erin Park.

An example of the outcome of a design workshop process for the Lyon Avenue and Haverstock plant rooms is also provided. The designs and landscaping for these sites were refined following a feedback process, similar to what is proposed for Point Erin Park. As a result, planting to integrate

and screen the plant rooms and retaining walls was proposed. A visual simulation of the Lyon Ave and Haverstock plant rooms and retaining walls with associated landscaping is provided.

A visual simulation of a vent stack from the Mount Albert site is provided. The vent stack at Point Erin Park will be set back within the park at least 130m from the nearest dwelling and can also be designed as a feature or (more likely) well screened from surrounding viewing audiences.

Overall, these examples provide some further information on the potential design and appearance of the permanent infrastructure proposed for Point Erin Park. As the examples demonstrate, there is sufficient flexibility to enable the structures to be either screened and integrated with the surrounding environment or made a feature as appropriate. Consultation with mana whenua partners and Auckland Council Parks will determine what design is most appropriate for Point Erin Park.

Applicability

This report has been prepared for the exclusive use of our client Watercare Services Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Auckland Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd

Report prepared by:



.....
Rachel Signal-Ross
Senior Planner

Authorised for Tonkin & Taylor Ltd by:



.....
Karen Baverstock
Project Director

17-Mar-23

Landscape and Visual - additional information 17.3.23.docx

Appendix A

- Visual simulations and examples of above-ground infrastructure

Consent design Plant room at Tawariki Street, Grey Lynn



Central Interceptor

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An Auckland Council Organisation

Plant room and retaining at CI Lyon Avenue site, Mt Albert

DAY OF PLANTING



5 YEARS POST PLANTING



Haverstock Road plant room

HAVERSTOCK ROAD

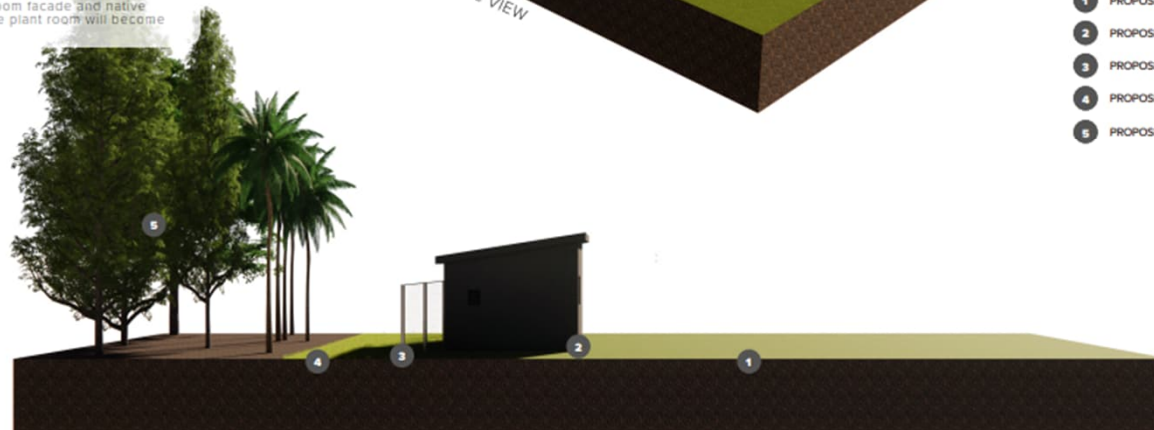
Drawing to show axonometric and cross sectional views of the Haverstock site including the proposed Plant Room in context.

These highlight the relationship of the Plant room Chain link fence and re-vegetation creating a green corridor from east to west.

It is expected that utilising both a recessive colour on the plant room facade and native vegetation behind the plant room will become recessive.



- 1 PROPOSED SUREPAVE
- 2 PROPOSED PLANT ROOM
- 3 PROPOSED CHAINLINK FENCE
- 4 PROPOSED GRASS
- 5 PROPOSED REVEGETATION



CROSS SECTIONAL VIEW



Central Interceptor

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An Auckland Council Organisation



Examples of plant rooms where design responds to a particular context

Project Hobson plant room



Lynch St plant room



Vent shaft example

Mt Albert War Memorial - Boffa Miskell Concept Plan – Plant Room (Concept Only 2016)

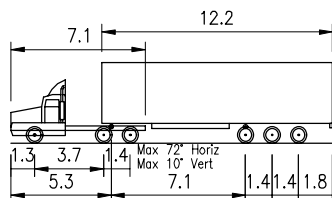


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| KEY | |
|---|---|
| | MAIN CONSTRUCTION AREA |
| | SOUTH-WESTERN CONSTRUCTION AREA |
| | EXISTING DN160 PE ST MARYS SW PRESSURE MAIN |
| | EXISTING DN1050 SARSFIELD OVERFLOW PIPE |



| | |
|--|---------|
| SEMI-TRAILER (TNZ GEN. MIN. DESIGN RADIUS) | 17.000m |
| OVERALL LENGTH | 12.200m |
| OVERALL WIDTH | 2.500m |
| OVERALL BODY HEIGHT | 4.250m |
| MIN. BODY GROUND CLEARANCE | 0.417m |
| TRACK WIDTH | 2.500m |
| LOCK-TO-LOCK TIME | 6.00s |
| WALL TO WALL TURNING RADIUS | 10.000m |

Temporary retaining

Likely to be temporary retaining for construction period, replaced with permanent retaining as part of reinstatement works.

Temporary retaining

EXISTING DN160 PE ST-MARYS SW PRESSURE MAIN TO BE RELOCATED

EXISTING DN1050 SARSFIELD OVERFLOW PIPE

ENTRY

SEMI TRAILER TRUCK

TEMPORARY STEPPED ACCESSWAY

SEMI TRAILER TRUCK

SHELLY BEACH RD

SARSFIELD ST

CURRAN ST

FLOW DIVERSION PIPELINE
REFER TO DRAWING 2013964.006

CI TUNNEL

MH-11 POINT ERIN
SHAFT LOCATION

PLAN
SCALE: 1:500

SCALE 1:500 (A1) 0 10 20 30 40 50m

CONSENT ISSUE

JACOBS AECOM JACOBS ASSOCIATES

| ISSUE | DATE | AMENDMENT | BY | APP'D. | BY | DATE |
|-------|----------|--------------------------------|-----|--------|----|------|
| 2 | 02.02.23 | ISSUED FOR CONSENT APPLICATION | PJG | DJK | | |
| 1 | 21.12.22 | ISSUED FOR CONSENT APPLICATION | PJG | | | |

| | | |
|----------------|-----|-------|
| DESIGNED | AD | 12.22 |
| DES. CHECKED | MBS | 12.22 |
| DRAWN | PJG | 12.22 |
| DWG. CHECKED | PMF | 12.22 |
| PROJECT LEADER | | |
| INFRASTR APP'D | | |

OPERATIONS

INFRASTRUCTURE

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POINT ERIN - CENTRAL INTERCEPTOR (DSCIN)
00 SITE GENERAL
POINT ERIN SITE - CONSTRUCTION PHASE PLAN

| | |
|----------------------------|----------------------|
| CAD FILE 2013964.003 | DATE 02.02.23 |
| ORIGINAL SCALE A1 1:500 | CONTRACT No. 6661 |
| REF. No. CI-STAT&PLAN | ISSUE |
| DWG. No. 2013964.003 | 2 |

Overlays of the site and 3d construction model

The below are rough overlays of site photographs with the 3d model which has been developed for concept design. They are representative of the general bulk and scale of the permanent above-ground infrastructure. They are not to scale, and do not include any potential planting or design which may result from the design consultation process.

Vent structure

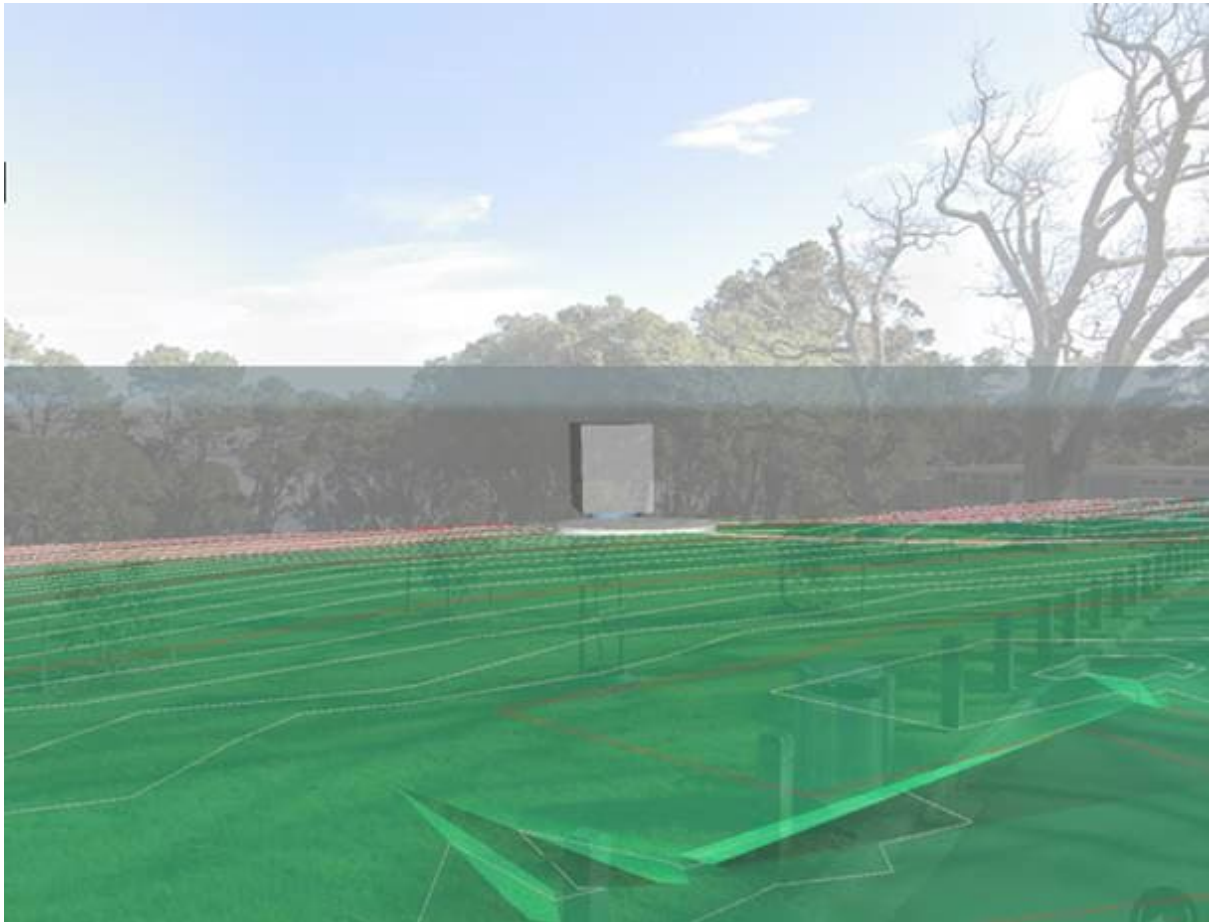


Figure 1.1: Vent structure and shaft top from Point Erin Carpark. Note the shaft top will not all be paved – the majority will be grassed with a man-hole providing maintenance access into the shaft as required.

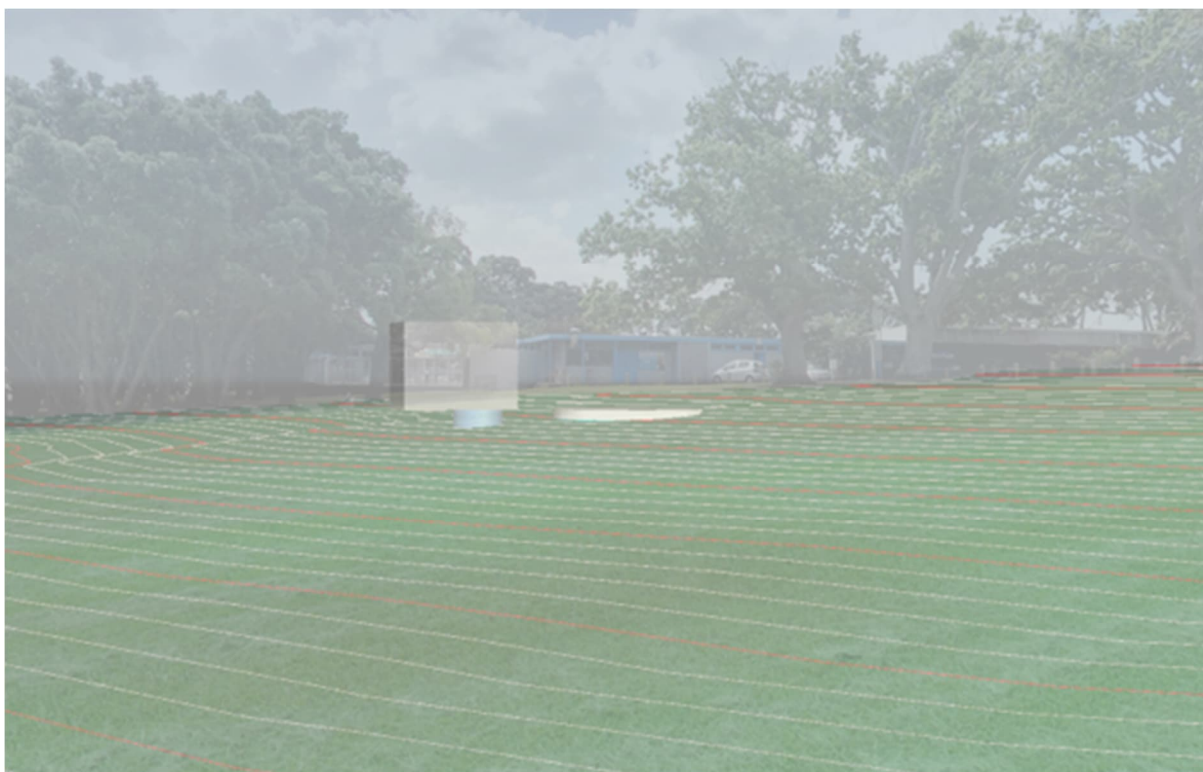


Figure 1.2: Vent stack and shaft top from within Point Erin Park looking towards Point Erin Pools in background. As above, shaft top will be largely covered and grassed.

Plant room and retaining wall

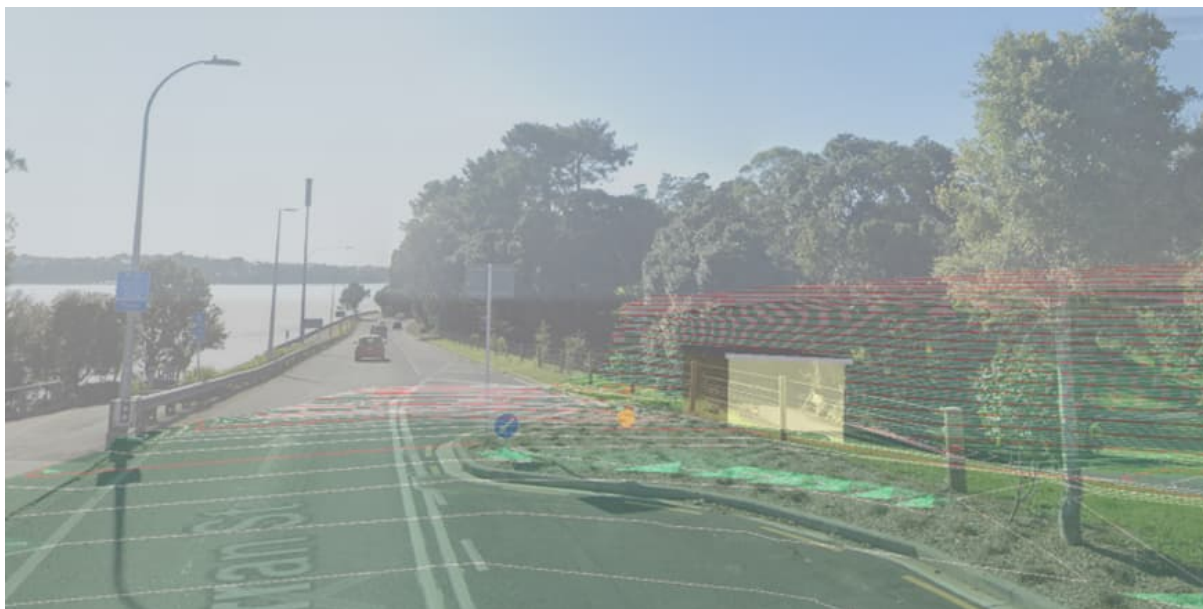


Figure 1.3: Plant room – street view from Curran St

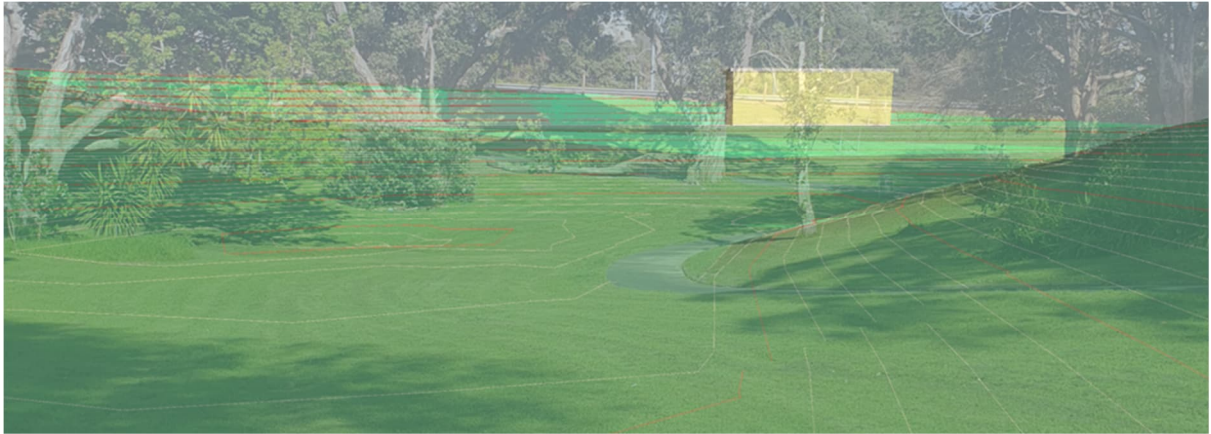
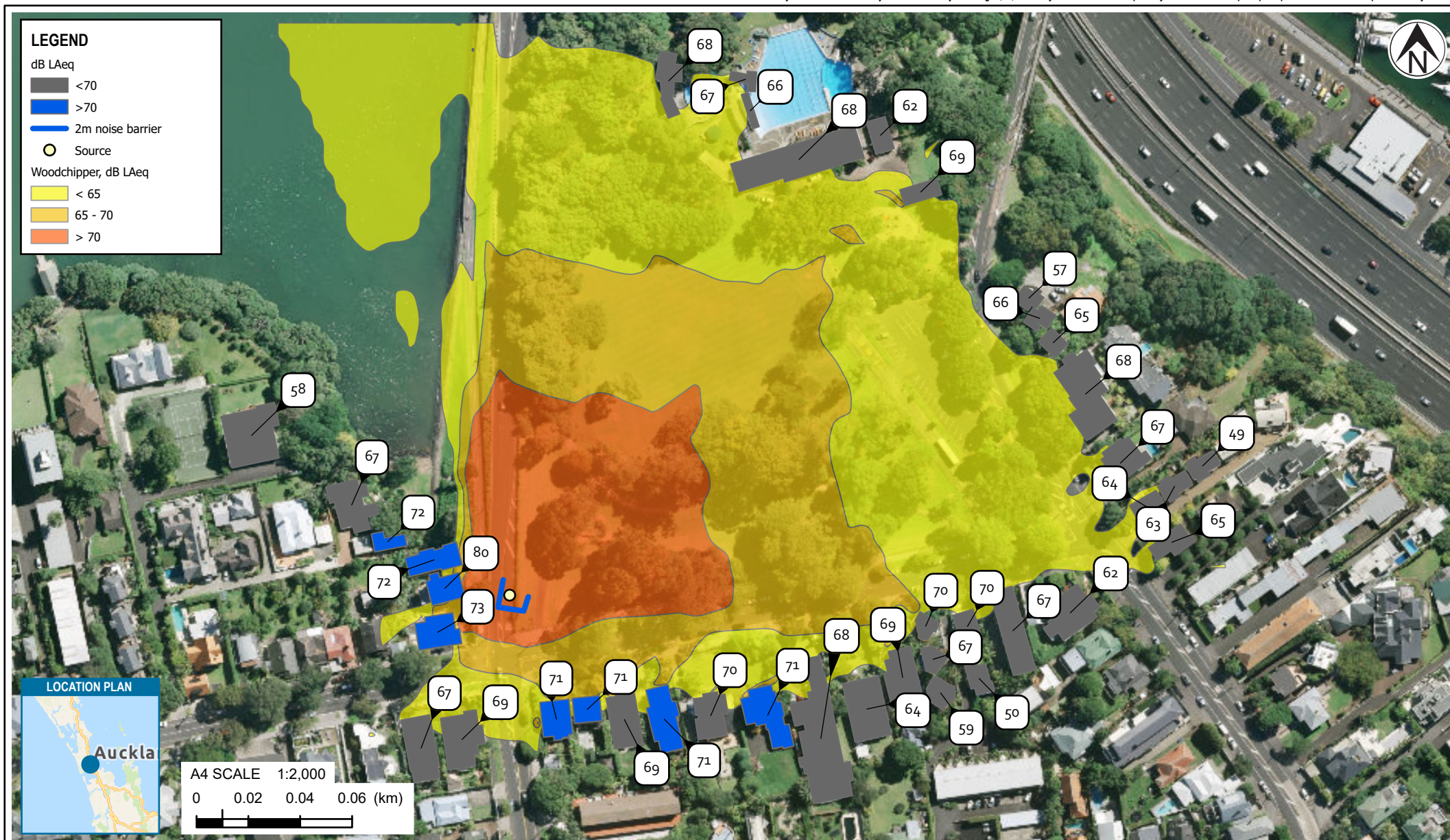


Figure 10.4: Plant room and retaining wall from within Point Erin Park looking towards Curran St

Appendix C Noise and vibration – tree chipping



NOTES:

NZ Navigation Map: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors.. NZ Imagery: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

REVISIONS

NO.

BY

PROJECT No.

30552.9081

DESIGNED

SHYU

MAR.23

DRAWN

SHYU

MAR.23

CHECKED

APPROVED

DATE

CLIENT

WATERCARE LTD

PROJECT

CENTRAL INTERCEPTOR POINT ERIN EXTENSION

TITLE

WOODCHIPPING - PREDICTED NOISE LEVELS - WORSE CASE

SCALE (A4)

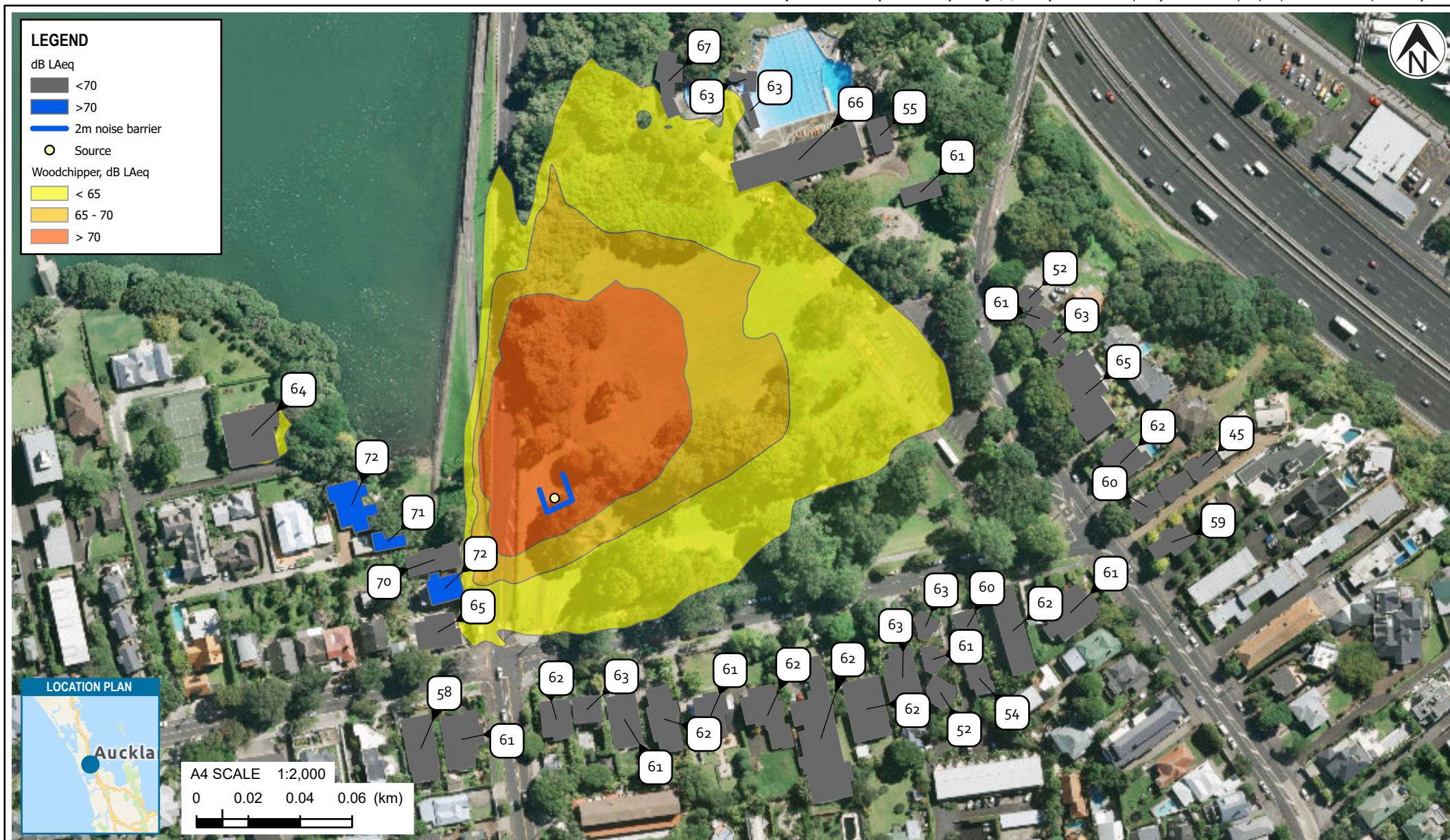
1:2,000

FIG No.

FIGURE A1

REV

0



NOTES:

NZ Navigation Map: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors.. NZ Imagery: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

REVISIONS

NO. BY

PROJECT No. 30552.9081

DESIGNED SHYU MAR.23
DRAWN SHYU MAR.23
CHECKED

CLIENT WATERCARE LTD

PROJECT CENTRAL INTERCEPTOR POINT ERIN EXTENSION

TITLE WOODCHIPPING - PREDICTED NOISE LEVELS - ALTERNATIVE LOCATION

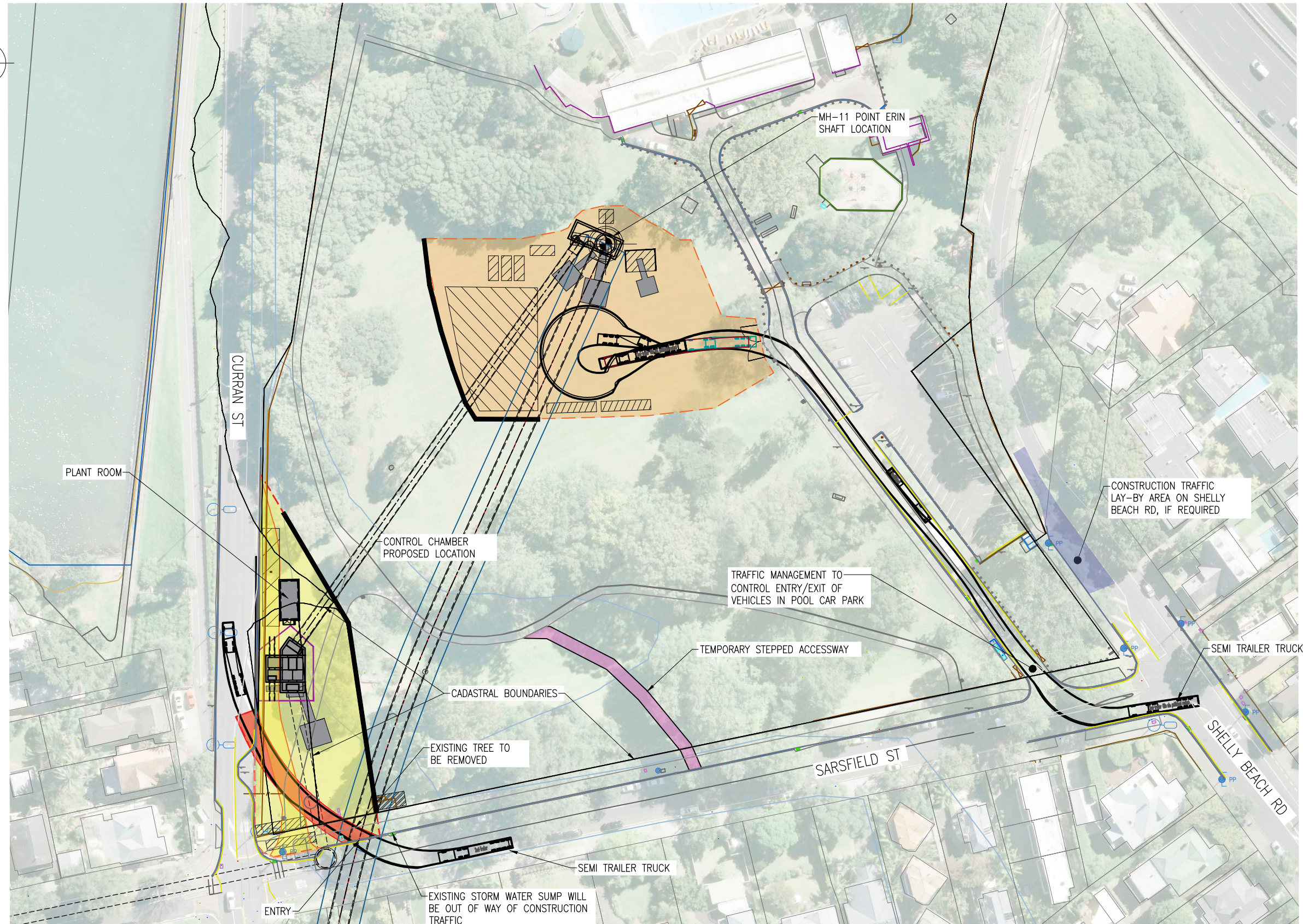
SCALE (A4) 1:2,000

FIG No. FIGURE A2

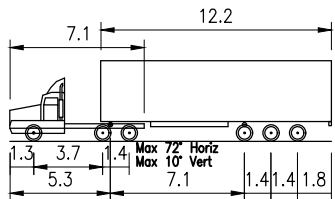
REV 0

APPROVED DATE

Appendix D Updated vehicle tracking drawings



| KEY | |
|---|---|
| | MAIN CONSTRUCTION AREA |
| | SOUTH-WESTERN CONSTRUCTION AREA |
| | EXISTING DN160 PE ST MARYS SW PRESSURE MAIN |
| | EXISTING DN1050 SARSFIELD OVERFLOW PIPE |



| | |
|--|---------|
| SEMI-TRAILER (TNZ GEN. MIN. DESIGN RADIUS) | 17.000m |
| OVERALL LENGTH | 12.200m |
| OVERALL WIDTH | 2.500m |
| OVERALL BODY HEIGHT | 4.250m |
| MIN. BODY GROUND CLEARANCE | 0.417m |
| TRACK WIDTH | 2.500m |
| LOCK-TO-LOCK TIME | 6.00s |
| WALL TO WALL TURNING RADIUS | 10.000m |

PLAN
SCALE: 1:500

SCALE 1:500 (A1)
108 6 4 2

CONSENT ISSUE

JACOBS AECOM JACOBS

Plot Date: Apr 17, 2023 4:35pm C:\p\work\anthony.doherty@jacobs.com\0017059\ 2013964_003-2.dwg

| ISSUE | DATE | AMENDMENT | BY | APPD. | DESIGNED | DES. CHECKED | DRAWN | DWG. CHECKED | PROJECT LEADER | INFRASTR APP'D | BY | DATE |
|-------|----------|--------------------------------|-----|-------|----------|--------------|-------|--------------|----------------|----------------|----|-------|
| 3 | 17.04.23 | AMENDED BASED ON COMMENTS | AD | MBS | AD | MBS | PJG | PMF | | | | 12.22 |
| 2 | 02.02.23 | ISSUED FOR CONSENT APPLICATION | PJG | DJK | | | | | | | | 12.22 |
| 1 | 21.12.22 | ISSUED FOR CONSENT APPLICATION | PJG | | | | | | | | | 12.22 |

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| OPERATIONS | |
| INFRASTRUCTURE | |

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POINT ERIN - CENTRAL INTERCEPTOR (DSCIN)
00 SITE GENERAL
POINT ERIN SITE - CONSTRUCTION PHASE PLAN

| | | | |
|----------------|---------------|--------------|----------|
| CAD FILE | 2013964.003-2 | DATE | 02.02.23 |
| ORIGINAL SCALE | A1 1:500 | CONTRACT No. | 6661 |
| REF. No. | CI-STAT&PLAN | ISSUE | |
| DWG. No. | 2013964.003 | | 3 |

