APPENDIX D - Statutory Assessment

Queen Street Wastewater Diversion Programme – Mayoral Drive Alignment Project

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The following provides an assessment of the project works in relation to the following matters from the Auckland Unitary Plan:

- Objectives and Policies of the Regional Policy Statement
- Non-RPS Objectives and Policies
- AUP Standards Assessment
- Assessment Criteria

A summary of the assessment is provided within Section 12 of the AEE.

Regional Policy Statement

The following is an assessment of the project works against the relevant provisions of the Regional Policy Statement.

Regional Policy Statement - Auckland Unitary Plan Chapter B		
Provision		Response/ comment
B2.2 Urban Growth and Form		
B2.2.1 Objectives		
(1)	A quality compact urban form that enables all of the following: a) higher-quality urban environment; b) greater productivity and economic growth; c) better use of existing infrastructure and efficient provision of new infrastructure; d) improved and more effective public transport;	The installation of a new wastewater pipeline in the City Centre will reduce adverse effects of overflows from the wastewater network on the stormwater system. At present, wastewater overflows can impact the City Centre with odour and exposure to contaminants. These works will resolve these overflows and support to create a higher-quality urban environment.

	e) greater social and cultural vitality; f) better maintenance of rural character and rural productivity; and g) reduced adverse environmental effects.	The project will also make use of existing infrastructure (Orakei Main Sewer), while enabling urban growth within the City Centre, which will support investment into the public transport network from the nearby City Rail Link.
(5)	The development of land within the Rural Urban Boundary, towns, and rural and coastal towns and villages is integrated with the provision of appropriate infrastructure.	
B2.2.2 Policies		
(5)	Quality compact urban form Enable higher residential intensification: a) in and around centres; b) close to public transport, social facilities and employment opportunities	Increasing wastewater capacity within the city centre will provide the necessary infrastructure to support urban population growth. Located in the heart of Auckland's City Centre, this project will enable a greater population of people to live and work around Queen Street, Mayoral Drive and adjacent areas.
B3.2 Infrastructure		
B3.2.1 Objectives		
(1)	Infrastructure is resilient, efficient and effective.	The purpose of this project is to construct a new wastewater pipeline to improve the resilience of the wastewater network. A carefully developed construction methodology has been selected to minimise adverse effects on the environment.
(3)	Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on: a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character; b) the health and safety of communities and amenity values.	
(4)	The functional and operational needs of infrastructure are recognised.	
(8)	The adverse effects of infrastructure are avoided, remedied or mitigated.	
B3.2.2 Policies		
(1) (3)	Provision of infrastructure Enable the efficient development, operation, maintenance and upgrading of infrastructure. Provide for the locational requirements of infrastructure by recognising that it can have a functional or operational need to be located in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character.	While the site location on / adjacent to Mayoral Drive is recognised to be a busy City Centre location, construction works are required to occur here in order to improve the upper Queen Street wastewater catchment. A predominantly trenchless pilot bore tunnelling construction methodology has been specifically chosen for its lesser impact on the streetscape compared to trenching methods.

(7) (8)	Managing adverse effects Encourage the co-location of infrastructure and the shared use of existing infrastructure corridors where this is safe and satisfies operational and technical requirements. Avoid, remedy or mitigate the adverse effects from the construction, operation, maintenance or repair of infrastructure.	

AUP Objectives and Policies (non-RPS)

The following provides an assessment of the project works against the relevant objectives and policies of the AUP. The relevant objectives and policies of the following chapters of the AUP have been considered

- E7 Taking, Using, Damming And Diversion Of Water And Drilling
- E25 Noise and Vibration
- E17 Trees in Roads
- E26 Street Trees and Notable Trees Overlay
- E26 Infrastructure
- E30 Contaminated Land

AUP Objectives and Policies		
Provision		Response
Note: Activities listed in Chapter E7 relate to the objectives and policies listed in Chapters E1 and E2. The objectives and policies relating to wastewater management have been included below.		
E1 Water quality and Integrated management		
E1.2 Objectives		
(1)	Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas	Any groundwater encountered during dewatering will be treated before being discharged to the stormwater network. An ESCP has been developed and will be implemented for these works that is consistent with the requirements of the *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* (known as 'GD05') and includes both general project controls and site-specific controls at the shafts/compounds and Greys Avenue CSA locations to reduce contaminant and sediment discharge to downstream waterbodies.

(2)	The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.	As per the measures mentioned above that will be implemented on-site, the health and essence of any groundwater encountered will be maintained.
(3)	Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.	The installation of this wastewater pipeline will protect public health and safety by reducing the current occurrence of overflows into the stormwater network. Without this upgrade, current overflows may potentially harm freshwater and coastal water ecosystems.
E1.3 Policies		
(19)	Wastewater network overflow discharges Ensure wastewater networks are designed and operated to minimise wet weather overflows by: a) requiring wastewater networks to be designed and constructed in accordance with recognised industry standards, including being sized to cater for the maximum probable development level of the area to be serviced; b) requiring the management of connections to the wastewater network; c) requiring wastewater networks to be managed in accordance with a network operations plan including an overflow mitigation plan with clear requirements and timeframes; and d) designing and locating overflow points to minimise nuisance, damage, public health risk and adverse ecological effects.	In upgrading the capacity and resilience of Auckland City Centre's wastewater network, the Project's purpose is to minimise wastewater overflows into the stormwater network in wet weather events. As such, the existing nuisance, public health risk and ecological effects will be reduced.
E2 Water Allocation and Use (Activities in Chapter E7 refer to the policies of E2)		
E2.2 Objectives		
(1)	Water in surface rivers and groundwater aquifers is available for use provided the natural values of water are maintained and established limits are not exceeded.	The Mayoral Alignment Project will support the wider Queen Street Wastewater Diversion programme of works to increase the capacity of the City Centre's wastewater network. Hence, this proposal is not contrary to the objectives and Policies of Chapter E2 relating to water allocation and use. As described in the AEE, dewatering will be required as part of shaft construction works. The method for construction is trenchless tunnelling via pilot boring, with some sections of open-cut trenching. This is a water-efficient method of pipe laying as it requires less excavation and reduces the amount of water taken from dewatering.
(2)	Water resources are managed within limits to meet current and future water needs for social, cultural and economic purposes.	
(4)	Water resources are managed to maximise the efficient allocation and efficient use of available water.	
(5)	Mana Whenua values including the mauri of water, are acknowledged in the allocation and use of water.	
E2.3 Policies		

(7)	Require all proposals to take and use groundwater from any aquifer to demonstrate that: a) the taking is within the water availabilities and levels for the aquifer in Table 1 Aquifer water availabilities and Table 2 Interim aquifer groundwater levels in Appendix 3 Aquifer water availabilities and levels, except in accordance with Policy E2.3(11), and meeting all of the following: i. recharge to other aquifers is maintained; and ii. aquifer consolidation and surface subsidence is avoided. b) the taking will avoid, remedy or mitigate adverse effects on surface water flows, including the following: i. base flow of rivers, streams and springs; and ii. any river or stream flow requirements and in particular the minimum stream flow and availability in Appendix 2 River and stream minimum flow and availability. c) the taking will avoid, remedy or mitigate adverse effects on terrestrial and freshwater ecosystem habitat; d) the taking will not cause saltwater intrusion or any other contamination; e) the taking will not cause adverse interference effects on neighbouring bores to the extent their owners are prevented from exercising their lawfully established water takes; f) Policy E2.3(7)(e) above will not apply in the following circumstances: iii. where it is practicably possible to locate the pump intake at a greater depth within the affected bore; or iv. where it can be demonstrated that the affected bore accesses, or could access, groundwater at a deeper level within the same aquifer, if drilled or cased to a greater depth. g) the proposed bore is capable of extracting the quantity of groundwater applied for; and h) the proposal avoids, remedies or mitigates any ground settlement that may cause distress, including reducing the ability of an existing building or structure to meet the relevant requirements of the Building Act 2004 or the New Zealand Building Code, to any existing: i. buildings; ii. structures; or	An assessment of groundwater drawdown effects has been undertaken, which considers effects on surface water flows, freshwater ecosystems, saltwater intrusion and neighbouring bores. Overall, it is considered that the proposed take of groundwater during construction will have negligible effects on these matters. Settlement effects on neighbouring buildings and structures are also assessed as less than minor, and monitoring during construction is proposed to ensure no unexpected effects occur.

	services including roads, pavements, power, gas, electricity, water and wastewater networks and fibre-optic cables.	
(23)	Diversion of Groundwater Require proposals to divert groundwater, in addition to the matters addressed in Policy E2.3 (6) and (7) above, to ensure that: (b) the proposal avoids, remedies or mitigates any adverse effects on: i. scheduled historic heritage places and scheduled sites and places of significance to Mana Whenua; and ii. people and communities. (c) the groundwater diversion does not cause or exacerbate any flooding; (d) monitoring has been incorporated where appropriate, including: i. measurement and recording of water levels and pressures; and ii. measurement and recording of the movement of ground, buildings and other structures. (e) mitigation has been incorporated where appropriate including: i. minimising the period where the excavation is open/unsealed; ii. use of low permeability perimeter walls and floors; iii. use of temporary and permanent systems to retain the excavation; or iv. re-injection of water to maintain groundwater pressures.	Once constructed, the new wastewater pipeline will not interfere with existing floodplains as the installation will be entirely underground. Diversion of groundwater on site will have minimal effects on the adjacent heritage buildings as assessed in **Appendix J.** As outlined in the ESCP (**Appendix L**), plywood mix bunds, concrete barriers and traversable bunds will be configured to divert flood flows through or around the CSA site and around compounds. This mitigation will prevent diverted wet weather flows from entering nearby buildings and the shafts.
E17 Trees in Roads *Note: Activities listed in Chapter E26 relate to the objectives and policies listed in Chapters E17 (Trees in roads) and D13 (Notable Trees). The objectives and policies relating to trees in roads have been included below.*		
E17.2 Objectives		
(1)	Trees in roads that contribute to cultural, amenity, landscape and ecological values are protected.	All trees along the Project Alignment are to be retained. The Arboriculture Assessment (**Appendix I**) provides a range of protective methods so that any affected street trees from the proposed works are protected, such as: • Excavation within the PRZ of trees is carried out with arboricultural supervision. • When machinery is to be used beneath the root zone of any tree, track movement must be kept to a minimum and undertaken on track mats or plywood where the ground is not to be excavated.

		• Protective fencing should be installed wherever practicable at the protected root zone (dripline) edge of trees. • Any required pruning works are to be undertaken by a suitably qualified arborist
E17.3 Policies		
(1)	Balance the safe and efficient development, operation, use, maintenance and upgrading of infrastructure, utilities, and road network with the protection of trees in roads.	The Arboriculture Assessment provides a range of protective methods so that any affected trees from the proposed works are protected. Refer to the column above.
(3)	Manage trees in roads to protect their cultural, amenity, landscape and ecological values while acknowledging that multiple uses occur in roads.	The alignment of the proposed works is necessary to ensure efficient connections can be made to the existing wastewater network. However, to protect the cultural, amenity, landscape and ecological values of the street trees, the Arboriculture Assessment has provided measures, as outlined above.
D13 Notable Trees		
D13.2. Objective		
(1)	Notable trees and notable groups of trees are retained and protected from inappropriate subdivision, use and development.	There are Notable Tulip Trees within Mayoral Drive, adjacent to the works. These trees will be retained. There are a group of Notable trees along Vincent Street, which are not being affected.
D13.3. Policies		
(2)	Require notable trees and notable groups of trees to be retained and protected from inappropriate subdivision, use and development, by considering: a) the specific attributes of the tree or trees including the values for which the tree or trees have been identified as notable; b) the likelihood of significant adverse effects to people and property from the tree or trees; c) the degree to which the subdivision, use or development can accommodate the protection of the tree or groups of trees; d) the extent to which any trimming, alteration or removal of a tree is necessary to accommodate efficient operation of the road network, network utilities or permitted development on the site; e) alternative methods that could result in retaining the tree or trees on the site, road or reserve;	The Notable trees will be retained. Refer to the Arboriculture Assessment (Appendix I) for assessment of the works against the trees.

	f) whether minor infringements of the standards that apply to the underlying zone would encourage the retention and enhancement of the tree or trees on the site; g) whether the values that would be lost if the tree or trees are removed can be adequately mitigated; h) whether the proposal is consistent with best arboricultural practice; i) methods to contain and control plant pathogens and diseases including measures for preventing the spread of soil and the safe disposal of plant material; and j) the provision of a tree management or landscape plan.	
E25 Noise and vibration		
E25.2 Objectives		
(1)	People are protected from unreasonable levels of noise and vibration.	A comprehensive management plan for construction noise and vibration is included within Appendix G of the application. This plan details physical and managerial mitigation measures to be implemented in order to protect people from unreasonable levels of noise, including: • Adopting the CNVMP, communicating with any relevant neighbouring properties. • Physical mitigation measures: installing acoustic site hoardings around the construction sites, selection of equipment, setback distance for the dewatering pump from buildings. • Managerial mitigation measures: site-specific training, operating high noise generating equipment between certain times, acoustic testing/monitoring of on-site machinery, etc.
(3)	Existing and authorised activities and infrastructure, which by their nature produce high levels of noise, are appropriately protected from reverse sensitivity effects where it is reasonable to do so.	
(4)	Construction activities that cannot meet noise and vibration standards are enabled while controlling duration, frequency, and timing to manage adverse effects.	
E25.3 Policies		
(1)	Set appropriate noise and vibration standards to reflect each zone's function and permitted activities, while ensuring that the potential adverse effects of noise and vibration are avoided, remedied or mitigated.	Construction noise will be kept to the minimum possible level using the best practicable option for construction to take place.
(2)	Minimise, where practicable, noise and vibration at its source or on the site from which it is generated to mitigate adverse effects on adjacent sites.	

(10)	Construction, demolition and maintenance activities Avoid, remedy or mitigate the adverse effects of noise and vibration from construction, maintenance and demolition activities while having regard to: (a) the sensitivity of the receiving environment; and (b) the proposed duration and hours of operation of the activity; and (c) the practicability of complying with permitted noise and vibration standards.	As this upgrade of wastewater infrastructure is needed to serve the growing population in the City Centre, it is essential for construction activities to occur in this location. Hence, the project is not inconsistent with these policies.
E26 Infrastructure		
E26.2.1 Objectives		
(1)	The benefits of infrastructure are recognised.	The purpose of the Project is to upgrade the City Centre's wastewater network, which is critical infrastructure for the functioning of the area. This project will improve the resilience of both the wastewater and stormwater networks by reducing the frequency of wet weather overflows in the upper catchment of Auckland City Centre and will provide for future residential and commercial growth enabled by the City Rail Link project.
(2)	The value of investment in infrastructure is recognised.	
(3)	Safe, efficient and secure infrastructure is enabled, to service the needs of existing and authorised proposed subdivision, use and development.	
(4)	Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.	
(5)	The resilience of infrastructure is improved and continuity of service is enabled.	
(6)	Infrastructure is appropriately protected from incompatible subdivision, use and development, and reverse sensitivity effects.	
(9)	The adverse effects of infrastructure are avoided, remedied or mitigated.	
E26.2.2 Policies		
(1)	Recognise the social, economic, cultural and environmental benefits that infrastructure provides, including: (a) enabling enhancement of the quality of life and standard of living for people and communities; (b) providing for public health and safety; (c) enabling the functioning of businesses; (d) enabling economic growth; (e) enabling growth and development; (f) protecting and enhancing the environment;	The project serves the community by providing wastewater infrastructure in an already highly modified urban environment. This project will enhance the liveability of the City Centre area. Without these works, the wastewater network will incur increasing overflow incidents, jeopardising public health and safety. Installed fully underground, the new pipeline will have no permanent visual effects on the urban landscape, including no permanent effect on the views of Auckland's volcanic cones. The Notable Trees within the Mayoral Drive

	(g) enabling the transportation of freight, goods, people; and (h) enabling interaction and communication.	corridor will be retained. The Project will not extend into sensitive areas such as the Historic Heritage Overlay and Sites of Significance to Mana Whenua Long-term adverse effects on the environment can be avoided, remedied or mitigated. Short-term construction impacts have been avoided where possible and management and mitigation measures are suggested where they are unable to be avoided.
(2)	Provide for the development, operation, maintenance, repair, upgrade and removal of infrastructure throughout Auckland by recognising: (a) functional and operational needs; (b) location, route and design needs and constraints; (c) the complexity and interconnectedness of infrastructure services; (d) the benefits of infrastructure to communities within Auckland and beyond; (e) the need to quickly restore disrupted services; and (f) its role in servicing existing, consented and planned development.	
(4)	Adverse effects of infrastructure Require the development, operation, maintenance, repair, upgrading and removal of infrastructure to avoid, remedy or mitigate adverse effects, including, on the: (a) health, well-being and safety of people and communities, including nuisance from noise, vibration, dust and odour emissions and light spill; (b) safe and efficient operation of other infrastructure; (c) amenity values of the streetscape and adjoining properties; (d) environment from temporary and ongoing discharges; and (e) values for which a site has been scheduled or incorporated in an overlay.	
(5)	Consider the following matters when assessing the effects of infrastructure: (a) the degree to which the environment has already been modified; (b) the nature, duration, timing and frequency of the adverse effects; (c) the impact on the network and levels of service if the work is not undertaken; (d) the need for the infrastructure in the context of the wider network; and (e) the benefits provided by the infrastructure to the communities within Auckland and beyond.	
(7)	Enable the following activities within natural heritage, natural resources, coastal environment, historic heritage, special character and Mana Whenua cultural heritage overlays: (a) the use and operation of existing infrastructure; and	The pipeline is to be installed underground within the road reserve and will not permanently affect the views of Auckland's volcanic cones. The Notable Trees within Mayoral Drive will be retained. The works will not infringe on the mapped extent of place for these historic buildings. Watercare has engaged

	(b) the minor upgrading, maintenance and repair of existing infrastructure, while ensuring that the adverse effects on the values of the area are avoided and where those effects cannot practicably be avoided, minimise any such effects and ensure they are appropriately remedied or mitigated.	with Mana Whenua regularly throughout the planning of these works to ensure they are aware of the infrastructure's positive impact.
(8)	Encourage new linear infrastructure to be located in roads, and where practicable within the road reserve adjacent to the carriage way.	
E30 Contaminated Land		
E30.2 Objectives		
(1)	The discharge of contaminants from contaminated land into air, or into water, or onto or into land are managed to protect the environment and human health and to enable land to be used for suitable activities now and in the future.	Extensive investigation has been carried out to ensure that no unexpected discharge of contaminants harms human or environmental health as part of these construction works. A DSI has been completed to establish locations where soil containing contaminants may exist and to identify where the application of NES CS and AUP requirements is necessary.
E30.3 Policies		
(1)	Identify and record the details of land containing elevated levels of contaminants in a public register.	An SMP has been developed and is submitted with this application. The SMP outlines the procedures and processes to be undertaken to manage soil disturbance and disposal during construction, and any manage any unexpected soil contamination.
(2)	Require any use or development of land containing elevated levels of contaminants resulting in discharges to air, land or water to manage or remediate the contamination to a level that: a) allows contaminants to remain in the ground/groundwater, where it can be demonstrated that the level of residual contamination is not reasonably likely to pose a significant adverse effect on human health or the environment; and b) avoids adverse effects on potable water supplies; and c) avoids, remedies or mitigates significant adverse effects on ecological values, water quality, human health and amenity values; while d) taking into account all of the following: e) the physical constraints of the site and operational practicalities; f) the financial implications of the investigation, remediation, management and monitoring options; g) the use of best practice contaminated land management, including the preparation and consideration of preliminary and	

	h) detailed site investigations, remedial action plans, site validation reports and site management plans for the identification, monitoring and remediation of contaminated land; and whether adequate measures are in place for the transport, disposal and tracking of contaminated soil and other contaminated material removed from a site to prevent adverse effects on the environment.	

AUP Standards

The following table provides an assessment of the proposed works against the relevant permitted activity and restricted discretionary standards of the AUP.

Permitted Activity Standards

Auckland Unitary Plan - Permitted Activities		
Activity	Standards	Comment
E25.4.1 (A1) Construction Noise and Vibration in the Road Reserve.	E25.6.29 Construction noise and vibration levels for work within the road (3) The noise levels specified in Standard E25.6.29(1) above do not apply to unplanned repair or maintenance works or planned works in the road corridor between the hours of 7am and 10pm where: (b) because of the nature of the works and the proximity of receivers the noise generated cannot be practicably made to comply with the relevant noise levels of the following tables: (i) Table E26.6.27.1 Construction noise limits for activities sensitive to noise in all zones except the Business - City Centre Zone and the Business – Metropolitan Centre Zone; (ii)Table E25.6.27.2 Construction noise levels for noise affecting any other activity; or (iii)Table E25.6.28.1 Construction noise levels for construction less than 15 consecutive calendar days duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone; or (iv)Table E25.6.28.2 Construction Noise levels for construction of 15 consecutive calendar days or more duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone; or (c) for planned works, a copy of the works access permit issued by Auckland Transport or approval from the New Zealand Transport	As assessed in the Construction Noise and Vibration Assessment in **Appendix G**, tunnelling and open-cut works in the road corridor will occur below ground as part of the works. As per the AUP standards, a Construction Noise and Vibration Management Plan is submitted alongside this application. Council will be notified of the works at least five days prior to their start.

	Agency is provided to the Council five days prior to work commencing; or (d) for planned works where the works will take more than 8 hours to complete a construction noise and vibration management plan is provided to the Council no less than five days prior to the works commencing in accordance with the applicable provisions of Standard E25.6.29(5) below (4A) The vibration levels specified in E25.6.29(1A)(b) do not apply to works within the road where: (b) a construction noise and vibration management plan is provided to the Council no less than five days prior to the works commencing in accordance with the applicable provisions of Standard E25.6.29.(5) below. (5) construction noise and vibration management plan must be prepared by a suitably qualified and experienced person and include the following: (a) details of the community consultation to be undertaken to advise the occupiers of properties located within 100m of the proposed works of all of the following: (i) the area affected by the work; (ii) why the work is required to be undertaken at night (where relevant); (iii) the times and days when the noise and vibration is likely to be generated; (iv) a contact name and number of the works supervisor who can be contacted if any issues arise and (v) how noise and vibration complaints will be managed and responded to; (b) a description of the works and its duration, anticipated equipment to be used, the processes to be undertaken, and the predicted noise and vibration levels; and (c) identification of the best practicable options that will be undertaken to mitigate and minimise any noise and vibration being produced that is likely to exceed the relevant levels of the following tables: (i) Table E26.6.27.1 Construction noise limits for activities sensitive to noise in all zones except the Business - City Centre Zone and the Business – Metropolitan Centre Zone; (6) For the purpose of Standards E25.6.29(1) to E25.6.29(4A) above: (a) planned work means work that has been planned to take place at least seven days before the work commences;	

	(b) the measurement and assessment of all construction noise must be in accordance with New Zealand Standard NZS 6803:1999 Acoustics – Construction noise; and (c) the measurement of all vibration must be in accordance with E25.6.30 Vibration.	
Network utilities and electricity generation – all zones and roads General Rule E26.2.3.1 (A3) Service connections; E26.2.3.1 (A8) Pipes and cables for the conveyance of water, wastewater, stormwater, electricity, gas, and telecommunications Water, wastewater and stormwater structures E26.2.3.1 (A49) Underground pipelines and ancillary structures for the conveyance of water, wastewater and stormwater (including above ground ancillary structures associated with underground pipelines) E26.2.3.1 (A57) Ventilation facilities, drop shafts and manholes	No relevant standards	The Project is a new underground pipeline for the conveyance of wastewater, which will connect to the existing Part 3 – Part 4 Connector tunnel.

Network utilities and electricity generation – Trees in roads and open space zones **E26.4.3.1. (A83)** Tree trimming or alteration	E26.4.5. General Standards District E26.4.5.1. Trees in roads and open space zones - tree trimming or alteration (1) Tree trimming or alteration of trees in streets and open space zones must comply with the following standards: (a) the maximum diameter of any branch removed must be no greater than 100mm; (b) no more than 20 per cent of live growth of the tree must be removed which can be increased to 30 per cent under the direct supervision of a suitably qualified arborist; (c) the natural shape, form and branch habit of the tree must be retained for trees in public open space; (d) the natural shape, form and branch habit of the tree must be retained for trees in streets where practicable; and (e) All works must be carried out in accordance with best arboricultural practice.	The pruning of two street trees (Tree 6 & 8) to enable the installation of shaft edge sheet piles and the delivery of materials and operation of machinery and equipment is a permitted activity as branches no larger than 100mm in diameter would need to be pruned, and less than 20% of the canopy would be pruned or altered, ensuring the trees retain a largely natural shape despite their already modified form. All pruning works are to be undertaken by a suitably qualified arborist under the direction of a works arborist. The works arborist is to confirm any required pruning at the time of the initial pre-construction meeting (as canopy growth may have changed from tw time of writing this report to the start of construction).
E26.4.3.1. (A87): Works within the protected root zone in road and public open spaces that comply with Standard E26.4.5.2	E26.4.5.2. Trees in roads and open space zones - works within the protected root zone (non-notable) (2) For roots less than 80mm: (a) excavation undertaken by hand digging or air spade or hydro vac or machine excavator within the protected root zone with direction and/or supervision of a qualified arborist: (i) works must not disturb more than 20% of the protected root zone; (ii) works involving root pruning must not be on roots greater than 80mm in diameter at severance; (iii) any machine excavator must operate on top of paved surfaces and/or ground protection measures and must be fitted with a straight blade bucket;	Excavation and associated compound works within the PRZ of the three protected street trees (Trees 6-8) can comply. All cut excavations will be supervised, with a works arborist to be engaged for the duration of the physical works phase. As identified within Section 4.1, the excavation to develop the shafts will not disturb more than 20% of the PRZs of Trees 6-8). The works will not involve pruning of roots greater than 80mm in diameter at severance. When excavating the shafts near Trees 6-8, the excavator will be fitted with a straight blade bucket and will sit on a paved surface.

E26.5 Network Utilities and electricity generation – Earthworks all zones and roads E26.5.3.1 (A95) Earthworks up to 2500m^2 other than for maintenance, repair, renewal, minor infrastructure upgrading E26.5.3.1 (A96) Earthworks up to 2500m^3 other than for maintenance, repair, renewal, minor infrastructure upgrading E26.5.3.2 (A101) Earthworks up to 10,000m^2 where land has a slope less than 10 degrees outside the Sediment Control Protection Area other than for maintenance, repair, renewal, minor infrastructure upgrading	E25.5.5.2 General Standards Regional (1) Earthworks associated with the operation, repair, renewal, upgrading and maintenance of existing roads, will be undertaken within the legal road or the formation width of existing roads if this extends beyond the legal road width. (2) Land disturbed for the operation, repair, renewal, upgrading or maintenance of utilities will be stabilised by re-vegetation, grassing or other suitable means as soon as practicable after completion of the works to avoid erosion and scouring. (3) Land disturbance must not, after reasonable mixing, result in any of the following effects in receiving waters: the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials; any conspicuous change in the colour or visual clarity; any emission of objectionable odour; the rendering of fresh water unsuitable for consumption by farm animals; or any significant adverse effects on aquatic life. (4) Best practice erosion and sediment control measures must be implemented for the duration of the land disturbance. Those measures must be installed prior to the commencement of land disturbance and maintained until the site is stabilised against erosion. Note 1 Best practice in Auckland is generally deemed to be compliance with Auckland Council Technical Publication 90 Erosion and Sediment Control Guideline for Land Disturbing Activities in the Auckland Region or similar design. (5) Dewatering of trenches and other excavations must be done in accordance with best practice and must not result in a discharge of	As per the Erosion and Sediment Control Plan in **Appendix L**, all earthworks will be managed to ensure land stability, access to public footpaths and minimisation of dust. The works will not result in any instability of land or structures once the works are complete as per the Design and Construction Statement in **Appendix C** and the Assessment of Dewatering Effects in **Appendix J**. Land disturbance caused by the works will be managed to avoid any potential damage or malfunctioning of network utilities. This will be detailed in the Construction Management Plan submitted to Council prior to the start of works. Access to public footpaths around the CSA sites on Mayoral Drive will need to be partially restricted to manage public safety in the area, and to construct a shaft, however footpaths will be provided on at least one side of all roads within the project area. Only cleanfill material will be used if required by infill works for shafts and trenching works. This will be detailed in the Construction Management Plan. As per the ESCP, dust management procedures will be put in place to avoid any nuisance caused by dust exposure. This will be further detailed in the Construction Management Plan. With the proposed mitigation measures, earthworks to establish to construction shaft within the floodplain at the Greys Avenue CSA site will not raise the ground level or result in any adverse effects on the flow of stormwater. This is detailed in the Flood Hazard Assessment in **Appendix K.**

	untreated sediment laden water to any stormwater reticulation system or water body. (6) Trenching must be progressively closed and stabilised such that no more than 120m of continuous trench is exposed to erosion at any one time. (7) Only cleanfill material may be imported and utilised as part of the land disturbance. (8) To prevent the spread of contaminated soil and organic material with kauri dieback disease, vehicle and equipment hygiene procedures must be adopted when working within 3 times the radius of the canopy drip line of a New Zealand kauri tree. Soil and organic material from land disturbance within 3 times the radius of the canopy drip line must not be transported beyond that area unless being transported to landfill for disposal. District (9) Earthworks associated with the operation, repair, renewal, upgrading and maintenance of existing roads, will be undertaken within the legal road or the formation width of existing roads if this extends beyond the legal road width. (10) Land disturbed for the operation, renewal, repair, upgrading or maintenance of utilities outside the formation width of existing roads or abutments, or within an overland flow path, will be reinstated to the ground level prior to the works being undertaken as soon as practicable after completion of the works. (11) Land disturbed for the operation, repair, renewal, upgrading or maintenance of utilities will be stabilised by re-vegetation, grassing or other suitable means as soon as practicable after completion of the works to avoid erosion and scouring. (12) Land disturbance within Riparian Yards and Coastal Protection Yards are limited to: (a) operation, maintenance and repair (including network utilities); (b) less than $5m^2$ or $5m^3$ for general earthworks; (c) less than $10m^2$ or $5m^3$ for the installation of new network utilities; (d) installation of fences and walking tracks; (e) burial of marine mammals.	

	(13) Works must not result in any instability of land or structures at or beyond the boundary of the property where the land disturbance occurs. (14) The land disturbance must not cause malfunction or result in damage to network utilities, or change the cover over network utilities so as to create the potential for damage or malfunction. (15) Access to public footpaths, berms, private properties, network utilities, or public reserves must not be obstructed unless that is necessary to undertake the works or prevent harm to the public. (16) Only cleanfill material may be imported and utilised as part of the land disturbance. (17) Measures must be implemented to ensure that any discharge of dust beyond the boundary of the site is avoided or limited such that it does not cause nuisance. (18) Earthworks (including filling) within a 1% AEP flood plain (excluding road network activities): (a) must not raise ground levels more than 300mm, to a total fill volume up to 10m3 which must not be exceeded through multiple filling operations; and (b) must not result in any adverse changes in flood hazard beyond the site. Note 1 This standard does not limit excavation and replacement of fill to form building platforms, where those works do not raise ground levels. (19) Earthworks (including filling) within overland flow paths (excluding road network activities) must maintain the same entry and exit point at the boundaries of a site and not result in any adverse changes in flood hazards beyond the site, unless such a change is authorised by an existing resource consent. (20) Temporary land disturbance and stockpiling of soil and other materials within 1% AEP flood plain and/or overland flow path for up to a maximum of 28 days in any calendar year may occur as part of construction or maintenance activities. (21) Burial of marine mammals must be undertaken by the Department of Conservation or the agents of the Department of Conservation.	

	(22) Land disturbance around Transpower NZ Ltd electricity transmission line poles must: (a)be no deeper than 300mm within 2.2m of a transmission pole support structure or stay wire; and (b) be no deeper than 750mm within 2.2 to 5m of a transmission pole support structure or stay wire; except that: (c) vertical holes not exceeding 500mm diameter beyond 1.5m from the outer edge of a pole support structure or stay wire are exempt from Standards E26.5.5.2(22)(a) and (b) above. (23) Land disturbance around Transpower NZ Ltd electricity transmission lines towers must: (a) be no deeper than 300mm within 6m of the outer visible edge of a transmission tower support structure; and (b) be no deeper than 3m between 6 to 12m from the outer visible edge of a transmission tower support structure. (24) Land disturbance within 12m of a Transpower NZ Ltd electricity transmission line pole or tower must not: (a)create an unstable batter that will affect a transmission support structure; or (b) result in a reduction in the ground to conductor clearance distances as required by NZECP34:2001.	
Natural Hazards E36.4.1 (A28) Storage of goods and material in the 1 per cent annual exceedance probability (AEP) floodplain	E36.6.1.6 Storage of goods and materials in the 1 per cent annual exceedance probability (AEP) floodplain (1) Goods and materials stored in the 1 per cent annual exceedance probability (AEP) floodplain for longer than 28 consecutive days must: (a) not impede flood flows; and (b) where capable of creating a safety hazard by being shifted by floodwaters, be contained and secured in order to minimise movement in times of floods; and (c) be stored in watertight containers if they are hazardous substances.	Fuel stored at the Greys Avenue CSA site for generator use will be stored outside of the overland flowpath / floodplain, in appropriate containers, as detailed in the Flood Hazard Assessment in Appendix K.
Rule E7.4.1 (A27) Dewatering and the diversion of groundwater (trenchless tunnelling only).	E7.6.1.10. Diversion of groundwater caused by any excavation, (including trench) or tunnel	The sections of the Mayoral Alignment that will be installed using pilot bore drilling and an external pipe diameter is 700 mm are therefore exempt from standards E7.6.1.10(2) –

	(1) All of the following activities are exempt from the Standards E7.6.1.10(2) – (6): (a) pipes cables or tunnels including associated structures which are drilled or thrust and are up to 1.2m in external diameter;	(6), and no dewatering will be required for the tunneled sections.

Restricted Discretionary Standards

AUP Activity – Restricted Discretionary Activity Standards		
Standards		Comment
Activity Rule E7.4.1 (A20)(A28): Restricted discretionary Diversion of groundwater caused by any excavation, (including trench) or tunnel that does not meet the permitted activity standard		
E7.6.3 Restricted Discretionary Standards E7.6.3.3. Take and use of groundwater		
(1)	The water take must not be geothermal water.	The proposed works do not involve geothermal water nor the replacement of an existing consent. The proposed water take is not for municipal water supply.
(2)	The replacement of an existing resource consent to take and use groundwater for municipal water supply purposes: (a) at the time of the application, the take is an authorised take; (b) a water management plan has been prepared; (c) the take will not result in the water availabilities and levels in Table 1 Aquifer water availabilities and Table 2 Aquifer groundwater levels, in Appendix 3 Aquifer water availabilities and levels being exceeded, except in accordance with E2 Water quantity, allocation and use Policy E2.3(11); and (d) the take must not be from an area in the Wetland Management Areas Overlay.	
Activity Rule E25.4.1 (A2): Restricted discretionary Activities that do not comply with the permitted standards for noise and vibration		
E25.6.1. General standards		
(1)	Noise levels arising from activities must be measured and assessed in accordance with the New Zealand Standard NZS 6801:2008 Measurement of environmental sound and the New Zealand Standard NZS 6802:2008 Acoustics - Environmental noise except where more specific requirements apply.	To quantify the ambient noise environment, ambient noise measurements were undertaken along the Project area on Wednesday 15 November 2023, from 0730 to 1600 hours. Noise measurements were in general accordance with NZS 6801:2008 Acoustics – Measurement of Environmental Sound.

(2)	The application of an adjustment for noise containing special audible characteristics in terms of Appendix B4 Special Audible Characteristics in New Zealand Standard NZS 6802:2008 Acoustics – Environmental noise may apply to the A weighted level for any measurement but an adjustment must not be applied to any level measured in the 63Hz and 125Hz octave bands.	N/A
(3)	The noise from any construction work activity must be measured and assessed in accordance with the requirements of New Zealand Standard NZS6803:1999 Acoustics – Construction noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.	As per **Appendix G**, construction noise levels have been measured in accordance with NZS6803:1999.
(4)	The noise limits of the Plan do not apply to emergency service sirens and callout sirens during emergency situations.	N/A
(5)	Where more than one standard applies that requires insulation of a noise sensitive space from an external noise source, the standards must be applied cumulatively.	
(6)	Where standards are provided for specific activities, the zone interface standards and the zone standards do not apply to that activity.	
E25.6.28 Construction noise levels in the Business – City Centre Zone and the Business – Metropolitan Centre Zone		
(1)	Construction activities in the Business – City Centre Zone and the Business – Metropolitan Centre Zone must comply with Standard E25.6.27(1) above for any receiver not in a Business – City Centre Zone or a Business – Metropolitan Centre Zone and must not exceed the levels in Table E25.6.28.1 Construction noise levels for construction less than 15 consecutive calendar days duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone and Table E25.6.28.2 Construction noise levels for construction of 15 consecutive calendar days or more duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone when measured for any 30 minute period 1m from the façade of any building in the Business – City Centre Zone or the Business – Metropolitan Centre Zone that is occupied during the work.	As per the CNVA in **Appendix** G, three properties (321, 323-327, and 329 Queen Street), in the Business – City Centre Zone receive a level of noise exceeding the AUP limits in Table E25.6.28.2. Although a noise exceedance is recorded at these properties, these will be reasonable and are not deemed to determine the property be an affected party under the RMA.

Table E25.6.28.1 Construction noise levels for construction less than 15 consecutive calendar days duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone

Construction of less than 15 consecutive calendar days duration (total duration of works)		
Time	**$L_{Aeq(30\ min)}$**	**L_{AFmax}**
Monday to Friday 6.30am - 10.30pm	80 dB	90 dB
Saturday 7am - 11pm	85 dB	90 dB
Sunday 9am - 7pm	80 dB	90 dB
All other times (night time)	60 dB	75 dB
All other times in the City Centre Residential Precinct and the Learning Precinct	55 dB	75 dB

Table E25.6.28.2 Construction noise levels for construction of 15 consecutive calendar days or more duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone

Construction of 15 consecutive calendar days or more (total duration of works)		
Time	**$L_{Aeq(30\ min)}$**	**L_{AFmax}**
Monday to Friday 6.30am-10.30pm	75 dB	90 dB
Saturday 7am-11pm	80 dB	90 dB
Sunday 9am-7pm	65 dB	85 dB
All other times (night time)	60 dB	75 dB
All other times in the City Centre Residential Precinct and the Learning Precinct	55 dB	75dB

Where external measurement of construction noise is impractical or inappropriate, the upper limits for the noise measured inside the building will be 20dB less than the relevant levels in Table E25.6.28.1 Construction noise levels for construction less than 15 consecutive calendar days duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone and Table E25.6.28.2 Construction noise levels for construction of 15 consecutive calendar days or more duration in the Business – City Centre Zone and the Business – Metropolitan Centre Zone above.

Activity Rule E30.4.1 (A6): Controlled standards Discharge of contaminants into the air, water or land that does not meet the permitted activity standard		
E30.6.2.1. Discharges of contaminants into air, or into water, or onto or into land not meeting permitted activity standards E30.6.1.1; E30.6.1.2; E30.6.1.3; E30.6.1.4; or E30.6.1.5		
(1)	A detailed site investigation (contaminated land) must be prepared and submitted to Council for consideration.	A DSI and SMP have been carried out at site and summarised within the AEE. All applicable AUP standards have been met within this reporting.
(2)	A site management plan (contaminated land) must be prepared and submitted to Council for consideration.	

(3)	A remedial action plan (contaminated land), relevant to the site and the proposed disturbance or remediation must be prepared and submitted to Council for consideration.	
(4)	The report on the detailed site investigation (contaminated land) must state either that: a) the concentrations of soluble contaminants in any of the following: *i. overland stormwater at the site boundary,* *ii. surface water within the site, or* *iii. groundwater at the site boundary must not exceed the guideline values specified in Table 3.4.1 Trigger values for toxicants at alternative levels of protection in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000 Guidelines) for marine or freshwater, where relevant, at the level of protection for 80 per cent of species, except for benzene where 95 per cent of species shall apply; or* b) discharges from the land are highly unlikely to cause significant adverse effects on the environment; or c) the contamination associated with the land must be contained beneath a continuous impervious layer and must be located above the highest seasonal groundwater level beneath the site.	
Activity Rule E26.4.3.1 Works within the protected root zone not otherwise provided for (A88): Restricted Discretionary		
(2)	(a) for tree trimming or alteration not meeting Standard E26.4.5.3: (i) N/A (ii) N/A (b) for work within the protected root zone not otherwise provided for: (i) the methods proposed to reduce any adverse effects of the works, including the depth of the works; and (ii) the extent of area of the protected root zone or zones that is affected.	The Arboriculture Assessment (**Appendix I**) provides a range of protective methods so that any affected street trees from the proposed works are protected, such as: • Excavation within the PRZ of trees is carried out with arboricultural supervision. • When machinery is to be used beneath the root zone of any tree, track movement must be kept to a minimum and undertaken on track mats or plywood where the ground is not to be excavated. • Protective fencing should be installed wherever practicable at the protected root zone (dripline) edge of trees.

AUP Assessment Criteria

The following is an assessment of the applicable activities against the assessment criteria provided within the AUP.

AUP Restricted Discretionary Activity Assessment Criteria		
Rule E7.4.1 (A20): Restricted Discretionary Dewatering or groundwater level control associated with a groundwater diversion authorised as a restricted discretionary activity under the Unitary Plan, not meeting permitted activity standards or is not otherwise listed. & Rule E7.4.1 (A28): Restricted Discretionary Diversion of groundwater caused by any excavation, (including trench) or tunnel that does not meet the permitted activity standards.		
E7.8.2 Assessment Criteria		
(1)	all restricted discretionary activities: (a) the extent to which any effects on Mana Whenua values are avoided, remedied or mitigated; (b) the extent to which the proposal will be consistent with the management of allocation of freshwater within the guidelines provided by Appendix 2 River and stream minimum flow and availability and Appendix 3 Aquifer water availabilities and levels, and give priority to making fresh water available for the following uses (in descending order of priority): *i. existing and reasonably foreseeable domestic and municipal water supply and animal drinking water requirements;* *ii. existing lawfully established water users;* *iii. uses of water for which alternative water sources are unavailable or unsuitable;* *iv. all other uses*	The proposed works do not involve the use of fresh or geothermal water from a lake, river, spring, stream or wetland. An assessment of effects is contained in **Appendix J** and considers that adverse effects will be less than minor. Monitoring of groundwater drawdown and settlement effects during construction is proposed to ensure that no unexpected effects occur.
(2)	Whether the proposal promotes the efficient use of freshwater and geothermal water by: (a) ensuring the amount of water taken and used is reasonable and justifiable with regard to the intended use, and where appropriate: *i. municipal water supplies are supported by a water management plan*	

	ii. an industrial and irrigation supply implements best practice in respect of the efficient use of water for that particular activity or industry *iii. all takes (other than for municipal water supply from dams) are limited to a maximum annual allocation based on estimated water requirements* (b) considers water conservation and thermal efficiency methods (c) encourages the shared use and management of water within a water user groups or other arrangement where it will results in an increased efficiency in the use and allocation of water.	
(4)	Whether the proposal to take and use groundwater from any aquifer demonstrates that: (a) the take is within the water availabilities and levels for the aquifer in Table 1 Aquifer water availabilities and Table 2 Aquifer groundwater levels, in Appendix 3 Aquifer water availabilities and levels and: *i. recharge to other aquifers is maintained;* *ii. aquifer consolidation and surface subsidence is avoided;* (b) the taking will avoid, remedy or mitigate adverse effects on surface water flows, including: *i. base flow of rivers, streams and springs;* *ii. any river or stream flow requirements;* (c) the taking will avoid, remedy or mitigate adverse effects on terrestrial and freshwater ecosystem habitat; (d) the taking will not cause saltwater intrusion or any other contamination; (e) the taking will not cause adverse interference effects on neighbouring bores to the extent their owners are prevented from exercising their lawfully established water takes; (f) (f) E7.8.2(5)(e)above will not apply in the following circumstances: *i. where it is practicably possible to locate the pump intake at a greater depth within the affected bore;* *ii. where it can be demonstrated that the affected bore accesses, or could access, groundwater at a deeper level within the same aquifer, if drilled or cased to a greater depth;*	The dewatering assessment in Appendix J details how the necessary extraction of water from the construction site will be appropriately managed. This assessment considers effects on surface water flows, freshwater ecosystems, saltwater intrusion and neighbouring bores. Overall, it is considered that the proposed take of groundwater during construction will have a negligible effects on these matters. Settlement effects on neighbouring buildings and structures is also assessed as negligible, and monitoring during construction is proposed to ensure no unexpected effects occur. The groundwater take will only occur during construction works, ensuring there will be no long term effects on the aquifer.

	(g) the proposed bore is capable of extracting the quantity of groundwater applied for; (h) the proposal avoids, remedies or mitigates any ground settlement that may cause distress, including reducing the ability of an existing building or structure to meet the relevant requirements of the Building Act 2004 or the New Zealand Building Code, to existing: *i. buildings;* *ii. structures; and* *iii. services including roads, pavements, power, gas, electricity, water supply and wastewater networks and fibre optic cables.*	
(5)	Whether the proposal provides mitigation options where there are significant adverse effects on the matters identified in E7.8.2(3) and (4) above, including the following: (a) consideration of alternative locations, rates and timing of takes for both surface water and groundwater; (b) use of alternative water supplies; (c) use of water conservation methods when water shortage conditions apply; (d) provision for fish passage in rivers and streams; (e) wetland creation or enhancement of existing wetlands; (f) riparian planting; and (g) consideration of alternative designs for groundwater dewatering proposals.	
(6)	Whether the proposal to take and use surface water and groundwater will monitor the effects of the take on the quality and quantity of the freshwater resource to: (a) measure and record water use and rate of take; (b) measure and record water flows and levels; (c) sample and assess water quality and freshwater ecology; and (d) measure and record the movement of ground, buildings and other structures.	
(7-9)	(a) N/A	
(10)	Whether the proposal to divert groundwater will ensure that: (a) the proposal avoids, remedies or mitigates any adverse effects on: *i. scheduled historic heritage places and scheduled sites; and* *ii. people and communities;* (b) the groundwater diversion does not cause or exacerbate any flooding; (c) monitoring has been incorporated where appropriate, including: *i. measurement and recording of water levels and pressures; and*	No historic/heritage buildings have been identified within 10 m of the works. The dewatering works are not anticipated to cause or exacerbate flooding. Monitoring during construction works is proposed to ensure that no unexpected effects arise.

	ii. measurement and recording of the movement of ground, buildings and other structures; (d) mitigation has been incorporated where appropriate including: *i. minimising the period where the excavation is open/unsealed;* *ii. use of low permeability perimeter walls and floors;* *iii. use of temporary and permanent systems to retain the excavation; and* *iv. re-injection of water to maintain groundwater pressures;*	
Chapter E25 Noise and Vibration Rule E25.4.1 (A2): Restricted Discretionary		
E25.8.2 Assessment Criteria		
(1)	for noise and vibration: (a) whether activities can be managed so that they do not generate unreasonable noise and vibration levels on adjacent land uses particularly activities sensitive to noise; (b) the extent to which the noise or vibration generated by the activity: (i) will occur at times when disturbance to sleep can be avoided or minimised; and (ii) will be compatible with activities occurring or allowed to occur in the surrounding area; and (iii) will be limited in duration, or frequency or by hours of operation; and (iv) will exceed the existing background noise and vibration levels in that environment and the reasonableness of the cumulative levels; and (v) can be carried out during daylight hours, such as road works and works on public footpaths. (c) the extent to which the effects on amenity generated by vibration from construction activity: (i) will be mitigated by written advice of the activity to adjacent land uses prior to the activity commencing; and (ii) can be mitigated by monitoring of structures to determine risk of damage to reduce occupant concern; and (iii) can be shown to have been minimised by the appropriate assessment of alternative options; and (iv) are reasonable taking into account the level of vibration and the duration of the activity (where levels of 10mm/s peak particle velocity may be tolerated only for very brief periods). (d) whether the measures to minimise the noise or vibration generated by the activity represent the best practicable option.	A comprehensive management plan for construction noise and vibration is included within Appendix G of the application. This plan details physical and managerial mitigation measures to be implemented in order to protect people from unreasonable levels of noise, including: • Adopting the CNVMP, communicating with any relevant neighbouring properties. • Physical mitigation measures: installing acoustic site hoardings around the construction sites, selection of equipment, setback distance for the dewatering pump from buildings. • Managerial mitigation measures: site-specific training, operating high noise generating equipment between certain times, acoustic testing/monitoring of on-site machinery, etc

(2-3)	N/A	
(4)	for noise in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone, Business – Local Centre Zone, Business – Neighbourhood Centre Zone or the Business – Mixed Use Zone: (a) in addition to the assessment criteria in E25.8.2(1) above, all of the following will be considered: (i) the background noise at the affected receivers and the extent to which this is proposed to be exceeded; (ii) the level of existing sound insulation (where that information is available) and ventilation options for affected receivers existing as at the date of notification of the Plan; and (iii) the frequency and duration of the exceedance.	
(5)	N/A	
Chapter E30 Contaminated Land Rule E30.4.1 (A6): Controlled Discharge of contaminants into the air, water or land that does not meet the permitted activity standards		
E30.7.2. Assessment [sic] criteria		
(1)	(i) whether the reports and information provided adequately address the effects of discharges into air, or into water, or onto or into water from contaminated land.	The DSI (**Appendix F**) addressed the effects of the contaminant discharge.
Notable Trees E26.4.7.2. Assessment criteria		
(2)	Notable Tree Overlay (a) the extent to which effects on the values of the tree or trees including any effects on the natural shape, form and branch habit and the root network can be minimised; (b) the extent to which any impact on the immediate or long term health and stability of the tree or trees is able to be minimised or avoided; (c) the risk of actual damage to people and property from the tree or trees including the extent to which adverse effects on the health and safety of people have been addressed; (d) the degree to which any proposed mitigation adequately responds to the effects on the tree or trees; (e) the degree to which the proposal is consistent with best arboricultural practice guidelines for tree management; (f) the need for the direction and supervision of a qualified arborist while the works are being carried out;	The trees are proposed for retention and protection as part of the works. Where construction works are undertaken near retained trees, it is recommended that all works be undertaken in accordance with the recommended tree protection measures provided in Section 5 of the Arboricultural Assessment. No adverse effects are anticipated. All trees will be retained and worked around. All works near the subject trees are to be supervised and/or monitored by the appointed works arborist. The subject trees are considered to be adequately distanced from the works to ensure their ongoing health and safety, provided the tree protected methodologies in this report are adhered to. In the case of

	(g) and the functional and operational requirements and benefits derived from infrastructure.	potential overhead clearance issues, these must be monitored by the works arborist. No trees are to be removed. Any works within the PRZ of trees to be retained will be undertaken in accordance with best arboricultural practice as outlined in Section 5 of the Arboricultural Assessment. Where works are to be undertaken within the PRZ of any trees to be retained, protected or otherwise, it is recommended that the works be supervised by a suitably qualified arborist. The proposed works will enable the installation of the proposed wastewater tunnel and associated enabling works.