Watercare Services Limited

Motions Catchment Improvement

Assessment of Effects on the Environment

August 2025

Jacobs

Watercare


Ki te ora te wai, Ka ora te whenua, Ka ora te tangata

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List of Abbreviations and Definitions

Abbreviation and definitions	Description
AEE	Assessment of Effects on the Environment
AEP	Annual Exceedance Probability
AT	Auckland Transport
AUP(OP)	Auckland Unitary Plan (Operative in Part) 2016
AVF	Auckland Volcanic Field
bgl	Below Ground Level
CAR	Corridor Access Request
CBD	Central Business District
CHI	Cultural Heritage Inventory
CNVMP	Construction Noise and Vibration Management Plan
CRL	City Rail Link
CTMP	Construction Traffic Management Plan
DSI	Detailed Site Investigation
ECBF	East Coast Bays Formation
EOP	Engineering Overflow Point
GD05	Auckland Council GD05 – Guideline Document 2016/005
GSMCP	Groundwater Settlement Monitoring and Contingency Plan
GTC	Global Tree Consent
HAIL	Hazardous Activities and Industries List
MOTAT	Museum of Transport and Technology
NESs	National Environmental Standards
NES-CS	Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
NES-F	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
NPS	National Policy Statement

Abbreviation and definitions	Description
NPS-UD	National Policy Statement for Urban Development 2020
NZCPS	New Zealand Coastal Policy Statement 2010
NZTA	New Zealand Transport Agency Waka Kotahi
PAHs	Polycyclic Aromatic Hydrocarbons
PC78	Plan Change 78
PPE	Personal Protective Equipment
PPV	Peak Particle Velocity
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
RMA	Resource Management Act 1991
SCPA	Sediment Control Protection Area
SH	Shaft
SVR	Site Validation Report
TBM	Tunnel Boring Machine
TMP	Tree Management Plan
TPHs	Total Petroleum Hydrocarbons
Watercare	Watercare Services Limited
WCR	Works Completion Report
WIWQIP	Western Isthmus Water Quality Improvement Programme

1 Executive Summary

Watercare Services Limited (Watercare) is a lifeline utility providing water and wastewater services to 1.7 million Aucklanders every day and is planning to provide for the future growth to 2.3 million people. Its services are vital for life, keeping people safe and helping communities to flourish. Watercare is responsible for municipal wastewater within Auckland and is the provider of bulk services to Pōkeno and Tuakau in the Waikato District.

Watercare's activities and programmes are funded through user charges and borrowings. Watercare are required by the Local Government (Auckland Council) Act 2009 to be a minimum-cost, cost-efficient service provider.

The Western Isthmus Water Quality Improvement Programme (WIWQIP) Motions Catchment Improvements Project (the Project) involves the construction of a new collector sewer that spans approximately 3.2 kilometres from Canada Street in Auckland's Central Business District (CBD) to Western Springs Park in Western Springs. The collector sewer will have a diameter of 1800mm and will have three branch connections. Two branch connections will go under State Highway 16 connecting the Newton Catchment to Suffolk Reserve and connecting Arch Hill Scenic Reserve and southern parts of Grey Lynn to Nixon Park. The third branch connection will connect Suffolk Reserve to Basque Park. There will also be 16 Engineered Overflow Points (EOPs) and 16 local network connections. The Project will tie into the Central Interceptor at Western Springs Park.

Watercare is seeking all relevant district and regional resource consents under Sections 9(1), 9(3), 14 and 15 of the Resource Management Act 1991 (RMA). Resource consent is required for the following reasons:

Auckland Unitary Plan (Operative in Part)

<u>Section 9 – Land Use</u>

- Rule E25.4.1 (A2): Construction noise and vibration levels will not comply with Standards E25.6.27 and E25.6.30 and therefore requires a **restricted discretionary activity** resource consent.
- Rule E26.4.3.1 (A84): Trimming of trees in open space zones and street trees is required to facilitate construction/machinery access and Rule E26.4.5.1 states that where the diameter of any branch is greater than 100mm will require resource consent as a **restricted discretionary activity.**
- Rule E26.4.3.1 (A88): Works will occur within the protected rootzone of open space zone trees and street trees where roots greater than 80mm will be encountered. Under Rule 26.4.5.2 this will require a **restricted discretionary activity** resource consent.
- Rule E26.4.3.1 (A92): Works will involve the removal of street trees and open space zone trees that are greater than 4m in height and 400mm in girth and therefore require a **restricted discretionary activity** resource consent.
- Rule E26.3.3.1 (A97): The maximum earthworks at any given time are likely to be between SH01-SH04 and be 6,100m^2. This requires requires resource consent as a **restricted discretionary activity**.

- Rule E26.3.3.1 (A97A): The maximum earthworks volume disturbed at any given time is 41,150m^3 between SH01to SH04 for tunnel spoil. This requires a **restricted discretionary activity** resource consent.
- Rule C1.9.(2): Temporary stockpiling of soil and other materials will be needed within the overland flowpaths and the 1% AEP floodplain. This will last longer than 28 days, therefore cannot comply with Standard E26.5.5.2.(20). This requires a **restricted discretionary activity** resource consent.
- Rule E27.4.1 (A5): Temporary access will be required to State Highway 16 (an arterial road in the AUP(OP) maps) from SH02 (Suffolk Reserve) and SH15 (Arch Hill Scenic Reserve). This will require a **restricted discretionary activity** resource consent.

Section 14 – Water

- Rule E7.4.1 (A20): Groundwater is expected to be encountered, and dewatering is likely needed for greater than 30 days at certain locations, therefore cannot comply with Standard E7.6.1.6. This will require a **restricted discretionary activity** resource consent.
- Rule E7.4.1 (A28): The wastewater pipeline diameter is 1.8m and groundwater diversion will be needed for more than 10 days at specific locations. Standards E7.6.1.10(2) – (6), therefore apply to the groundwater diversion activity. As the activity cannot comply with Standards E7.6.1.10(2)(b), 4(b) and 5(b) it therefore requires a **restricted discretionary activity** resource consent.

Section 15 – Discharge

- Rule E4.4.1 (A11): Groundwater will be encountered at some shaft locations, particularly at closed landfill sites. Groundwater contamination was identified at Shaft SH02 (Suffolk Reserve), where concentrations of copper, nickel, and zinc exceeded the ANZG DGVs for 80% protection criteria. However, these concentrations were below the 80% protection criteria when applying dilution and reasonable mixing. This requires a **controlled activity** resource consent.
- Rule E30.4.1 (A6): The project cannot comply with Standard E30.6.1.4(1) as lead and arsenic concentrations exceeded permitted activity criteria at SH12A and SH13. At SH12A pyrene concentrations exceeded the MfE petroleum guideline-soil acceptance criteria. Arsenic concentration (at SH09 and SH11) and lead concentration (at SH02, SH04, SH12, SH13, SH14) exceeded the Auckland background soil concentration limits. This requires a **controlled activity** resource consent.

Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS)

- Regulation 9: A Detailed Site Investigation (DSI) currently exists for the Project alignment. The DSI has established contaminant concentrations are above background soil concentrations but below any applicable human health standard for the project. As the permitted standards of Regulation 8(3) cannot be met, a **controlled activity** resource consent is needed in accordance with Regulation 9 of the NES-CS for this project.

The actual and potential adverse effects of the proposed works include those relating to groundwater settlement, construction noise and vibration, construction traffic, land disturbance including contaminated land disturbance, arboricultural effects, landscape and visual impacts and construction of infrastructure within the 1% AEP floodplain and overland flowpaths. To mitigate these effects, the following is proposed:

- Works will be undertaken in accordance with a Groundwater Settlement Monitoring and Contingency Plan (GSMCP) and a structural assessment will be conducted prior to commencement of works at 15 Fleet Street and 6 Piwakawaka Street near SH12a.
- A Construction Noise and Vibration Management Plan (CNVMP) will be finalised. This will include the installation of 2-metre high noise barriers and acoustic curtains where required at shaft construction areas. The CNVMP will also require communication with the stakeholders, real time monitoring, scheduling of works and low-vibration construction methods to be used near sensitive receivers.
- A Construction Traffic Management Plan (CTMP) will guide the management of construction phase traffic and ensure the safety of the public and the efficient operation of the road network.
- An Erosion and Sediment Control Plan (ESCP) will be implemented at shaft locations to prevent the discharge of sediment.
- A Contaminated Land Management Plan (CLMP) has been prepared to guide the handling, storage, and disposal of contaminated soil and groundwater where works are occurring on contaminated sites.
- The removal of street and open space reserve trees greater than 4m in height and/or 400mm in girth will be undertaken by an Arborist and works within the protected rootzone of trees to be retained will be supervised by an Arborist. Additionally, tree protection methodologies will apply.
- Mitigation planting of 88 trees is proposed to address the loss of 1,512m^2 of canopy cover associated with the 32 individual trees and Tree Groups 8 and 93. The mitigation planting proposed will adhere to a detailed landscape planting and maintenance plan.
- Minimising construction phase barriers to overland flow paths (OLFPs), ensuring that temporary structures' floor levels are above projected flood levels and minimising stockpiling.

Watercare is requesting that the application be publicly notified. That notwithstanding, the specialist assessments conclude that any potential adverse effects of the Project will be temporary and appropriately managed via the proposed mitigation measures and management plans. The Project will also deliver significant benefits to the community and the downstream environment.

The Assessment of Effects on the Environment (AEE) includes a statutory assessment which confirms that the proposal is consistent with the relevant objectives and policies of the Auckland Unitary Plan: Operative in Part (AUP(OP)), National Policy Statements (including the New Zealand Coastal Policy Statement (NZCPS) and National Environmental Standards (NESs))

and the Auckland Plan 2050. This assessment also demonstrates that the Project is consistent with Part 2 of the RMA.

2 Introduction

2.1 Watercare Services Limited

Watercare is a lifeline utility provider responsible for the planning, maintenance, and operation of wastewater services to communities in Auckland. Watercare's activities and programmes are funded through user charges and borrowings. Watercare is required by the Local Government (Auckland Council) Act 2009 to be a minimum-cost, cost-efficient service provider.

Watercare collects wastewater from 1.7 million people's homes, including trade waste from industry, through approximately 8,700 Km of pipelines. Watercare pumps the waste through 534 pump stations, treats approximately 410 million litres of wastewater daily through 18 treatment plants and disposes of waste in environmentally responsible ways to protect public health, the local environment and coasts and harbours.

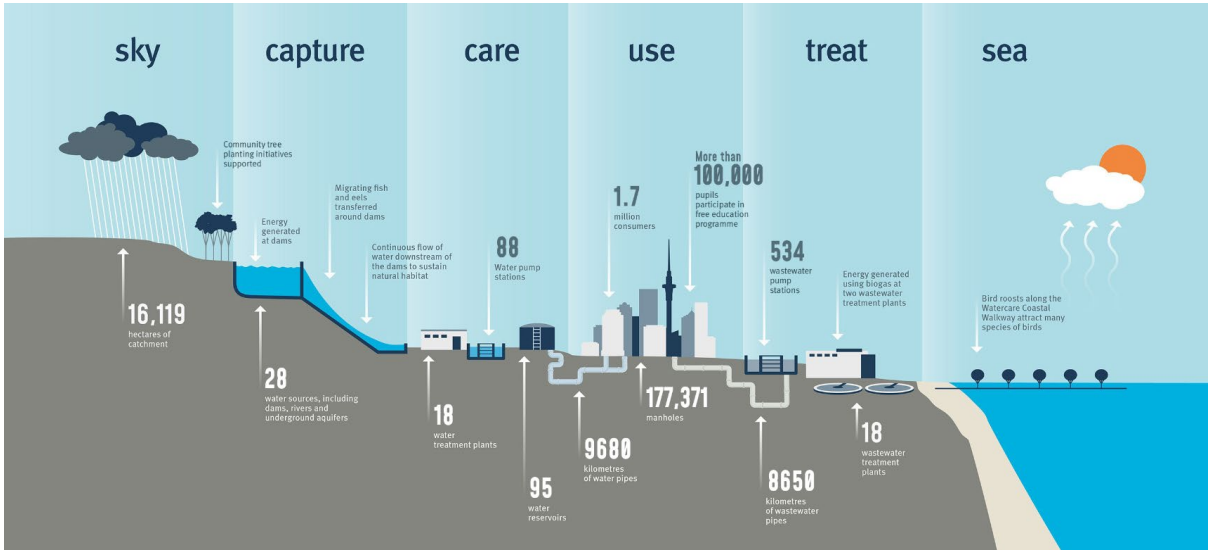

Figure 1. Overview of our assets and operation

Watercare's activities are intrinsically linked to the health of people and the natural environment. Auckland's wastewater sources must be of sufficient volume and reliability to improve the quality of beaches and waterways.

Watercare carries out significant work to upgrade and build infrastructure, to maintain levels of service and provide capacity for a fast-growing population. Watercare ensures Auckland and its people continue to enjoy dependable services by upgrading its assets, planning, building, and delivering new infrastructure in cost-efficient ways.

2.2 Background

The Western Isthmus Water Quality Improvement Programme (WIWQIP) Motions Catchment Improvements Project (the Project) involves the construction of a new collector sewer approximately 3.2 kilometres in length from Canada Street in Auckland's Central Business District (CBD) to Western Springs Park in Western Springs. The collector sewer is proposed to be a diameter ranging from 2.4m to 4.5m and will have three branch connections. Two branch connections will go under State Highway 16 connecting the Newton Catchment to Suffolk

Reserve and connecting Arch Hill Scenic Reserve and southern parts of Grey Lynn to Nixon Park. The third branch connection will connect Suffolk Reserve to Basque Park. There will also be 16 Engineered Overflow Points (EOPs) and 16 local network connections. The Project will tie into the Central Interceptor at Western Springs Park.

The Project is part of the WIWQIP which aims to significantly reduce wastewater overflows into the Waitematā Harbour in order to improve stream and beach water quality across the City's Central Western Isthmus. The aim of the Project is to build a new pipeline to collect combined wastewater, and stormwater flows from the Motions Catchment and convey these to the Central Interceptor at Point Erin Park, where they can then be safely conveyed to the Māngere Wastewater Treatment Plant. The WIWQIP is a joint initiative between Watercare and Auckland Council's Healthy Waters and Flood Resilience (Healthy Waters) that was established in 2017 and has been identified in Watercare's Asset Management Plan 2021 – 2041 as a key programme to further protect the environment and provide clean harbours and waterways.[1] At a high level, the three main goals of the WIWQIP are:

- To reduce risks to public health by alleviating uncontrolled discharges into local catchments;
- To remove the permanent health warning status of both Meola Reef and Cox's Bay; and
- To reduce intermittent beach closures in the area over the next 10 years.

The Project is a critical component of the wider WIWQIP which will enable Watercare to bring about considerable environmental benefits, reduce risks to public health and improve the amenity of the Motions catchment. For further detail regarding the proposed works and the Project's objectives, please refer to Section 4 of the Assessment of Effects on the Environment.

2.3 Purpose of this Report

This AEE has been prepared in accordance with the requirements of the RMA, in particular the Fourth Schedule, in such detail that corresponds with the scale and significance that the effects of the proposed works may have on the environment.

[1] Evidence of Stephen Webster for the Herne Bay Tunnell at [1.4].

3 Description of the Environment

3.1 Site and Surrounds

The Project will commence in the CBD towards the eastern extent of works and will traverse through the suburbs of Kingsland and Western Springs. The branch connection going underneath State Highway 16 that will tie into the collector sewer at Suffolk Reserve will connect parts of the suburb of Newton. The branch connection going underneath State Highway 16 will tie into the collector sewer at Nixon Park connecting southern portions of Grey Lynn to the Project. The majority of the collector sewer alignment is immediately south of State Highway 16.

The CBD and Newton environs are characterised by commercial land use with buildings that are generally two to three storeys in height and residential land use in the form of medium density apartment buildings. The Central Motorway Junction is also located within the Newton-Kingsland area where State Highway 1 and State Highway 16 converge and plays a crucial role in connecting the CBD with the wider region.

Towards the eastern extent of the Project area, works associated with the City Rail Link (CRL) are currently being undertaken. This involves the creation of a 3.45 km twin-tunnel, underground rail beneath the CBD connecting Waitematā Station (formerly Britomart Station) to the Western Line at Maungawhau Station (formerly Mount Eden Station). The CRL project involves major redevelopment at Maungawhau Station and Waitematā Station as well as two new stations (Te Waihorotiu Station and Karanga-a-Hape Station). The eastern extent of works will occur outside where construction of the Karanga-a-Hape Station is currently being completed.

The Project extent in this area borders the Karangahape Road Historic Heritage Area which contains numerous Victorian and Edwardian-era buildings. The road network in this locality is typically narrow with limited on-street parking. It is also distinct in its built form and land use compared to the rest of the Project area, which is separated by the Central Motorway Junction and State Highway 16.

Auckland's intensification plan change, Plan Change 78 (PC78), has been underway since 2022, however earlier this year, the Government agreed to change the Resource Management (Consenting and Other System Changes) Amendment Bill to allow Auckland to withdraw PC78. The Government, however, did direct Auckland Council to bring forward decisions on the parts of PC78 that relate to the City Centre.

The Independent Hearings Panel for PC78 delivered its recommendations on the City Centre to Auckland Council on 8 May 2025. On 22 May 2025, the Auckland Council decided to accept all the Independent Hearings Panel's recommendations on submissions on PC78 relating to the City Centre, and thereafter the provisions relating to the City Centre became operative on 6 June 2025[2]. The changes that PC78 enabled in the Business – City Centre Zone allows for

[2] For any IHP recommendations that the Council accepts, when the Council notifies its decisions, the council will also advise the date that the City Centre provisions will be made operative. This process is provided for in clauses 103 and 104 of Schedule 1 of the RMA. For the Intensification Planning Instruments process, there are no rights of appeal in relation to the Council's decision. The date that the

significant intensification, enabling high-rise development to support Auckland's growth and maximise access to public transport, especially around (CRL) stations. As discussed above, there are CRL stations towards the eastern extent of the Project area, with the surrounding area around SH01 zoned Business – City Centre Zone. PC78 is therefore applicable to the Project.

The Resource Management (Consenting and Other System Changes) Amendment Bill allows Auckland Council to remove the remaining parts of PC78, but requires a new plan change to be notified by 10 October 2025. This new plan change must enable housing capacity equal to or greater than that enabled by PC78. This will require Auckland Council to allow for greater density (of at least six stories) around the key CRL stations of Maungawhau, Kingsland and Morningside. Parts of the Project area are within a 'walkable catchment' to the new CRL stations and the new plan change will therefore allow for increased residential density. The eastern extent of the Project area is therefore an area in transition.

Towards the central area of the Project (SH04, SH13, SH14 and SH15), there is a branch connection underneath State Highway 16 going from the southern side of the state highway to Arch Hill Scenic Reserve. Arch Hill Scenic Reserve is a 5-hectare green space located on the slopes between Great North Road and State Highway 16. It features a mix of regenerating native bush, open grassy areas, and walking tracks. The reserve connects Ivanhoe Road, Bond Street, and Great North Road, providing residents with recreational opportunities.

Towards the southern side of State Highway 16 is Kingsland, an urban village centred on New North Road and large tracts of 'character' detached dwellings. Kingsland is defined by its proximity to the Western Line rail network (with access to Kingsland station) and Eden Park, while New North Road serves as the suburb's main arterial route. The area features a mix of Edwardian villas, small apartment blocks, and newer developments, reflecting a mix of architectural styles. Along New North Road there are cafes, bars and offices, while the collector and local roads are predominantly residential.

The Project area is also interspersed with open space reserves such as Basque Park, Nixon Park and Western Springs Park. Basque Park is a north-facing green space in Eden Terrace, bordered by Symonds Street, Newton Road, and State Highway 16. Basque Park is an urban reserve surrounded by a mix of residential apartments and light industrial/commercial buildings. Nixon Park, located in Kingsland, is a well-used community sports and recreation area featuring open fields, a playground, and sports courts. Local events and casual recreation activities are common and there are views toward the CBD with easy access from surrounding neighbourhoods. Western Springs Park is a large, scenic reserve with birdlife, including ducks, geese, and pūkeko, and features walking paths, picnic areas, and connections to nearby attractions like the Auckland Zoo and the Museum of Transport and Technology (MOTAT).

3.2 Auckland Unitary Plan (Operative in Part) Zoning and Special Features

There are a variety of AUP(OP) zones within the Project footprint (Refer to Figure 2). While much of the Project's construction will occur within unzoned road reserves, some works will also occur within the Strategic Transport Corridor Zone, the Residential Single House Zone and the

provisions will be made operative must be at least five working days after the public notice, in accordance with clause 20(2) of Schedule 1 of the RMA.

Residential Mixed Housing Suburban Zone. In addition, the Project will occur within the following zones:

- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Residential – Mixed Housing Urban Zone
- Special Purpose - Major Recreation Facility Zone (at Western Springs Park)
- Business – Mixed Use Zone (opposite Basque Park).

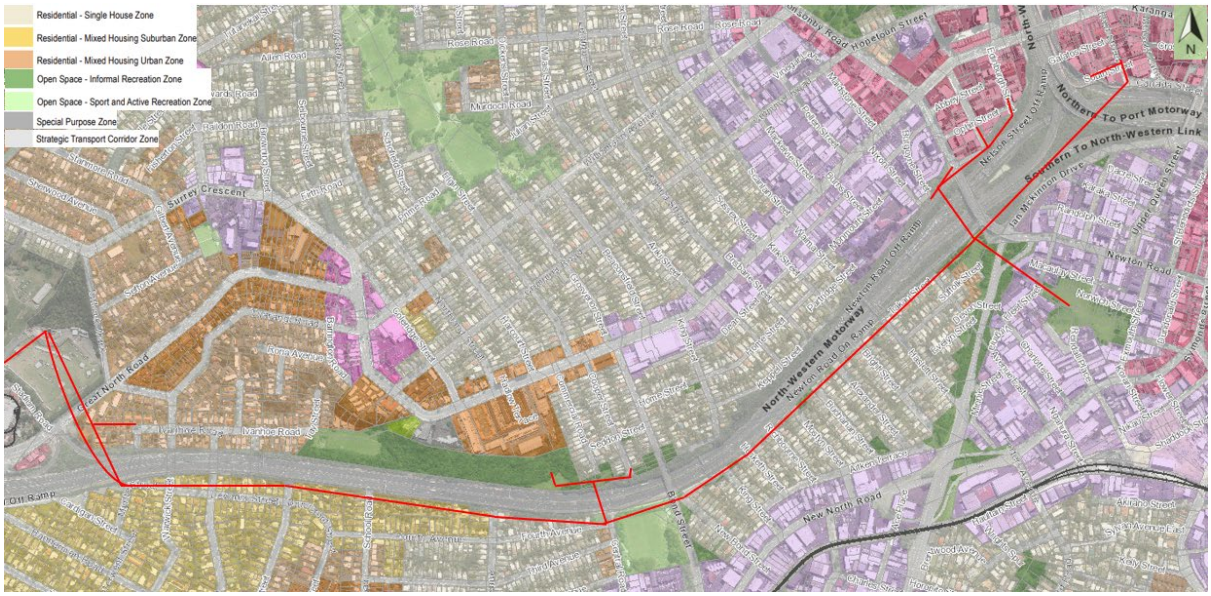

Figure 2. Zoning within the Project area and surrounds. The approximate Project alignment is shown in red (Source: Auckland Council GeoMaps)

The overlays, controls, designations and precincts that apply to the Project area are shown in Figures 3 to 5, and include:

- Regionally Significant Volcanic Viewshafts and Height Sensitive Areas Overlay - Mount Eden, Viewshafts (Council IDs: E10, E16, E20): This overlay applies to the eastern extent of the Project area towards the CBD.
- Special Character Areas Overlay Residential and Business - Residential Isthmus A: This overlay applies to the residential suburbs of Grey Lynn and Kingsland, either side of State Highway 16.
- Notable Trees Overlay – (Council ID: 839): The notable tree is an English Oak and is located at 23 Levonia Street, Western Springs. The proposed alignment intersects close to the rootzone of this notable tree, however, is not located near a shaft.
- Macroinvertebrate Community Index Control – Native and Urban: This control applies to the entire Project area and assesses the health of freshwater ecosystems.
- Arterial Roads Control: This applies to the State Highway 16 corridor. The Project will not involve any disruption to existing traffic during construction given the trenchless methods that will be utilised. As such, this control is not relevant to the Project.
- Designations - 2500-2, 2500-2 City Rail Link-substrata, Mayoral Drive to New North Road: The Requiring Authority is City Rail Link Limited and applies to the eastern extent of the Project area.

- Designations - 2500-3, 2500-3 City Rail Link-strata Mayoral Drive to New North Road: The Requiring Authority is City Rail Link Limited and applies to the eastern extent of the Project area.
- Designations – (Council ID: 6736), State Highway 1 and State Highway 16: Central Motorway Junction: The Requiring Authority is New Zealand Transport Agency Waka Kotahi (NZTA) and applies to the eastern extent of the project area.
- Designations – (Council ID: 6718), Motorway - State Highway 1 Auckland Harbour Bridge to Otahuhu, State Highway 16 Newton to Avondale, State Highway 20 Hillsborough Rd to Manukau Harbour Crossing: The Requiring Authority is NZTA, and this designation applies to the State Highway 16 alignment from Newton to Mount Albert.
- Designations – (Council ID: 518), Carpark: The Requiring Authority is Auckland Council and this designation is at Western Springs Park.
- Designations – (Council ID: 9466), Construction, operation and maintenance of wastewater infrastructure: The Requiring Authority is Watercare and this designation applies to a section of Western Springs Park.
- Western Springs Stadium, Sub-Precinct: This precinct applies to Western Springs Park. The Western Springs Stadium Precinct provides specific planning controls for the use and development of Western Springs Stadium as a multi-functional recreation, sporting and events venue.

The following overlays and controls are located adjacent to the proposed works area:

- Historic Heritage Overlay Extent of Place (Council ID: 2739) – Karangahape Road Historic Heritage Area: This applies to the Newton Catchment and borders the extent of works.
- Historic Heritage Overlay Extent of Place (Council ID: 2518) – Cooper Street Historic Heritage Area: This applies to the area including the road reserve of Cooper Street just north of the location of Shaft 13.
- Vehicle Access Restriction Control - Motorway Interchange Control: This applies to sites along Newton Road. This control seeks to restrict the construction of vehicle crossings in close proximity to the motorway network.
- Centre Fringe Office Control: This control applies to sites north of the Project extent along Burgoyne Street and Nixon Street. This control imposes maximum parking rates for office activities.
- Height Variation Control: This control restricts the height of buildings.

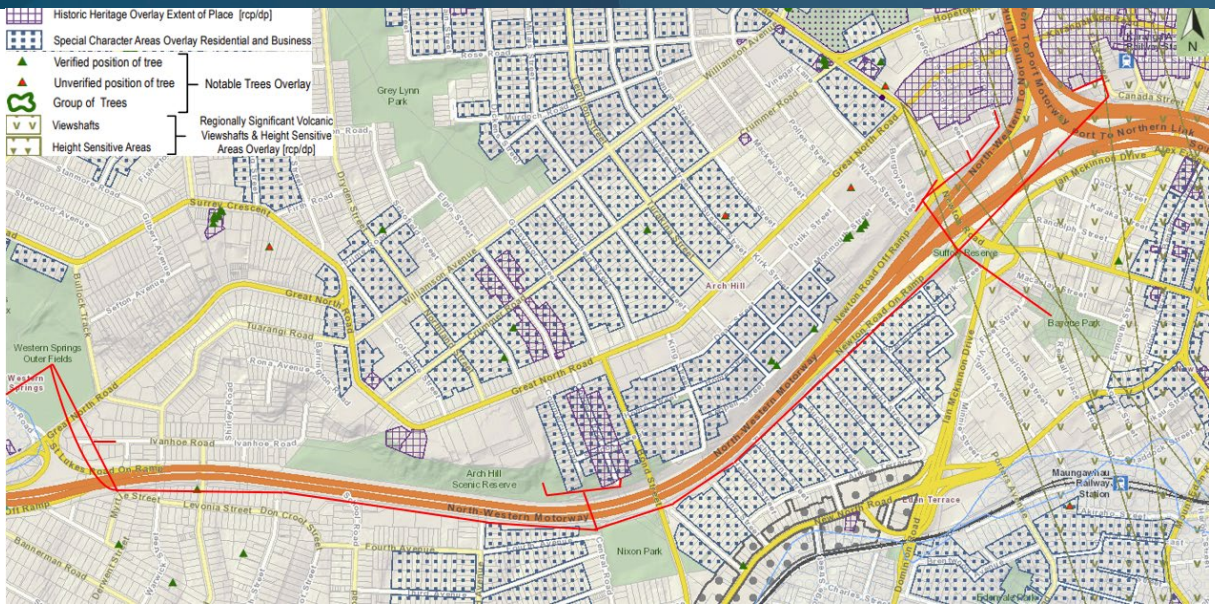

Figure 3. Overlays within the Project area and surrounds. The approximate project alignment is shown in red which includes both the construction methodology options (Source: Auckland Council GeoMaps)

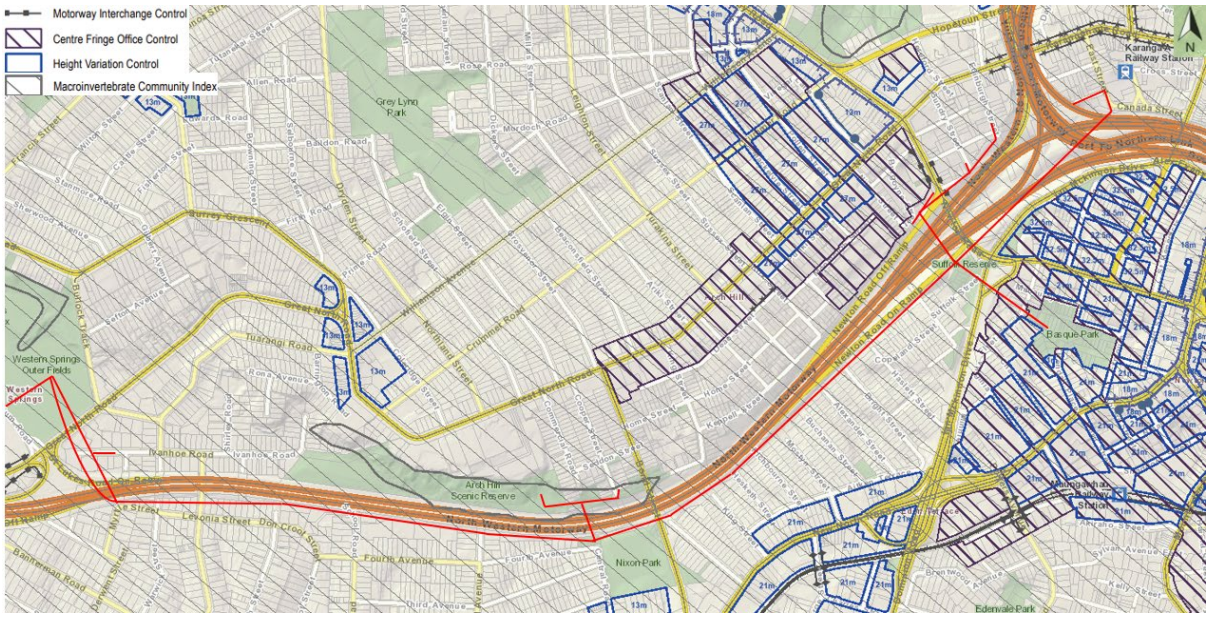

Figure 4. Controls within the Project area and surrounds. The approximate project alignment is shown in red which includes both the construction methodology options (Source: Auckland Council GeoMaps)

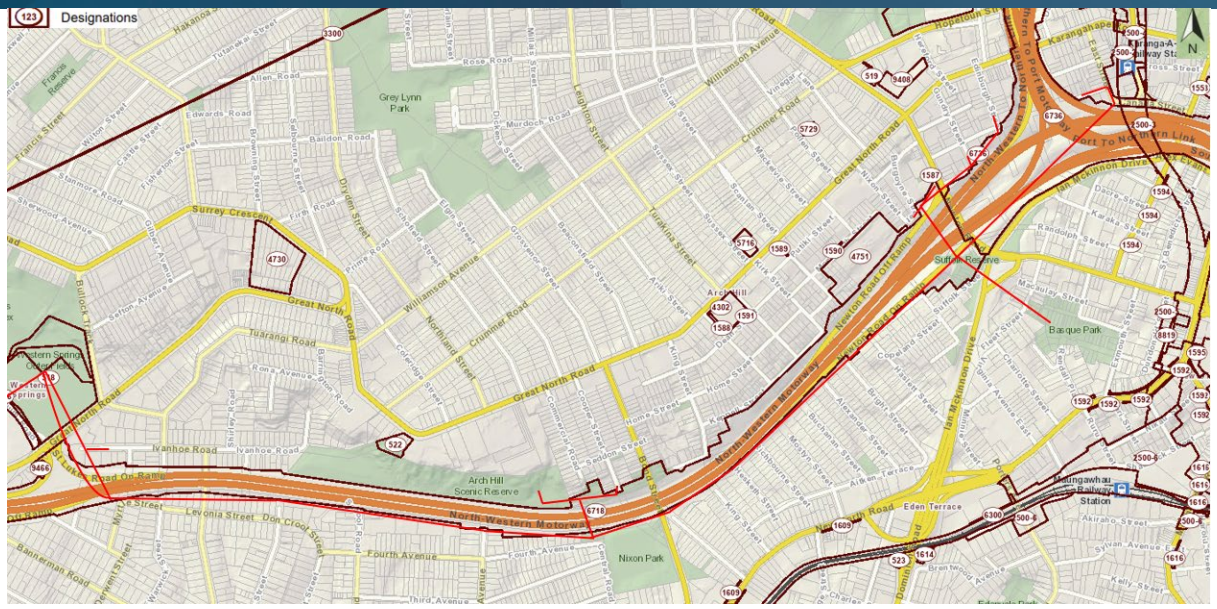

Figure 5. Designations within the Project area and surrounds. The approximate project alignment is shown in red which includes both the construction methodology options (Source: Auckland Council GeoMaps)

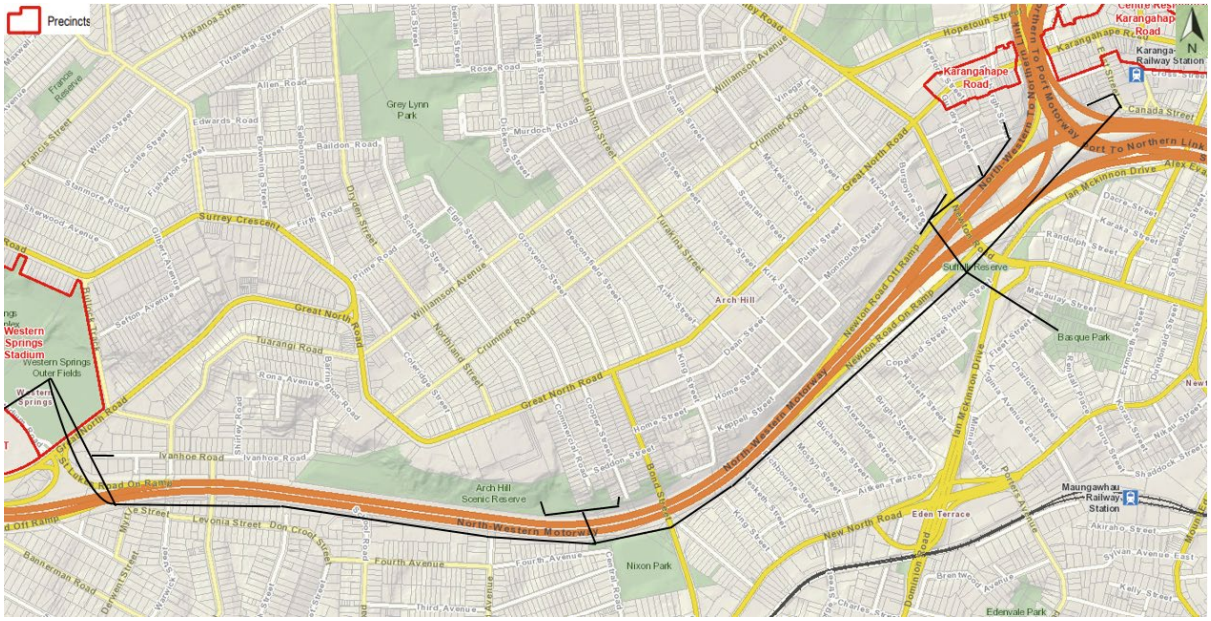

Figure 6. Precincts within the Project area and surrounds. The approximate project alignment is shown in black (Source: Auckland Council GeoMaps)

3.3 Hydrological Features

There are no known watercourses or wetlands within 100m of the Project works, however there are a number of overland flowpaths, while parts of the Project will occur within 1% AEP floodplains (Refer to Figure 7).

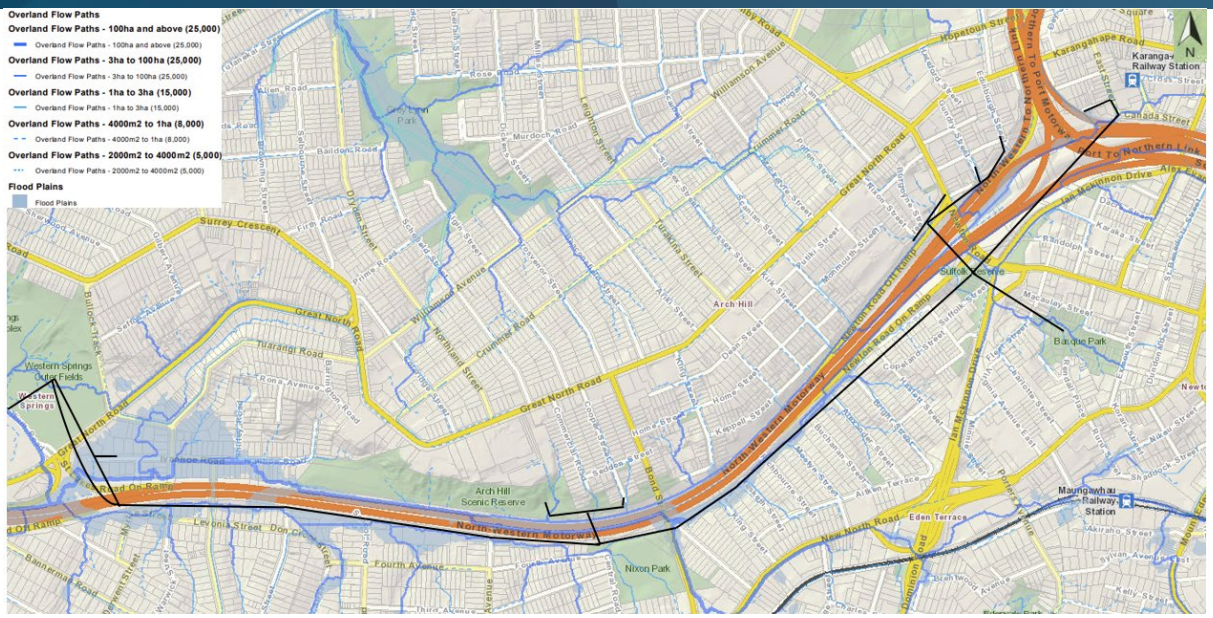

Figure 7. Hydrological features within the Project area and surrounds. The approximate Project alignment is shown in black (Source: Auckland Council GeoMaps)

3.4 Geotechnical and Groundwater

The alignment traverses four primary geological units. The eastern and central extents of the Project footprint are dominated by Waitematā Group (i.e. East Coast Bays Formation (ECBF) soils). The central to western parts of the Project feature deposits of Tauranga Group Alluvium soils, with Auckland Volcanic Field (AVF) deposits also prominent. The Project will also cross closed historic landfill sites at open space reserves, which are underlain by fill material.

Groundwater levels have been measured between 0.5 m and 12.29 m below ground level bgl) across the Project area.

3.5 Cultural and Historic Features

A review of the New Zealand Heritage (Pouhere Taonga) List does not indicate any features of interest within the Project footprint. The Former Pumping Station at MOTAT is a listed feature. This is at 805 Great North Road, Western Springs, however the Project will not impact this feature.

A review of the Cultural Heritage Inventory (CHI) (Auckland Council GeoMaps) notes the presence of a heritage 'botanic point'. This is the English oak tree at 23 Levonia Street, Western Springs that is listed as a notable tree under the AUP(OP).

The site is not within a Statutory Acknowledgment Area; however, it should be noted that the Western Springs lake, west of the Project extent at Western Springs Park is a site of significance to Mana Whenua. The Project will not impact the Western Springs lake.

3.6 Contaminated Land

Aerial photographs from 1940 and 1959 show the Project area was gradually urbanised and intensified, with residential dwellings being the predominant land use. By the 1990s the motorway network was completed, with no significant changes in land uses since that time.

The Detailed Site Investigation (DSI) for the Project has identified several Hazardous Activities and Industries List (HAIL) activities and areas of contaminated land. This includes historic uncontrolled fill material at Suffolk Reserve (SH02), Nixon Park (SH04), Basque Park (SH12 and SH12A), and Arch Hill Reserve (SH13, SH14, and SH15). These areas were found to contain contaminants such as heavy metals, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs) and asbestos, although these were below the relevant human health criteria. Specific contaminants of concern include lead, arsenic, and pyrene, with groundwater contamination noted at Suffolk Reserve.

4 Description of the Works

4.1 Previous Reporting

A Concept Design Report prepared by Aurecon New Zealand Limited in December 2024 detailed the Project's objectives as detailed in Section 2.2 above and presented the proposed infrastructure as a key component to address wastewater overflows in the Motions Creek Catchment. The report detailed the design philosophy, hydraulic analysis and geotechnical investigations that were undertaken. The report also provided an overview of the construction methodology, emphasising the importance of minimising disruptions to surrounding infrastructure and optimising the alignment to avoid major utility clashes. The alignment shown in the Drawings (Appendix A1) has therefore been informed by the details of the Concept Design Report.

4.2 Existing Approvals

Global Tree Consent

Watercare holds a Global Tree Consent (GTC) (TRE60318741) which authorises a range of works to trees (including tree pruning, removal, replanting and works in the rootzone of protected trees) as a result of the water and wastewater utility works across Auckland. Any required works for tree pruning, removal, replanting and works in the rootzone of protected trees may be authorised by the GTC as described below. If the works are not permitted under the AUP(OP) or authorised by the GTC, further resource consents are required under the rules of the AUP(OP).

The GTC has three tiers with each allowing different works and controls (i.e., some works can occur without Arborist supervision, while some works will require Arborist supervision and consultation with Council's Appointed Arborist). In instances whereby the proposed works would fall outside the three tiers, the works may potentially be undertaken under 'urgent works' protocols. In order for the works to be considered urgent, the works will need to fall within a defined criteria for 'urgent works' and the Works Arborist must be of the opinion that the works could be undertaken in such a manner that adverse effects on the subject tree(s) will be no more than minor. If the works results in a more than minor adverse effect, the works can only be undertaken under the emergency provisions of Section 330 of the RMA.

In addition to the above, for vegetation works to be covered under the GTC, the works will need to be undertaken in accordance with the general and specific guidance of the Tree Management Plan (TMP) which forms part of the GTC.

The Arboricultural Assessment (Appendix B) specifies that the works do not fall within the scope of the GTC. As such, resource consent for the vegetation works will be required.

Network Discharge Consent

Watercare holds a network discharge consent application for the Central Interceptor Catchment Network (R/REG/2013/3763 (overflows to land and water)) and (R/REG/2013/3764 (overflows to the coastal marine area)). This resource consent authorises the discharge of wastewater from the public wastewater network within existing urban areas. This Project complies with the network discharge consent conditions.

Western Springs Park

There is an existing designation (Council ID: 9466) related to the Central Interceptor Main Works at Western Springs Park. As part of this Project SH08 will connect into the shaft that has been constructed as part of the Central Interceptor Main Works Project at Western Springs Park. Works at this location will be subject to a future outline plan of works or waiver.

4.3 Overview of the Proposed Works

An overview of the Project has been provided above. Specific details around construction methodologies, shaft details, utility relocations, construction traffic details, earthworks, vegetation works, and construction hours are now discussed below.

4.3.1 Construction Methodology

At the time of writing this AEE, a Contractor has not been nominated by Watercare. To provide appropriate flexibility for construction, consent for two difference construction techniques is sought. These are micro-tunnelling methods using either a Tunnel Boring Machine (TBM) or pipe jacking. Both methods have been assessed by the technical experts for this application and will involve:

- Site mobilisation such as establishing site access, environmental controls (e.g. erosion and sediment control) and temporary traffic management. This phase will also involve setting up site compounds at the first launch site. As the construction progress, further compounds will be set up at launch and reception shaft locations along the alignment.
- Constructing the shafts will also be done in a progressive manner and will tie into the progress of pipeline construction. Only four shaft locations are expected to be operational at any one time, and the shaft locations will be reinstated as the construction of the Project progresses. The shafts will be supported by various methods depending on geotechnical conditions, space constraints and the availability of equipment. Typically, the shaft support types used will either be secant piled shafts, king post and lagging support, sheet piles, rock bolt and mesh, proprietary excavation support systems or the caisson method.
- At shaft locations, there may be the possibility of groundwater ingress, therefore dewatering systems will be used to create a dry environment. The shaft support structures noted above will prevent groundwater ingress during construction and also help to minimise settlement risks.
- The collector sewer will generally be constructed first using either the TBM option or the pipejacking option. This will be progressed from Western Springs Park in the west to Canada Street in the east.
- If a TBM option is progressed, this is likely to involve the AVN Slurry TBM. This is a closed face microtunnelling machine that uses pressurised slurry to support the tunnel face and transport spoil. The spoil is transported via a slurry circuit using pipes and pumps to a separation plant. It is estimated that the TBM will process at least 300m^3 of slurry per hour, preferably 500m^3/hr and is expected to have various stages of screens, shakers, desanders and a centrifuge or belt press to separate the ground into silts, sands and gravels. These materials are deposited into a mucking bin for disposal and trucked away.

- If the pipe jacking option is progressed, it will involve pipes that will be jacked from a launch shaft while excavation is performed at the face, typically using a cutter head or other type of excavation head. Spoil will be transported to a separation plant similar to that of the TBM option and then be trucked away.
- Branch pipelines will then be constructed utilising either the TBM or pipejacking method. Some branch lines may be constructed in advance if the contractor has sufficient resources and if it does not interfere with the main line construction.
- The temporary shafts will be converted to permanent manholes.
- Local connections and EOP connections will be constructed before site reinstatement occurs.

It should be noted the drawings show the general wastewater pipeline alignment, but the exact alignment may alter between 2m-5m during the construction phase to allow for optimisation of alignment and to avoid obstructions if encountered.

4.3.1.1 Microtunnelling methods using TBMs

This method uses a slurry bentonite mixture to pressurise the TBM cutter head thereby enabling it to drill through substrate. Approximately 300m^3 to 500m^3 of slurry mixture per hour will be used to operate the TBM and maintain the necessary pressure levels at the cutter head. Spoil cuttings are pumped to a slurry circuit in the TBM using pipes and pumps before being transported back to the entry shaft and to a slurry separation plant.

There are various stages of screens, shakers, desanders and a centrifuge or belt press to separate the ground into silts, sands and gravels, with the spoil being separated from the slurry at the surface. Sands and gravels can be disposed of as managed or clean fill materials, while the silts are deposited into a mucking bin and trucked off site to an authorised facility for disposal. Once the spoil material has been removed from the slurry, the slurry is returned to the TBM face in a closed circuit, through pipes and pumps. The TBM internal pipeline diameter will be 4500mm.

4.3.1.2 Pipe Jacking Method

This method will involve pushing each section of pipe into the ground by hydraulic jacks located in the jacking launch shafts. The leading pipe section is equipped with a cutter head that excavates the soil as the pipe is pushed forward (or jacked). Excavated material is transported back to the jacking pit using various methods, such as augers, slurry systems and conveyor belts. The spoil is then removed from the pit and disposed of.

Once the pipe reaches the reception pit, the cutter head is removed, and the pipe is connected to the existing infrastructure. There are two pipe jacking options (Options B1 and B2), with the key difference being Option B2 will be deeper than Option B1. The internal pipeline diameter if pipe jacking is proposed will be 2400mm. Branch connections will have an internal diameter of 600mm – 1200mm.

4.3.2 Shaft Details

As noted above, both construction methods will require shafts to be built to serve as launch shafts and receptor shafts. The details of these shafts are reproduced from the Constructability Report below in Table 1, Table 2 and Table 3:

Table 1. Pipe Jacking Shaft Details

Shaft No	Location	Shaft Diameter	Shaft Depth	Construction Footprint
Collector Sewer				
SH01	East Street	6m Ø	23m (Option B1) 45m (Option B2)	1000m^2
SH02	Suffolk Reserve	10m Ø	32m (Option B1) 40m (Option B2)	3500m^2
SH03	Mostyn Street	6m Ø	17m (Option B1) 25m (Option B2)	700m^2
SH04	Fourth Avenue	9m Ø	24m (Option B1) 24m (Option B2)	Entire carpark and the adjacent road corridor
SH05	Kingsland Avenue	3.5m Ø	23m	750m^2
SH06	Finch Street	6m Ø	22m	300m^2
SH07	Myrtle St	9m Ø	20m	1500m^2
SH07a	Ivanhoe Road	3.5m Ø	21m	300m^2
SH08	Western Springs Park	9m Ø	25m	2500m^2
Branch Connections[3]				
SH09	Edinburgh Street	6m Ø	9m	160m^2
SH10	Gundry Street	6m Ø	6m	200
SH11	Burgoyne Street	6m Ø	25m	200

[3] The details for branch connections remain the same for the TBM Option. The branch connections will be constructed using the pipe jacking method where the pipeline internal diameter will be 600mm.

Shaft No	Location	Shaft Diameter	Shaft Depth	Construction Footprint
SH12	Basque Park	6m Ø	8m	500
SH12a	Fleet Street	6m Ø	17m	500
SH13	Cooper Street	6m Ø	8m	250
SH14	Across Cooper Street	6m Ø	15m	400
SH15	Arch Hill Scenic Reserve	6m Ø	6m	450

Table 2. TBM Shaft Details

Shaft No	Location	Shaft Diameter	Shaft Depth	Construction Footprint
SH01	East Street	12m Ø	45m	1000m^2
SH02	Suffolk Reserve	10m Ø	39m	3500m^2
SH03	Mostyn Street	6m Ø	25m	700m^2
SH04	Fourth Avenue	9m Ø	24m	Entire carpark and the adjacent road corridor
SH05	Kingsland Avenue	3.5m Ø	22m	750m^2
SH06	Finch Street	6m Ø	22m	300m^2
SH07	Myrtle St	9m Ø	20m	1500m^2
SH07a	Ivanhoe Road	3.5m Ø	23m	300m^2

Shaft No	Location	Shaft Diameter	Shaft Depth	Construction Footprint
SH08	Western Springs Park	14m Ø	25m	2500m^2

Table 3. Trenchless Drives

Start	Finish	Length
Collector Sewer		
SH08	SH07	421.3m
SH07	SH05	853.4m
SH04	SH05	283.5m
SH04	SH03	559.1m
SH02	SH03	607.5m
SH02	SH01	547.3m
Branch Connections		
SH08	Central Interceptor Connection	15m
SH04	SH14	106.4m
SH14	SH13	59.6m
SH14	SH15	108.1m
SH02	SH11	161.8m
SH02	SH12a	206m
SH11	SH10	184.7m
SH10	SH09	107.8m

4.3.3 Utility Relocations

The Project will require a series of utility relocations at shaft locations. Any resource consents needed to relocate utilities will form part of separate applications by the responsible utility operators.

4.3.4 Construction Traffic

It is expected that, where practicable, six-wheeler trucks will be used to transport spoil offsite, with 4 shaft sites operational at any given time. At some sites (SH05, SH06, SH08, SH09, SH10, SH13 and SH14) vehicles are expected to exit the site in the same direction/route that they entered the site, while at other sites, it is possible to ensure that there is only one way traffic

movement (i.e., vehicles enter the site from one direction and leave the site heading in a different direction).

Based on the above, the maximum number of construction traffic movements[4] for any shaft location will be at SH14 (access from Cooper Street) where 154 two-direction movements are likely to occur during peak period. At this location, the vehicles are expected to exit in the same direction/route they arrived from. The total duration of works at SH14 is expected to last 5 days. The highest truck volumes are expected to occur as a result of shaft piling and excavation. The highest truck movements are noted below:

- A total of 3,274 two-way heavy commercial trucks for spoil removal over 70 days at SH02. This will result in 46 truckloads (two-way movements) per day at this location.
- A total of 2,354 two-way heavy commercial trucks for spoil removal over 40 days at SH04. This will result in 58 truckloads per day at this location.
- A total of 2,016 two-way heavy commercial trucks for spoil removal over 35 days at SH07. This will result in 58 truckloads per day at this location.
- Vehicle numbers needed to supply material, to carry out general deliveries, to supply material to backfill shafts and light vehicle movements are the same across all sites. This includes:
    - For material supplies, 16 vehicle movements (two-way) are needed per day;
    - For general deliveries, 10 vehicle movements (two-way) are needed per day;
    - 16 vehicle movements (two-way) to supply material to backfill shafts; and
    - 80 light vehicle movements (two-way) are expected per day at each shaft location.
- A maximum daily volume of 494 two-way movements will occur at the busiest 4 shaft locations (SH05, SH06, SH07 and SH08) that are expected to be occurring concurrently. At SH05, SH06 and SH08 construction vehicles exit the shaft sites using the same direction/route that they entered from (i.e., one-way movements cannot be ensured).

No road closures are proposed, but on-street parking will likely be temporarily impacted at all shaft locations except or SH01, SH08, SH09 and SH10. On-street parking may need to be temporarily removed or time-limited on some local roads to allow for safe and efficient passage of construction vehicles. This is more likely to be required on narrow local roads with high levels of existing on-street parking and limited carriageway width.

With respect to walkways and cycleways, safe access for both pedestrians and cyclists will be needed at the entrance to all shaft locations, while temporary diversions around works or narrowing of the walkways and/or cycleways is likely be required at SH02, SH03, SH07, SH13 and SH14. All traffic management measures will be captured under the Project's CTMP and standard approval processes for roadworks from Auckland Transport (AT) and/or NZTA.

[4] This includes truck movements to transport spoil, material supplies, general deliveries, vehicles needed to transport materials to backfill shaft sites and light vehicles (i.e., all types of construction related traffic movements).

4.3.5 Land Disturbance/Earthworks

Erosion and sediment control measures will be undertaken in accordance with *Auckland Council GD05 – Guideline Document 2016/005* (GD05). The approximate volumes and areas are outlined in Table 4.

Table 4. Approximate Land Disturbance Volume and Area[5]

Activity	Volume (m^3)	Area (m^2)[6]
Earthworks within the road reserve[7]	22,500	4,560
Earthworks within private property[8]	1,200	1,050
Earthworks within the Open Space Zone[9]	48,700	8,500
Total cumulative earthworks	72,400	14,110

Works will be undertaken at four consecutive shafts simultaneously if pipe jacking is the preferred construction methodology. The maximum earthworks will be between SH01 to SH04. The maximum earthworks being undertaken at any given time is therefore likely to be 41,150m^3 over 6,100m^2.

If TBM is the preferred construction methodology, the earthworks volumes would be higher (estimated to be a total of 175,100m^3 over the two-year duration of the project), however spoil will be transported from the TBM to SH08. There would only be the need to construct shaft locations to facilitate the branch connections. These shaft locations (SH02, SH04, SH12, SH12a, SH09, SH10, SH11, SH13, SH14 and SH15) do not need to be constructed sequentially as would be the case with the pipe jacking option. Additionally, as noted above, there is an existing designation (Council ID: 9466) related to SH08 at Western Springs Park, therefore earthworks values at SH08 can be covered by the existing designation applying to that area.

4.3.6 Vegetation Works

The Project will involve tree pruning to facilitate construction access in addition to tree removals within the road reserve and open space zone. Works will also be required within the protected rootzone of street trees and open space zone trees. This will require resource consent as detailed by the Arboricultural Assessment (Appendix B) and this AEE.

4.3.7 Construction Period

General working hours for the project are expected to be 7am to 6pm, Monday to Saturday for shaft and surface works. For the main line trenchless works, the working hours will be on shift work, most likely up to 24 hours per day, between 5 and 7 days per week. This will primarily

[5] These figures present the more conservative scenario for the pipe jacking option
[6] Adding the construction support areas from Section 4.3.2 above
[7] SH01, SH03, SH06, SH07, SH12a, SH09, SH10, SH11
[8] SH05, SH07a
[9] SH02, SH04, SH12, SH13, SH14, SH15

affect the work sites at SH02, SH04, SH07 and SH08. The connecting sewers are likely be carried out on day shift only.

It is anticipated that the project will be executed over a two-year time period, with works commencing as early as mid-2026.

4.3.8 Noise Management and Mitigation

The Project will abide by a Construction Noise and Vibration Management Plan (CNVMP) to manage construction noise and vibration. A draft is provided in the Construction Noise and Vibration Assessment (Appendix C). This will include the setting up of a noise enclosure and acoustic fencing at shaft locations but will also result in certain types of equipment being used at locations in close proximity to sensitive receivers. This is discussed in Section 6.5 below and in the construction noise and vibration assessment.

4.3.9 Contaminated Land Management

A Detailed Site Investigation (Appendix D) has been prepared to support this Project. This has identified historic landfills at Basque Park, Arch Hill Scenic Reserve, Nixon Park, Suffolk Reserve and Western Springs Park. These meet the Hazardous Activities and Industries List (HAIL) Category G3. There is also potential for landfill gases at these sites. Towards Newton there are industrial uses on adjacent land where land uses in relation to vehicle servicing and chemical storage have occurred. This meets HAIL Category H and I.

Groundwater contamination was identified at Shaft SH02 (Suffolk Reserve), where concentrations of copper, nickel, and zinc exceeded the ANZG DGVs for 80% protection criteria. However, these concentrations were below the 80% protection criteria when applying dilution and reasonable mixing. Contaminated groundwater will be removed from site using hydrovac trucks or similar containment systems. Water will be stored in sealed containers and transported to a licensed facility for treatment or disposal. Watercare may also discharge the contaminated groundwater into the public wastewater network in accordance with the conditions of the related network discharge consent.

To manage contamination risks, works will be undertaken in accordance with a Contaminated Land Management Plan (Appendix E).

4.3.10 Dewatering

Groundwater was encountered at depths between 0.5 m to 12.9 m across the Project area, requiring dewatering during shaft construction. This will be managed by the Project's Groundwater Settlement Monitoring and Contingency Plan (GSMCP).

5 Reasons for Application

5.1 Auckland Unitary Plan – Operative in Part (2016) (AUP(OP))

The Project has been considered against the provisions of the AUP(OP), which are summarised in Table 5 and Table 6. These provisions are not subject to any appeals and hence are considered to be operative and therefore supersede any relevant rules/provisions in the relevant legacy plan(s).

All other relevant resource consents are also sought in the event of any omission in this AEE.

Table 5. Relevant AUP(OP) Provisions and Assessment

Activity	Reference	Rule	Activity Status	Comment
Discharge of contaminated groundwater	Rule E4.4.1 (A11)	Discharge of water and/or contaminants (including washwater) onto or into land and/or into water from the construction, repair, maintenance, upgrade or removal of any component of the stormwater or wastewater network	**Controlled**	Contaminated groundwater will be encountered at some shaft locations, particularly at closed landfill sites. Groundwater contamination was identified at Shaft SH02 (Suffolk Reserve), where concentrations of copper, nickel, and zinc exceeded the ANZG DGVs for 80% protection criteria. However, these concentrations were below the 80% protection criteria when applying dilution and reasonable mixing.
Groundwater dewatering	Rule E7.4.1 (A20)	Dewatering or groundwater level control associated with a groundwater diversion authorised as a restricted discretionary activity under the Unitary Plan, not meeting	**Restricted Discretionary**	Groundwater will be encountered, and dewatering is likely needed for greater than 30 days (3 months proposed) at shaft locations and therefore cannot

Activity	Reference	Rule	Activity Status	Comment
		permitted activity standards or is not otherwise listed		comply with Standard E7.6.1.6
Groundwater diversion	Rule E7.4.1 (A28)	The diversion of groundwater caused by any excavation, (including trench) or tunnel that does not meet the permitted activity standards or not otherwise listed	**Restricted Discretionary**	The tunnel boring machine will have a diameter of up to 4.5m, therefore the Project is not exempt from Standards E7.6.1.10(2)– (6). The excavations will extend 6m below the depth of the ground level and will also extend 2m below natural groundwater level. The branch pipe to Basque Park will extend underneath existing buildings (Basque Park Apartments), and the pipe diameter to service this branch connection is 600mm. This is likely to be within 2m of Basque Park Apartments. Compliance with Standards E7.6.1.10 (2)(b), 4(b) and 5(b) cannot be achieved.
Construction noise and vibration	Rule E25.4.1 (A2)	Activities that do not comply with a permitted activity standard	**Restricted Discretionary**	Construction noise and vibration levels will not comply with Standards E25.6.27 and E25.6.30.

Activity	Reference	Rule	Activity Status	Comment
				The construction activities will likely last more than 20 weeks. The 70dB noise limit will be exceeded at 67 properties during shaft construction and at 34 properties for open trenching. 4 receivers in the Cooper Street heritage area (SH13) are predicted to be subject to an exceedance of the 3 mm/s PPV threshold for sensitive buildings, with levels of 3–4 mm/s PPV during rock breaking and vibro piling. 51 receivers may experience vibration above the AUP amenity limit of 2 mm/s PPV. 5 properties may experience an exceedance of the 5 mm/s PPV cosmetic damage threshold.
Works within the protected rootzone of street trees and trees in open space reserves	Rule E26.4.3.1 (A88)	Works within the protected root zone not otherwise provided for	**Restricted Discretionary**	Works will occur within the protected root zone of open space zone and street trees where roots greater than 80mm will likely be encountered, although at this stage

Activity	Reference	Rule	Activity Status	Comment
				the exact number of trees where roots greater than 80mm cannot be confirmed. Consent is sought for this matter on a precautionary basis.
Tree removal within open space reserves and within the road reserve	Rule E26.4.3.1 (A92)	Tree alteration or removal of any tree greater than 4m in height and/or greater than 400mm in girth	**Restricted Discretionary**	Works will involve the removal of street trees and open space zone trees that are greater than 4m in height and 400mm in girth at the following locations: ▪ Trees 4-8 for Shaft 2 at (Suffolk Reserve) ▪ Tree 10, 11, 15, 16 and 20 at Shaft 3 (Mostyn Street Reserve) ▪ Tree 29 at Shaft 4 (Fourth Avenue car park) ▪ Tree 42 at Shaft 6 ▪ Tree 53, 56, 57 and 58 at Shaft 7 ▪ One olive tree from Group 95 at Shaft 12 ▪ Trees 90, 92 and partial removal of Group 93 for Shafts 13-15 at Arch Hill Scenic Reserve
Land disturbance	Rule E26.3.3.1 (A97)	Earthworks greater than 2,500m^2 other than for maintenance, repair, renewal, minor	**Restricted Discretionary**	It is anticipated that works will be undertaken at 4 consecutive shafts simultaneously. The

Activity	Reference	Rule	Activity Status	Comment
		infrastructure upgrading		maximum earthworks at any given time is between SH01-SH04. This is likely to result in 6,100m^2 of earthworks.
	Rule E26.3.3.1 (A97A)	Earthworks greater than 2,500m^3 other than for maintenance, repair, renewal, minor infrastructure upgrading	**Restricted Discretionary**	The following exceedances are to occur: ▪ SH02: 22,950m^3 ▪ SH04: 14,400m^3 ▪ SH07: 14,150m^3 ▪ SH08: 9,350m^3 It is anticipated that works will be undertaken at 4 consecutive shafts simultaneously. This is between SH01-SH04. The maximum earthworks being undertaken at any given time are therefore likely to be 41,150m^3
Temporary access to the motorway network	Rule E27.4.1 (A5)	Construction or use of a vehicle crossing where a Vehicle Access Restriction applies under Standards E27.6.4.1(2) or E27.6.4.1(3)	**Restricted Discretionary**	Temporary access will be required to State Highway 16 from SH02 (Suffolk Reserve) and SH15 (Arch Hill Scenic Reserve)
Disturbing soil on land containing elevated levels of contaminants	Rule E30.4.1 (A6)	Discharges of contaminants into air, or into water, or onto or into land not meeting permitted activity Standard E30.6.1.1; E30.6.1.2;	**Controlled**	The Project cannot comply with Standard E30.6.1.2 as the excavation needed to construct the shafts will likely exceed 200m^3.

Activity	Reference	Rule	Activity Status	Comment
		E30.6.1.3; E30.6.1.4; or E30.6.1.5		With respect to the contaminant concentrations outlined in Standard E30.6.1.4, the Project cannot comply with Standard E30.6.1.4(1) for the following reasons: Concentrations of lead at SH13 and arsenic at SH12A, Basque Park exceed the permitted activity standards. At SH12A pyrene concentrations exceeded the MfE petroleum guideline-soil acceptance criteria for protection of groundwater within 2m bgl for clay soil types. Arsenic concentration (at SH09 and SH11) and lead concentration (at SH02, SH04, SH12, SH13, SH14) exceed the Auckland background soil concentration limits.
Temporary land disturbance and stockpiling of soil and other materials within the 1%	Rule C1.9.(2)	An activity that is classed as a permitted, controlled or restricted discretionary activity but that does not comply with one or more of the	**Restricted Discretionary**	Temporary stockpiling of soil and other materials will be needed within the overland flowpaths and the 1% AEP floodplain. This will last longer than 28

Activity	Reference	Rule	Activity Status	Comment
AEP floodplain and/or overland flow path for more than 28 days in any calendar year		standards applying to that activity is a restricted discretionary activity unless otherwise specified by a rule applying to the particular activity		days, therefore cannot comply with Standard E26.5.5.2.(20).

Overall, the construction of the proposed works requires consent under the AUP(OP) as a **Restricted Discretionary** activity.

5.1.1 Permitted Activities

Table 6. Permitted Activities Associated with the Project

Activity	Reference	Rule	Comment
Construction of underground wastewater pipeline	Rule 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)	The Project will involve the construction of new underground pipelines for the conveyance of wastewater.
Construction of shafts, and installation of mechanical and electrical equipment	Rule E26.2.3.1 (A56)	Water, wastewater and stormwater outfalls and ancillary structures	Ancillary structures to support the main tunnel/lateral connections such as the shafts, mechanical/electrical equipment are permitted.
Construction of shafts and wastewater manholes	Rule E26.2.3.1 (A57)	Ventilation facilities, drop shafts and manholes	The construction of shafts and wastewater manholes is a permitted activity.
Tree pruning	Rule E26.4.3.1 (A83)	Tree trimming or alteration	Trees 83 and 90 and Tree Group 84 and 91 may require tree pruning which can comply with Standard E26.4.5.1.

Activity	Reference	Rule	Comment
Land Disturbance outside the Sediment Control Protection Area (SCPA) (i.e., within 50m of a watercourse or wetland greater than 1000m^2 or 100m landward of the coastal marine area)	Rule E26.5.3.2 (A101)	Up to 10,000m^2 where land has a slope less than 10 degrees outside the SCPA other than for maintenance, repair, renewal, minor infrastructure upgrading	Earthworks will be undertaken in a staged manner such that no more than 10,000m^2 will be undertaken at any given time outside the SCPA.
Land disturbance where the land has a slope greater than 10 degrees	E26.5.3.2 (A104)	Up to 2,500m^2 where the land has a slope equal to or greater than 10 degrees other than for maintenance, repair, renewal, minor infrastructure upgrading	Earthworks will be undertaken in a staged manner such that no more than 2,500m^2 will be undertaken at any given time where the land has a slope equal to or greater than 10 degrees.
Wastewater pipeline within roads and the Strategic Transport Corridor Zone subject to the 1% AEP floodplain and overland flowpath	Rule E36.4.1 (A54)	Infrastructure within roads or the Strategic Transport Corridor Zone in areas listed in the heading above	The wastewater pipeline will be constructed within roads and the Strategic Transport Corridor Zone in the 1% AEP floodplain and overland flowpath.
Temporary activities including buildings and structures	Rule E40.4.1 (A20)	Temporary activities associated with building or construction, (including structures and buildings that are accessory	Construction site offices and associated buildings, shaft structures and accessory activities associated with the

Activity	Reference	Rule	Comment
(site offices and shafts) associated with the construction of the wastewater pipeline		activities), for the duration of the project, or up to 24 months, whichever is the lesser	construction of the wastewater pipeline are a permitted activity.

5.2 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS)

The NES-CS came into effect on 1 January 2012. This legislation sets out nationally consistent planning controls appropriate to district and city councils for assessing contaminants in soil with regard to human health. The NES-CS applies to specific activities on land where a HAIL activity has or is more likely than not to have occurred. Activities covered under the NES-CS include soil disturbance, soil sampling, fuel systems removal, subdivision and land use change.

As discussed in Section 3.6, the Detailed Site Investigation (DSI) for the Project did identify several Hazardous Activities and Industries List (HAIL) activities and areas of contaminated land along the project alignment. This includes the following as noted in Table 7:

Table 7. HAIL Site Information

HAIL Site	HAIL Category	Contaminants of Concern
SH01	HAIL I - fill material used for road construction and low-level contamination associated with the long-term vehicle use	Heavy metals, asbestos, PAH and unknown groundwater contaminants
SH02	HAIL G3 – Closed Landfill	Heavy metals, PAH, and asbestos
SH03	HAIL I - fill material used for road construction and low-level contamination associated with the long-term vehicle use	Heavy metals, PAH, asbestos

HAIL Site	HAIL Category	Contaminants of Concern
SH04	HAIL G3 – Closed Landfill	Heavy metals, PAH, asbestos, organic acids, landfill gas, ammonia
SH05, SH06 and SH07	HAIL I - fill material used for road construction and low-level contamination associated with the long-term vehicle use	Heavy metals, PAH and asbestos
SH08	HAIL G3 – Closed Landfill	Heavy metals, PAH, asbestos
SH09, SH10, SH11	HAIL H – Migration of contaminants of adjacent properties	Heavy metals, PAH, organic acids and solvents.
SH12 and SH12A	HAIL G3 – Closed Landfill	Heavy metals, PAH, asbestos, organic acids, landfill gas and ammonia
SH13, SH14 and SH15	HAIL G3 – Closed Landfill	Heavy metals, PAH, asbestos

Soil disturbance will occur as part of the Project works and given the above current and historic land use; the NES-CS applies. The relevant regulations of the NES-CS have been considered and summarised in Table 8

Table 8. Assessment against Regulation 8(3)

Regulation	Assessment
NES for soil disturbance Regulation 8(3) Permitted Activity	
1. Implementation of controls to minimise exposure of humans to mobilised contaminants	**Complies:** Controls will be implemented to minimise exposure of humans to mobilised contaminants and will be informed by the Site Management Plan.
2. The soil must be reinstated to an erosion free state within one month of completing the land disturbance.	**Complies**: The soil will be reinstated to an erosion free state within one month of completing the land disturbance.
3. The volume of the disturbance of the piece of land must be no more than $25m^3$ per $500m^2$.	**Does Not Comply**: The volume of soil to be disturbed will exceed $25m^3$ per $500m^2$ at every shaft location.

Regulation	Assessment
NES for soil disturbance Regulation 8(3) Permitted Activity	
4. Soil must not be taken away unless it is for laboratory testing or, for all other purposes combined; a maximum of $5m^3$ per $500m^2$ of soil may be taken away per year.	**Does Not Comply**: As outlined in Section 4.3.5 and 5.1 above, earthworks volumes for disposal will be greater than $5m^3$ per $500m^2$.
5. Soil taken away must be disposed of at an appropriately licenced facility.	**Complies:** Contaminated soils will be disposed of at an appropriately licensed facility.
6. The duration of land disturbance must not be no longer than two months.	**Does Not Comply**: Land disturbance at the shaft locations will last more than two months
7. The integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.	**Complies:** Contaminated soil will be stockpiled on hardstand surface and covered with a polythene cover. This will prevent the discharge of contaminated soil or materials within the wider surrounds.

The DSI has established contaminant concentrations are above background soil concentrations but below any applicable human health standard for the project. As the permitted standards of Regulation 8(3) cannot be met, a controlled activity resource consent is needed in accordance with Regulation 9 of the NES-CS for this project.

5.3 National Environmental Standards for Freshwater (NES-F)

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F) regulate activities that pose risks to the health of freshwater and freshwater ecosystems. Anyone carrying out these activities will need to comply with the standards. The regulations came into effect on 3 September 2020 and were subsequently amended in 2022.

The standards are designed to:

- Protect existing natural inland wetlands;
- Protect urban and rural streams from in-filling; and
- Ensure connectivity of fish habitat (fish passage)

The Project does not involve any works within 100m proximity to a natural inland wetland, nor are any works required within any watercourse. Resource consent is not required under the NES-F regulations.

5.4 Matters of Discretion

Pursuant to 104C of the RMA, when considering an application for a resource consent for a restricted discretionary activity, Council must consider only those matters over which

discretion is restricted in national environmental standards or other regulations, and those matters to which it has restricted the exercise of its discretion in its plan or proposed plan.

The relevant matters of discretion available to Council when assessing this resource consent application are summarised in Table 9.

Table 9. Matters of Discretion

Activity	Rule Trigger	Reference	Matters of Discretion
Discharge of contaminated groundwater	Rule E4.4.1 (A11)	E4.6.3.1.(c)	(1) Discharges must not enter any areas identified in the Wetland Management Areas Overlay, Natural Lake Management Areas Overlay or Natural Stream Management Areas Overlay.
Groundwater dewatering	Rule E7.4.1 (A20)	E7.8.1	(1) General: (a) the effects on Mana Whenua values. (4) Take and use of groundwater for dewatering or groundwater level control associated with groundwater diversion: (a) refer to the matters listed in E7.8.1(6)(a)-(f) below. (6) diversion of groundwater: (a) how the proposal will avoid, remedy or mitigate adverse effects: (i) on the base flow of rivers and springs; (ii) on levels and flows in wetlands; (iii) on lake levels; (iv) on existing lawful groundwater takes and diversions; (v) on groundwater pressures, levels or flow paths and saline intrusion; (vi) from ground settlement on existing buildings, structures and services including roads, pavements, power, gas, electricity, water mains, sewers and fibre optic cables; (vii) arising from surface flooding including any increase in frequency or magnitude of flood events;
Groundwater diversion	Rule E7.4.1 (A28)		

Activity	Rule Trigger	Reference	Matters of Discretion
			(viii) from cumulative effects that may arise from the scale, location and/or number of groundwater diversions in the same general area; (ix) from the discharge of groundwater containing sediment or other contaminants; (x) on any scheduled historic heritage place; and (xi) on terrestrial and freshwater ecosystems and habitats. (b) the need for mineral extraction within a Special Purpose - Quarry Zone to carry out dewatering or groundwater level control and diversion and taking of groundwater in the context of mineral extraction activity; (c) monitoring and reporting requirements incorporating, but not limited to: (i) the measurement and recording of water levels and pressures (ii) the measurement and recording of the settlement of the ground, buildings, structures and services; (iii) the measurement and recording of the movement of any retaining walls constructed as part of the excavation or trench; and (iv) requiring the repair, as soon as practicable and at the cost of the consent holder, of any distress to buildings, structures or services caused by the groundwater diversion (d) the duration of the consent and the timing and nature of reviews of consent conditions; (e) the requirement for and conditions of a financial contribution and/or bond; and

Activity	Rule Trigger	Reference	Matters of Discretion
			(f) the requirement for a monitoring and contingency plan or contingency and remedial action plan.
Construction noise and vibration	Rule E25.4.1 (A2)	E25.8.1.(1)	(1) for noise and vibration: (a) the effect on adjacent land uses particularly activities sensitive to noise; and (b) measures to avoid, remedy or mitigate the adverse effects of noise.
Tree trimming of street trees and trees in open space reserves	Rule E26.4.3.1 (A84)	E26.4.7.1.(1) (a)	(1) trees in roads and open space zones: (a) for tree trimming or alteration not meeting Standard E26.4.5.1 (i) the methods proposed to reduce any adverse effects; and (ii) the extent of the alteration of the tree or trees.
Works within the protected rootzone of street trees and trees in open space reserves	Rule E26.4.3.1 (A88)	E26.4.7.1.(1) (b)	(1) Trees in roads and open space zones: (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.
Tree removal within open space reserves and within the road reserves	Rule E26.4.3.1 (A92)	E26.4.7.1.(1) (c)	(1) Trees in roads and open space zones: (c) Tree alteration or removal of greater than 4m in height and trees 400mm in girth: (i) the effect on the values of the tree or trees; and (ii) any loss or reduction of amenity values provided by the tree or trees; (iii) any mitigation proposed; and (iv) the functional and operational requirements and benefits derived from infrastructure.

Activity	Rule Trigger	Reference	Matters of Discretion
Disturbing soil on land containing elevated levels of contaminants	Rule E30.4.1 (A6)	E30.7.1	(1) the adequacy of the detailed site investigation report including: (a) Site sampling; (b) Laboratory analysis; and (c) Risk assessment. (2) the need for and adequacy of a site management plan (contaminated land); (3) the need for and adequacy of a remedial action plan (contaminated land); (4) how the discharge is to be: (a) managed; (b) monitored, including frequency and location of monitoring; and (c) reported on. (5) the physical constraints of the site and operational practicalities; (6) the transport, disposal and tracking of soil and other materials taken away in the course of the activity; (7) the effect on potable water supplies; (8) methods to identify contaminant risks prior to works commencing such as qualitative assessments of risk; (9) protocols around notifying the Council of contaminant risks; (10) how stormwater is to be managed; (11) soil management during work and at the completion of the works; (12) odour control; (13) vapour control; (14) groundwater management; (15) contingency plans; (16) remediation or ongoing management of the site, its timing and standard;

Activity	Rule Trigger	Reference	Matters of Discretion
			(17) the nature and type of close out criteria if proposed; (18) the need for a financial bond; (19) the need for any review conditions in the event that standards to be achieved are not achieved; (20) the timing and nature of the review conditions; and (21) the duration of resource consent.
Diverting the entry and exit points of overland flowpaths to construct shafts	Rule E36.4.1 (A41)	E36.8.1.(12)	(12) for diverting the entry or exit point, piping or reducing the capacity in any part of an overland flow path: (a) the potential impacts on the overland flow path including: (i) the obstruction of flows; and (ii) any change to location and capacity; and (iii) any changes in depth and velocity of flow; and (iv) any change to overland flow on other properties. (b) the provision of alternative overland flow paths; (c) the extent of any associated earthworks; and (d) the extent to which methods for long term maintenance of areas affected by flooding, such as easements, are provided.
Constructing wastewater pipelines within private property sites within the 1% AEP floodplain and overland flowpaths	Rule E36.4.1 (A56)	E36.8.1.(9)	(9) For new structures and buildings (and external alterations to existing buildings) with a gross floor area up to 10m^2 within the 1 per cent annual exceedance probability (AEP) floodplain that do not comply with standard E36.6.1.9; and all other new structures and buildings (and external alterations to existing buildings) within the 1 per cent annual exceedance probability (AEP) floodplain:

Activity	Rule Trigger	Reference	Matters of Discretion
			(a) the effects of the location of the structures and building platforms; (b) the effects of flood hazards on the structural integrity of a building or structure; (c) the effects of storage of outdoor goods and materials; (d) the effects of the location and design of roads, accessways and parking areas; (e) the extent of any associated earthworks (f) the effects of potential changes in flood depth, velocity and frequency on adjoining sites, including upstream and downstream from buildings and structures; (g) the extent to which methods for long term maintenance of areas affected by flooding, such as easements, are provided; (h) the effects of the use of spaces under buildings; and (i) the effects on the operational or functional needs of network utilities, marine and port activities and electricity generation activities.
Land disturbance	Rule E26.3.3.1 (A97) and Rule E26.3.3.1 (A97A)	E26.5.7.1.(2)	(1) all district restricted discretionary activities: (a) compliance with the standards; (b) effects of noise, vibration, odour, dust, lighting and traffic on the surrounding environment; (c) effects on the stability and safety of surrounding land, buildings and structures; (d) effects on overland flow paths and flooding; (e) protocol for the accidental discovery of kōiwi, archaeology and artefacts of Māori origin; (f) the treatment of stockpiled materials on the site including requirements to

Activity	Rule Trigger	Reference	Matters of Discretion
			remove material if it is not to be reused on the site; (g) staging of works and progressive stabilisation; (h) information and monitoring requirements; (i) timing and duration of works; (j) term of consent; (k) potential effects on significant ecological and indigenous biodiversity values; (l) risk that may occur as a result of natural hazards; (m) protection of or provision of network utilities and road networks. (n) potential effects on the natural character and values of the coastal environment, lakes, rivers and their margins, where works encroach into riparian or coastal yards; and (o) positive effects enabled through the land disturbance.
Temporary access to the Stage Highway 16 from SH02 and SH15	Rule E27.4.1 (A5)	E27.8.1.(12)	(12) construction or use of a vehicle crossing where a Vehicle Access Restriction applies under Standard E27.6.4.1(2) and Standard E27.6.4.1(3): (a) adequacy for the site and the proposal; (b) design and location of access; (c) effects on pedestrian and streetscape amenity; and (d) effects on the transport network.

5.5 Summary

Overall, the proposed works require consent as a **restricted discretionary activity** and will require the following district and regional consents under the provisions of the AUP(OP) and NES-CS:

AUP(OP)

- Rule E4.4.1 (A11): Groundwater will be encountered at some shaft locations, particularly at closed landfill sites. Groundwater contamination was identified at SH02 (Suffolk Reserve), where concentrations of copper, nickel, and zinc exceeded the ANZG DGVs for 80% protection criteria. However, these concentrations were below the 80%

protection criteria when applying dilution and reasonable mixing. This requires a **controlled activity** resource consent.

- Rule E7.4.1 (A20): Groundwater is expected to be encountered, and dewatering is likely needed for greater than 30 days at certain locations, therefore cannot comply with Standard E7.6.1.6. This requires **restricted discretionary activity** resource consent.
- Rule E7.4.1 (A28): The wastewater pipeline diameter is 1.8m and groundwater diversion will be needed for more than 10 days at specific locations. Standards E7.6.1.10(2) – (6), therefore applies to the groundwater diversion activity and the activity cannot comply with Standards E7.6.1.10(2)(b), 4(b) and 5(b) and therefore requires a **restricted discretionary activity** resource consent.
- Rule E25.4.1 (A2): Construction noise and vibration levels will not comply with Standards E25.6.27 and E25.6.30 and therefore requires a **restricted discretionary activity** resource consent.
- Rule E26.4.3.1 (A84): Tree trimming of trees in open space zones and street trees is required to facilitate construction/machinery access and where the diameter of any branch is greater than 100mm will require resource consent as a **restricted discretionary activity**.
- Rule E26.4.3.1 (A88): Works will occur within the protected rootzone of open space zone trees and street trees where roots greater than 80mm will be encountered. This requires **a restricted discretionary activity** resource consent.
- Rule E26.4.3.1 (A92): Works will involve the removal of street trees and open space zone trees that are greater than 4m in height and 400mm in girth and therefore requires a **restricted discretionary activity** resource consent.
- Rule E26.3.3.1 (A97): The maximum earthworks at any given time is likely to be between SH01-SH04 and be 6,100m^2. This requires requires resource consent as a **restricted discretionary activity**.
- Rule E26.3.3.1 (A97A): The maximum earthworks volume disturbed at any given time is 41,150m^3 between SH01-SH04 for tunnel spoil. This requires a **restricted discretionary activity** resource consent**.**
- Rule E30.4.1 (A6): The project cannot comply with Standard E30.6.1.4(1) as lead and arsenic concentrations exceeded permitted activity criteria at SH12A and SH13. At SH12A pyrene concentrations exceeded the MfE petroleum guideline-soil acceptance criteria. Arsenic concentration (at SH09 and SH11) and lead concentration (at SH02, SH04, SH12, SH13, SH14) exceeded the Auckland background soil concentration limits. This requires a **controlled activity** resource consent.
- Rule C1.9.(2): Temporary stockpiling of soil and other materials will be needed within the overland flowpaths and the 1% AEP floodplain. This will last longer than 28 days, therefore cannot comply with Standard E26.5.5.2.(20). This requires a **restricted discretionary activity** resource consent.
- Rule E27.4.1 (A5): Temporary access will be required to State Highway 16 (an arterial road in the AUP(OP) maps) from SH02 (Suffolk Reserve) and SH15 (Arch Hill Scenic Reserve). This requires resource consent as a **restricted discretionary activity** resource consent.

NES-CS

- Regulation 9: A Detailed Site Investigation (DSI) currently exists for the Project alignment. The DSI has established contaminant concentrations are above background soil concentrations but below any applicable human health standard for the project. As the permitted standards of Regulation 8(3) cannot be met, a **controlled activity** resource consent is needed in accordance with Regulation 9 of the NES-CS for this project.

6 Assessment of Effects on the Environment

Pursuant to the Fourth Schedule of the Resource Management Act 1991, the following assessment is provided of the actual and potential effects that can be reasonably expected from the proposed works.

6.1 Receiving Environment

The receiving environment at the time of this application includes permitted activities within the works location or in proximity to the works location under the relevant plans, lawfully established activities (via existing use rights or resource consent) and any unimplemented resource consents that are likely to be implemented. This existing environment is therefore considered as part of the effects assessment below and has previously described in Section 3 of this AEE.

6.2 Permitted Baseline

Sections 95D(b) and 95E(2)(a) provide that when determining the extent of the adverse effects of an activity or the effects on a person respectively, the decision maker 'may disregard an adverse effect if a rule or national environmental standard permits an activity with that effect'. This is known as the permitted activity baseline test. While the application of the permitted baseline is discretionary, there is nothing unusual or unique that would render its implementation inappropriate. On this basis, the following permitted baseline has been identified:

- Groundwater dewatering at shaft locations up to 30 days;
- Excavations for shafts extending up to 6m below ground level and up to 2m below groundwater level;
- A tunnel or pipe with an external diameter of 0.2-1.5m that extends below natural groundwater level must be 2m or greater from existing buildings and structures;
- Construction noise up to 70dB and vibration levels for heritage buildings up to 3mm/s PPV with respect to cosmetic damage limits. The amenity limits for vibration is 2mm/s PPV for all buildings;
- Works within the protected rootzone of trees where the roots are under 60mm and the works complies with Standard E26.4.5.2.(1) and for roots between 60mm to 80mm the works complies with E26.4.5.2(2);
- The removal of trees less than 4m in height and/or 400mm in girth within the open space and road reserve;
- Maximum land disturbance at any given time not exceeding 2,500m^3 over 2,500m^2; and
- Land disturbance of soil containing elevated levels of contaminants not exceeding 200m^3.

As noted above, the application of the permitted baseline is discretionary. Even if the permitted baseline is disregarded, the effects of the Project have been fully addressed for the following reasons:

- To manage potential groundwater settlement effects, a comprehensive monitoring programme is proposed with measures to be finalised in a Ground and Settlement Monitoring and Contingency Plan (GSMCP).
- The existing noise environment along most of the Project alignment is already elevated due to its proximity to State Highway 16, with ambient noise levels around 75 dB LAeq over a 24-hour period. The sources of construction noise and vibration are also localised to shaft sites. To mitigate construction noise impacts at affected properties, a comprehensive suite of measures will be implemented through the Construction Noise and Vibration Management Plan (CNVMP).
- Construction traffic will be managed by the Project's CTMP which will be finalised as part of the Corridor Access Request (CAR) process. The CTMP will detail haulage routes, site access arrangements, temporary traffic controls, parking restrictions, pedestrian and cyclist safety measures, and communication protocols with affected parties. It will also include monitoring and reporting mechanisms to ensure compliance and responsiveness to any issues that arise.
- Road works are a common occurrence in across Auckland and can often result in temporary on-street parking restrictions or disruptions to traffic movement. Road works can often be undertaken without the need to obtain resource consent. Additionally, the shaft locations are within 1 kilometre to arterial roads such as Great North Road and New North Road, and adequate capacity exists for construction traffic movements.
- Land disturbance and the disturbance of contaminated soils will be undertaken in accordance with standard practices employed in the Auckland Region.
- Vegetation works will be supervised by an Arborist and replacement of removed vegetation will involve the replanting of like-for-like indigenous species where practicable.

The combination of mitigation measures and proposed management plans therefore address the full range of environmental effects generated by the Project.

6.3 Positive Effects

There are a number of positive effects associated with this Project, including the following:

- The new 3.2 km collector tunnel will improve wastewater conveyance and reduce wet weather overflows. This Project will therefore help address health and safety risks in the wider community from the discharge of untreated sewage.
- The project will reduce the discharge of untreated wastewater into receiving waterways, protecting aquatic ecosystems and allowing biodiversity values to improve.
- The project will allow the general public to participate in water based recreational activities safely and will reduce the number of beach closures in the Auckland Region.
- This Project will reduce the resources and effort needed to clean up waterways due to the discharge of untreated wastewater.
- The Project will help support Auckland's growing population and ongoing urban intensification, including that enabled by PC78.

6.4 Groundwater Settlement Effects

A Groundwater Settlement Effects Assessment (Appendix F) has been prepared to support this Project. This details the potential for construction related settlement associated with the proposed excavations (shafts and tunnelling) and dewatering required for the Project. The technical assessment has identified the following effect types of interest:

- Groundwater diversion effects;
- Effects on neighbouring bores;
- Effects from saline intrusion;
- Effects on nearby waterbodies; and
- Settlement effects.

Firstly, the groundwater diversion effects are expected to be negligible. While some diversion of groundwater flows are anticipated due to the shafts and pipelines, any diversion will be localised to the immediate area of those structures. The Project will not alter the overarching flow of groundwater through the affected aquifer. Similarly, any effects on neighbouring bores is anticipated to be negligible given the limited scale of any groundwater drawdown, while saline intrusion is not expected given the distance of the works to the coastal environment. Lastly, negligible effects are expected on surface waterbodies given the distances of works from those features and proposed construction methodologies.

The primary groundwater effects relate to settlement due to dewatering. As detailed in the technical assessment, the construction of shafts and tunnels has the potential to induce both vertical and lateral ground movement. The creation of a “zone of influence” has been undertaken, where ground settlement may exceed 10mm. This is an approach consistent with other large infrastructure projects and national guidance. The assessment has combined drawdown-induced consolidation and mechanically induced settlement to estimate ground movements and inform potential effects on surrounding structures at shaft locations.

In general, ground settlements will range from less than 5mm to approximately 28mm, and are dependent on excavation depths and ground conditions. Typically, the greatest ground settlement will occur within the construction footprints, reducing in extent the further a site is from those construction activities. These ground settlement effects have focused on:

- Effects on State Highways;
- Effects at Basque Park;
- Effects on utilities; and
- Effects on private sites.

Turning first to the State Highways, the Project may generate movements below 15mm with some localised settlement of up to 18mm. Given the importance of the State Highways, Watercare is engaging with NZTA in regard to this settlement and any potential impacts on their assets. This engagement is ongoing and is a requirement of NZTA’s initial approval for these works.

The Basque Park branch will pass through fill materials associated with a closed landfill on a soft alluvium. The technical assessment has identified potential settlement of up to 11 mm at the surface in this area, reducing to 10 mm or less at surrounding structures due to the

proposed shaft excavation. The branch connection at the park that travels from the main alignment will go underneath two buildings (15 Fleet Street and 6 Piwakawaka Street). A review of the design records for those buildings indicates the presence of basements and pile foundations. While the estimated settlement at the pile toes will be small (less than or equal to 2mm), Watercare have proposed to undertake detailed structural assessments during the Project's detailed design phase. Those assessments will be augmented by construction monitoring and the offering of pre-condition surveys to the buildings' owners.

A range of utilities are located within the Project corridor, including water, wastewater, stormwater, gas, power and telecommunications services. These are typically situated within road reserves and, in general, are expected to be tolerate of minor ground movement. However, it is acknowledged that where assets are shallow or made from brittle materials, settlements of 15mm or greater may generate greater risks. While it has not been possible to map or analyse all utilities, a screening assessment has been employed. While most utilities are likely to be able to accommodate differential settlements on the order of 1V:750H (steepest settlement gradient identified) without damage, localised effects may still occur. Watercare will engagement with other infrastructure providers to protect these utilities. Pre-construction condition assessments and the development of contingency plans will also be employed where higher risks are identified, and continuity of service needs to be maintained.

Finally, most residential and commercial properties along the alignment are predicted to experience less than 10 mm of settlement. However, there may be settlement of 23mm on occasion where softer ground conditions are present. Such settlement may cause cosmetic damage such as:

- Cracking of internal brittle finished such as plaster. Cracks are expected to be easily filled and repaired.
- Exterior cracking may be visible and some repainting may be required for weather tightness.
- Doors and windows may stick slightly requiring adjustment.

In order to address these settlement risks, Watercare propose to undertake condition surveys where settlement may be 10mm or greater.

In addition to the above mentioned building surveys and design approach, Watercare also propose a comprehensive monitoring programme. This includes the installation of survey markers to track ground and building movement, standpipe piezometers to monitor groundwater levels, and tunnel settlement arrays at regular intervals and near critical infrastructure. Trigger levels for alert and alarm responses will be defined, with the alarm level set at the threshold for minor damage and the alert level at 80% of that value. These measures will be formalised in a GSMCP, ensuring that any unexpected ground movement is promptly addressed.

With the proposed monitoring and mitigation measures in place, the effects of the project on groundwater and settlement are considered to be no more than minor.

6.5 Construction Noise and Vibration Effects

The Project requires resource consent due to anticipated exceedances of construction noise and vibration limits set out in the AUP(OP) and the Construction Noise and Vibration

Assessment (Appendix C). The project involves tunnelling/pipe jacking and surface works, which includes piling and open trenching[10]. The projected exceedances of the AUP(OP)'s construction noise and vibration limits are:

- Noise Levels: During piling associated with shaft construction, 67 out of 185 receivers may experience noise above the AUP(OP) daytime limit of 70 dB L_{Aeq}[11], with 8 receivers expected to experience exceedance of the 80 dB L_{Aeq} limit as a result of the shaft construction works. Open trenching may generate similarly elevated noise levels (up to 86 dB L_{Aeq}) at 34 properties, especially when rock breakers are used.
- Vibration Levels: While 51 receivers are predicted to experience an exceedance of the AUP(OP) amenity vibration limit of 2 mm/s PPV as a result of shaft construction, these levels remain below the cosmetic damage threshold of 5 mm/s PPV except for 5 properties (28 Buchanan Street, 30 Buchanan Street, 41 Kingsland Avenue and 69 Finch Street). These properties are located within 5m of open trench works are predicted to experience breaches of the DIN 4150-3 residential threshold as noted in the Construction Noise and Vibration Assessment and may experience vibration limits of between 5-7mm/s PPV. C5 heritage properties within the Cooper Street heritage area (41, 43, 48 and 50 Cooper Street) may experience vibration levels of 3–4 mm/s PPV during rock breaking or vibro piling which is above the DIN 4150-3 sensitive structure threshold of 3mm/s PPV. The Project therefore does not comply with Standard E25.6.30.(1)(a).

Pipe jacking will operate during daytime hours, while the TBM may operate 24/7, with both methods compliant with AUP(OP) standards for daytime noise and vibration. Night-time TBM operations will also meet noise and vibration standards.

The existing noise environment along most of the Project alignment is already elevated due to its proximity to State Highway 16, with ambient noise levels around 75 dB L_{Aeq} over a 24-hour period. These levels are influenced primarily by road traffic and are higher than those found in most suburban areas. The alignment passes through a mix of residential, commercial, and open space zones, with sensitive receivers including single and multi-storey dwellings, heritage buildings and apartment complexes such as those adjoining Basque Park.

Construction noise effects are expected to be most significant during shaft construction and open trenching works. The highest predicted noise level associated with shaft construction is 89 dB L_{Aeq} at 30 Warwick Street, Western Springs. The highest predicted noise level associated with open trenching is 86 dB L_{Aeq} at 69 Finch Street, Western Springs. These effects will be greatest for 9 receivers located in proximity to shaft works; particularly multi-storey buildings where standard 2-metre noise barriers are less effective for upper floors. This includes:

- 90/744 Great North Road (Apartments) at SH07a where shaft construction will result in 77dB L_{Aeq}.

[10] Open trenching means installing temporary excavation support (trench shields), removal of spoil and loading onto trucks, installing bedding and the new pipe/manhole and backfilling of the shaft sites and the reinstatement works.

[11] For works that are more than 20 weeks.

- 44/88 Tuarangi Road, Grey Lynn (Apartments) at SH07a where shaft construction will result in 72dB L_{Aeq}.
- 57/736 Great North Road (Apartments) at SH07a where shaft construction will result in 72dB L_{Aeq}.
- 103/22 Fleet Road (Apartments) at SH12a where shaft construction will result in 79dB L_{Aeq}.
- 37 Fleet Street (Apartments) at SH12a where shaft construction will result in 78dB L_{Aeq}.
- 19-35 Fleet Street (Apartments) at SH12a where shaft construction will result in 76dB L_{Aeq}.
- 10 Fleet Street (Apartments) at SH12a where shaft construction will result in 74dB L_{Aeq}.

To mitigate construction noise impacts at affected properties, a comprehensive suite of measures will be implemented through the CNVMP. This will include the installation of 2m high noise barriers around all shaft construction areas. For multi-storey buildings, where standard barriers are less effective, additional shielding or acoustic curtains may be used to reduce noise exposure to upper floors. Trenchless excavation methods will also help reduce noise levels by up to 6dB in sensitive areas.

Scheduling will be optimised to avoid particularly sensitive times, such as early mornings or periods when residents are likely to be home. High-noise activities like piling will be completed as efficiently as possible to minimise duration, typically occurring for a few hours per day over short periods. These noise generating works mainly relate to shaft establishment. Residents will be informed of the proposed timing of specific works, the anticipated noise and/or vibration levels and the mitigation to be used. Those within 50m of any shaft work or tunneling works will be individually consulted and communications will be undertaken on an ongoing basis. This proactive communication will help manage expectations, provide an opportunity for any targeted mitigation measures such as selecting equipment and methodologies to minimise vibration near heritage listed buildings. This will also reduce the likelihood of complaints, which will be recorded and actioned upon.

Monitoring of noise and vibration will be conducted as per the Project's CNVMP. If exceedances are detected or complaints are received, mitigation measures will be reviewed and adjusted accordingly. Additionally, construction support areas at shaft locations will be designed to place noisy equipment away from sensitive receivers, and welfare cabins or storage containers may be used as additional shielding, thereby reducing noise emissions.

The most affected sites in terms of vibration are primarily located near open trenching and shaft construction areas where rock breaking and vibro piling are proposed. Specifically, 5 residential properties predicted to experience vibration levels between 5 and 7 mm/s peak particle velocity (PPV), which exceed the AUP(OP) amenity threshold of 2 mm/s and approach or slightly exceed the 5 mm/s cosmetic damage threshold for residential buildings.

Additionally, four heritage properties on Cooper Street (41, 43, 48, and 50 Cooper Street) are expected to experience vibration levels of 3–4 mm/s PPV. These levels exceed the 3 mm/s PPV threshold for sensitive structures under the DIN 4150-3 standard outlined in Standard E25.6.30.(1)(a), which is used to assess the risk of cosmetic damage to heritage buildings.

While these levels are not expected to cause structural damage, they may result in minor cosmetic effects such as cracking in plaster or detachment of partitions.

To manage these risks, the Project will implement targeted mitigation measures, including the use of alternative low-vibration construction methods (e.g., concrete saws or bore piling), real-time vibration monitoring, and pre- and post-construction condition surveys at the most affected properties. Pre- and post-construction building condition surveys will be undertaken to document existing conditions and assess any damage potentially caused by construction. If damage is attributed to the Project, Watercare will fund repairs.

If noise and vibration impacts cannot be adequately mitigated with the measures discussed above, temporary relocation will be considered. The sites where temporary relocation might be considered on a case-by-case basis includes those where the predicted noise levels exceed 85 dB LAeq or higher. The duration of relocation will depend on individual circumstances and the nature of the work (activity, duration and level of noise).

Together, these measures aim to ensure that noise and vibration effects are effectively managed and minimised, even at the most sensitive locations. The approach reflects best practice and builds on successful strategies used in other major Auckland infrastructure projects, such as the Central Interceptor and CRL.

In conclusion, while the Project is expected to generate elevated noise and vibration levels during certain construction activities, these effects are typical of large-scale infrastructure projects in urban environments. With the implementation of the CNVMP and adherence to the best practicable options, the effects are considered manageable and within acceptable limits. Therefore, the effects are considered to be no more than minor.

6.6 Construction Traffic Effects

The Project involves the establishment of up to four active shaft locations at any one time over a 24-month construction period. At some sites (SH05, SH06, SH08, SH09, SH10, SH13 and SH14) vehicles are expected to exit the site in the same direction/route that they entered the site, while at other sites, it is possible to ensure that there is only one way traffic movement (i.e., vehicles enter the site from one direction and leave the site heading in a different direction).

Construction traffic generation at SH14 (accessed off Cooper Street) will represent the worst-case scenario where 154 two-direction movements are likely to occur per day over a 5-day period. This includes heavy commercial vehicles for spoil removal, backfill, and material deliveries, as well as light trucks and staff transport vans. At peak, the Project could generate up to 494 two-way movements per day across all sites (SH05, SH06, SH07 and SH08), or approximately 45 two-way movements per hour. These trips will be spread throughout the day and the CTMP will ensure these trips are coordinated to avoid congestion, with no deliveries occurring simultaneously and staff arrivals managed via shared vans, where practicable.

It should also be noted that the 494 two-way movements generated will only be during the peak construction works and not for the entire duration of the construction at any of the shaft locations. The construction duration at the four shaft locations noted above will range between 30 and 50 days. This represents the worst-case scenario in terms of construction traffic generation and applies to the pipe-jacking method. If the TBM method is employed, construction traffic volumes will decrease as the transport of spoil away from the Project area

along with all the other construction activity will be predominantly at SH01 and SH08 and where the branch connections intersect with the collector sewer. The TBM option will therefore not need as many shaft locations compared to the pipe jacking option, so if the TBM option is selected, this would lead to lesser construction traffic related effects.

Most of the construction traffic will use the State Highway network (State Highway 1 and State Highway 16), which has sufficient capacity and geometry to accommodate the additional traffic volumes without noticeable impacts on travel times. In addition to this, many of the shaft locations (SH03, SH04, SH05, SH05a, SH06, SH07, SH13 and SH14) can be accessed off New North Road or Great North Road (i.e. arterial roads) providing access to the Project area.

These routes are within a 1km radius of the Project area, so they are relatively close to the shaft locations. Arterial and collector roads linking to the shaft locations are also generally suitable, although some local access roads are narrow, with high levels of on-street parking and tight turning radii. This represents the key construction traffic constraint for the Project as this could otherwise result in impacting safe ingress/egress to shaft locations and will impact the ability of large construction vehicles to drop off collect materials and potentially circulate on site.

To mitigate this effect, temporary one-way traffic management, time-limited or full removal of on-street parking is proposed [at some locations]. It should however be noted that time limits or full removal of on-street parking will only apply during the construction hours (i.e., after 6pm, there will be no restrictions). Further to this, as the parking restrictions will mostly occur during work hours and given the residential nature of most of the Project area, the impact of these parking restrictions will be less disruptive.

It is noted that road works are a regular activity across Auckland and can often cause temporary disruptions to on-street parking. This includes disruptions to parking and traffic movements associated with permitted activities, with management of those disruptions addressed through CTMPs and/or CARs. The Project's works are typical when viewed through a regional-wide planning lens. Furthermore, the temporary nature of the Project's works, as well as Watercare's familiarity with managing the construction traffic effects of its capital works portfolio, highlights that these transport effects can be effectively addressed by the proposed measures. A key component of the CTMP and its measures will be the communication measures employed when informing residents, community facilities and businesses of any temporary disruptions. This early communication with those parties will provide adequate notice of parking disruptions, road closures and detours.

In the areas where the local road network is narrow and there are constraints in the ability for large vehicles to maneuver, haulage will be limited to single-unit trucks with a maximum carrying capacity of $10m^3$. These single-unit trucks will also be required to follow designated local roads within the Project area to minimise construction phase traffic disturbance. In locations where there are narrow local roads or space constraints, the Project will rely on the timely delivery and removal of materials to maintain efficient progress as will be noted in the Project's CTMP. This approach is particularly important for managing spoil removal, backfilling, and the delivery of pipes and other construction components.

To manage this reliance on timely deliveries, all vehicle movements will be coordinated by the Contractor with deliveries being scheduled to avoid overlapping and vehicle arrivals spaced

during peak periods. This staggered scheduling is intended to prevent congestion on local roads and within the staging sites themselves.

Access to shaft locations will also account for existing residential and commercial vehicle crossings. The Project will ensure that residential and commercial vehicle crossings will remain open throughout construction. While no full road closures are anticipated, temporary traffic management will be required to maintain safe and efficient access for all road users, including for pedestrians and cyclists. The Northwestern Cycleway and adjacent pedestrian paths may be affected at specific locations (notably near SH02, SH03, SH04, SH05, SH06, SH07, SH13, SH14 and SH15), requiring either a narrowing of the cycleway, temporary diversions or access modifications. However, no full or permanent closures of the cycleway are expected. Access for construction vehicles from State Highway 16 to SH02 and SH15 will also occur in accordance with temporary traffic management measures agreed with NZTA.

Construction activities will generally occur during standard working hours (7am – 6pm weekdays, 8am–6pm Saturdays). While the TBM will be in operation 24 hours a day, six days a week deliverers will be restricted to daytime hours only. Each shaft location is expected to be active for up to 12 weeks, with traffic effects limited to these timeframes.

To manage these effects a CTMP is to be developed by a qualified Site Traffic Management Specialist under the direction of a Chartered Professional Engineer and will form part of the CAR approval process administered by AT. The CTMP will detail haulage routes, site access arrangements, temporary traffic controls, parking restrictions, pedestrian and cyclist safety measures, and communication protocols with residents and businesses. It will also include monitoring and reporting mechanisms to ensure compliance and responsiveness to any issues that arise. The CTMP will be provided to the Council for monitoring purposes.

While the Project will result in a temporary increase in construction-related traffic, these effects can be accommodated within the existing road network. The Construction Traffic Management Assessment states that with the implementation of an approved CTMP and active coordination with AT, NZTA and local stakeholders (including local schools), the transport network can accommodate the proposed works without significant disruption. Furthermore, construction traffic effects have been assessed as temporary, localised and able to be effectively managed through appropriate mitigation dictated by the Project's CTMP.

Consequently, the construction traffic effects will be no more than minor.

6.7 Land Disturbance Effects

It is noted that construction works will occur over four shaft locations at any given time. This approach represents the best practicable option from a land disturbance perspective as the earthworks will be progressive but will also allow the Project to be progressed in a timely manner. As mentioned in Section 5, it is likely that the maximum earthworks undertaken at any given time will be 41,150m^3 over 6,100m^2 associated with the earthworks areas and volumes between SH01 to SH04.

The Project primarily employs trenchless construction methods, such as a TBM or pipe jacking, which significantly reduce surface disturbance and the volume of excavated soil. Spoil generated from tunnelling is transported in a closed slurry circuit to separation plants, where it is processed into silts, sands, and gravels. Clean fill materials are disposed of appropriately,

while finer materials are treated using centrifuges or belt presses before being transported to approved disposal sites. Temporary on-site spoil storage is also planned to avoid transporting material during peak traffic hours, with these areas managed to prevent runoff and dust emissions in accordance with GD05.

The use of closed-circuit slurry systems helps contain soil and groundwater, reducing the risk of sediment-laden runoff. Dewatering and groundwater drawdown are minimized through the use of secant pile shafts, which also help prevent settlement. Surface water management strategies include bunding, sediment traps, and controlled discharge points. Vegetation removal is minimized, and disturbed areas will be reinstated with appropriate stabilisation and planting. Additionally, automatic monitoring systems such as SiteHive or Adroit will be employed to provide real-time data on turbidity, groundwater levels, and other environmental indicators, ensuring compliance with Auckland Council's GD05.

The works will adhere to the Accidental Discovery Protocols under Standard E26.5.5.1 to manage the potential effects of land disturbance on kōiwi, archaeology and other taonga.

Based on the above, the land disturbance effects will be less than minor.

6.8 Flooding Effects

All of the shaft locations are subject to at least one type of flood hazard as detailed by Appendix I. The three types of flood hazards are OLFPs, flood prone areas and floodplains. Flooding during construction could result in damage to works, site infrastructure, and pose risks to workers. Furthermore, temporary stockpiling or excavations could obstruct or displace floodwater, increasing flood hazards at adjacent properties if not mitigated.

To address flooding risks, Watercare will adopt the recommended flood protection measures. This includes constructing barriers such as piles or concrete walls around the shaft to extend above the expected flood level. These measures are intended to prevent inundation of the shafts and tunnels during heavy rainfall events, thereby managing overland flow and protecting the integrity of the construction works. The other measures to manage flood risks are noted below:

- Adjusting site layouts to accommodate natural drainage patterns. This involves maintaining safe, unobstructed flow paths through the site to manage water velocity and direction;
- Use temporary channels or swales to divert flow around construction zones while preserving entry and exit points of overland flow paths;
- Elevate equipment and containers to allow water to flow beneath;
- Installing physical barriers (e.g., using bunds) to prevent floodwater ingress;
- Align stockpiles and equipment with flow direction and limit their volume;
- Avoid placing materials in areas prone to ponding or flow concentration; and
- Consulting with stakeholders and authorities to coordinate access and drainage impacts.

In addition to the above, the flood risks noted above are only likely in the event of a 1% AEP storm event and during the construction phase. As discussed previously, each shaft location is likely to be in operation for 4 months, and thereafter, it will be reinstated, therefore the likelihood of these risks arising is low.

The effects of land disturbance can therefore be managed to ensure there is no discharge of sediment into the receiving environment and will not be significant.

6.9 Contaminated Land Effects

The Project requires resource consent under both the NES-CS and Chapter E30 of the AUP(OP) due to the HAIL activities that have taken place within and adjacent to the Project area and the contaminants present in soil (particularly concentrations of arsenic at SH09, SH11, lead concentrations at SH02, SH04, SH12, SH13, SH14 and arsenic and pyrene at SH12A). These exceeded the Auckland background soil concentration limits.

Although the DSI confirms that contaminant concentrations do not exceed human health criteria, they do exceed background levels, meaning the permitted activity standards under Regulation 8(3) of the NES-CS are not met. Consequently, consent under Regulation 9 is required as noted above. Similarly, under AUP(OP), the volume of earthworks associated with shaft construction is expected to exceed the 200m^3 threshold for soils containing elevated levels of contaminants, with these contaminants exceeding the permitted activity soil acceptance criteria in Table E30.6.1.4.1 of the AUP(OP). This includes exceedances of both environmental/ecological thresholds and Auckland background soil concentrations. Therefore, a controlled activity consent is also required under the AUP(OP).

The DSI identified a range of contaminants of concern across the Project area, particularly at shaft locations where excavation and dewatering will occur. This is outlined in Table 10 below:

Table 10. Soil contaminant exceedances under Chapter E30 of the AUP(OP)

Shaft Location	Contaminant of Concern	Measured Concentration (mg/kg)	Permitted Threshold (mg/kg)	Criteria Exceeded
SH02	Lead	89	65	Auckland background soil concentration
SH04	Lead	114	65	Auckland background soil concentration
SH09	Arsenic	24	12	Auckland background soil concentration
SH11	Arsenic	70	12	Auckland background soil concentration
SH12	Lead	75	65	Auckland background soil concentration
SH12A	Lead	92	65	Auckland background soil concentration

Shaft Location	Contaminant of Concern	Measured Concentration (mg/kg)	Permitted Threshold (mg/kg)	Criteria Exceeded
SH12A	Pyrene	7.8	1.2	Environmental/ecological
SH13	Lead	900	250	Environmental/ecological
SH14	Lead	99	65	Auckland background soil concentration
SH14[12]	Lead	98	65	Auckland background soil concentration
20 m south of SH06	Lead	199	65	Auckland background soil concentration
205 to the southeast of SH08	Lead	69	65	Auckland background soil concentration
215 m to the east of SH04	Lead	187	65	Auckland background soil concentration

To manage these risks, a suite of mitigation and remediation measures has been proposed. A draft Contaminated Land Management Plan (CLMP) has been prepared to guide the handling, storage, and disposal of contaminated soil and groundwater. This plan includes protocols for soil segregation, dust and odour control, spill response, and worker health and safety. The key measures in the CLMP will include but not be limited to the following:

- Soil disposal will be managed in accordance with WasteMINZ guidelines, with most soils suitable for Class 3 managed fill. Soils at SH13 are suitability for Class 1 or 2 landfill disposal, while deeper uncontaminated soils are considered appropriate for cleanfill disposal;
- Asbestos management will follow the Health and Safety at Work (Asbestos) Regulations 2016 and BRANZ guidelines, ensuring safe handling and disposal of asbestos containing materials;
- Stockpiling will be kept to a minimum and only occur on impermeable surfaces with bunding and cover to prevent runoff. Dust and odour will be managed through water sprays and tarpaulins;
- Implementation of an ESCP at all shaft locations;
- Adherence to the unexpected contamination discovery protocols which include the following:

[12] From two separate borehole readings (Refer to DSI)

- Stop works immediately in the affected area;
- The material to be left in place until assessed by a suitably qualified and experienced professional. The suitably qualified and experienced professional will undertake sampling to characterise the material, notify Auckland Council and prepare a Remedial Action Plan (RAP) if necessary; and

- The requirement for mandatory site inductions, Personal Protective Equipment (PPE) and decontamination facilities.

Dewatering will be required at several shaft locations. Groundwater will be monitored and, if necessary, treated to prevent off-site migration of contaminants. Any contaminated groundwater will likely be collected for disposal at a licensed facility.

Upon completion, a Works Completion Report (WCR) and, if needed, a Site Validation Report (SVR) will be submitted, documenting compliance, disposal records, and any remediation undertaken. Overall, the CLMP provides a rigorous framework for managing contaminated land risks during the Project's construction phase and provides suitable remediation measures. As such, effects are considered to be less than minor.

6.10 Arboricultural Effects

A total of 32 individual trees, ranging in height from 5 to 16 m and collectively contributing 1,092m^2 of canopy cover, are proposed for removal as part of the Project. Additionally, approximately 420 m^2 of canopy cover (including trees ranging from 5-8m in height) will be removed from densely vegetated areas, specifically within Tree Groups 8 and 93, where the number of individual trees cannot be accurately determined. The Arboricultural Assessment (Appendix B) notes that the majority of trees within the Project area are considered to be of fair or good health and are a mixture of mature native and exotic species. To mitigate the effects of tree removals, replacement planting of 88 trees to mitigate the total canopy loss of 1,512m^2 will occur within the Albert – Eden and Waitematā local board areas.

In addition to tree removals, construction activities such as shaft excavation, trenching, and machinery access will occur within the protected rootzone of open space zone and street trees. In several cases, the disturbance will likely exceed 20% of the protected rootzone of these trees or roots with a diameter of greater than 80mm may be encountered. While tunnelling is generally deep enough to avoid root impacts, open trenching and shaft construction can pose risks of root severance and soil compaction.

All construction projects carry an inherent risk of damage to nearby trees. The Arboricultural Assessment notes that such damage can be caused by machine tracking through tree root zones, soil churning and soil compaction in protected rootzone of trees, overhead branch strikes, spillage, or discharge of phytotoxic substances such as petrol or diesel. Although such collateral impacts may occasionally lead to tree damage, they can be effectively managed through the implementation of recognised arboricultural best practices.

Key to this will be the appointment of a suitably qualified and experienced supervising arborist to oversee and support the works. The supervising arborist will ensure that all activities within protected rootzone of street and opens space zone trees are conducted in accordance with best arboricultural practices, including monthly audits and a pre-start meeting prior to

construction commencing. The pre-start meeting will ensure that the agreed tree protection methodologies to be undertaken are confirmed with the Contractor and also when arboricultural supervision will be necessary. Additional mitigation measures include the installation of temporary tree protection fencing and ground protection to prevent soil compaction.

The arboricultural effects are therefore considered to be less than minor.

6.11 Landscape Effects

It should be noted that from a landscape effects perspective, the shaft locations are the main focus of the Landscape Effects Assessment (Appendix H). These shafts are situated in a variety of residential, mixed use and recreational zones. This includes parks, reserves, and road corridors. The existing environment is characterised by a mix of dense urban development, open green spaces and transport infrastructure such as State Highway 16. While the underground nature of the Project minimises widespread landscape disruption, its construction and presence of access shafts, some ventilation stacks, and associated works have the potential to impact local landscape character and visual amenity.

The Project's impacts are generally localised and vary depending on the shaft location. In most cases, the effects on landscape character and visual amenity are assessed as very low to neutral (translating to a less than minor effect), particularly where construction occurs in already modified urban environments or where vegetation removal is minimal. However, at several sites, such as SH02 (Suffolk Reserve), SH04 (Fourth Avenue), and SH07 (Myrtle Street), the removal of mature vegetation and the introduction of new infrastructure elements like ventilation stacks are expected to result in low (less than minor) adverse effects. These impacts are primarily visual, affecting nearby residents, pedestrians, and users of the Northwestern Cycleway, and are often temporary or mitigation measures are readily available.

To address these impacts, a comprehensive suite of mitigation measures are proposed. These include the replacement of removed vegetation with like-for-like indigenous species, strategic placement of new plantings to restore visual screening and landscape continuity, and the use of recessive colours for new infrastructure to reduce visual prominence. In areas where vegetation plays a key role in screening or amenity, such as near residential properties or along the Northwestern Cycleway, mitigation planting is designed to re-establish the intended landscape character and visual buffer.

Additionally, detailed landscape planting and maintenance plans for each area where a protected tree is being removed is proposed, ensuring the successful establishment and long-term viability of mitigation efforts. These plans will be developed in collaboration with the Project’s arborist and the engineering teams to avoid conflicts with underground services and ensure ecological and aesthetic outcomes are achieved. The detailed landscape planting and maintenance plan will include details of implementation procedures, layout of planting, species and their mixes and proposed densities. Maintenance measures that will be detailed includes timelines and staging (if proposed), site preparation, vegetation maintenance measures, monitoring and reporting requirements.

Overall, the Project is expected to be delivered without causing significant adverse effects or any irreversible impacts to the landscape or visual environment. With the proposed mitigation in place, the effects are anticipated will be less than minor and largely transitory.

6.12 Vulnerability of Infrastructure to Flooding Effects

Upon completion, the Project area will be reinstated and there will not be any change in ground levels. This will result in maintaining the storage capacity in flood-prone areas, ultimately lowering the impact on the performance of other stormwater infrastructure. The Hazard Risk Assessment (Appendix I) confirms that flood risks are therefore not likely to be exacerbated. Further to this, the wastewater pipeline will be underground and will not result in any obstruction to the overland flows or the 1% AEP floodplain once built. It is also important to note that the wastewater network is largely gravity feed, meaning that assets are often required to be located within flood prone conditions.

Construction phase effects have been discussed in Section 6.7 above. Effects of constructing the wastewater pipeline within the overland flowpath and 1% AEP floodplain are less than minor.

6.13 Summary

In conclusion the effects of the Project on the environment are considered to be no more than minor for the following reasons:

- Settlement effects are not significant, with works subject to building condition surveys and the proposed GSMCP;
- Construction noise and vibration exceedances are limited to shaft locations. Works will be undertaken in accordance with a CNVMP which will detail consultation requirements, identify when noisy or vibration generating activities can be undertaken, will detail mitigation measures to be implemented. Targeted vibration mitigation measures will be implemented near buildings where exceedances will occur;
- Construction traffic will be managed by the Project's CTMP and the CAR process;
- Land disturbance will be undertaken in accordance with GD05 and disturbance of contaminated soils will be undertaken in accordance with the CLMP;
- Works within the protected rootzone of street and open space trees and the removal of these trees will be supervised by an Arborist. A pre-start meeting will occur, and tree protection methodologies will be implemented;
- The Project will provide a detailed landscape planting and maintenance plans as mitigation for the removal of protected trees;
- Visual effects will generally be less than minor and transitory in nature;
- Flood protection measures will include constructing barriers such as bunds to divert construction stormwater runoff and adjusting site layouts to accommodate natural drainage patterns. Upon completion of works, the ground levels will be reinstated therefore there will be no effects on the 1% AEP floodplain or overland flowpath.

Regardless, Watercare request that the application be publicly notified under section 95A(3) of the RMA. Furthermore, the parties considered to be directly affected by the Project have been identified in Appendix K.

7 Engagement and Consultation

7.1 Consultation with Mana Whenua

Watercare has an established process for engaging with mana whenua on projects and works being undertaken within the Auckland region. The Mana Whenua Kaitiaki Forum was established in 2012 with the aim of encouraging discussion, guidance and sharing views on the management of water and wastewater in the Auckland region. The Kaitiaki Schedule is sent to the 19 tribal authorities across the Auckland region and provides details of the planned work programme. These are held monthly, and representatives are invited to express interest in projects if they wish to do so. The mana whenua groups have the opportunity to join the project team or make comments on the project. This helps Watercare consider the cultural, environmental, social and economic impact of projects.

The Project was introduced on Watercare's Kaitiaki Managers Projects List in September 2023.

Six Mana Whenua entities have registered their interests and sought further information on the Project, being:

- Te Rūnanga o Ngāti Whātua
- Te Ākitai Waiohua
- Ngāti Maru
- Ngāti Te Ata
- Ngāti Whanaunga
- Te Kawerau ā Maki

Information regarding the proposed works was emailed to the mana whenua groups listed above, following their expression of interest.

In addition to inclusion on the Kaitiaki Managers Project List, engagement to date has involved a project presentation and site visit with kaitiaki representatives from Te Ākitai Waiohua in June 2024. During this engagement, particular interest was expressed in the proposed works at Arch Hill Scenic Reserve, a site for which Te Ākitai Waiohua holds statutory acknowledgment with the Crown. Further details regarding the geotechnical investigations and the extent of the proposed construction support area within the reserve were requested at the site meeting. The proposed construction layout was provided on 29 October 2024. Specific feedback has yet to be received.

No further expressions of interest have been received at the time of lodging the resource consent.

Consultation with Mana Whenua groups regarding the project is ongoing. Should any interested mana whenua groups which to receive updates or get involved through any phase of the project there is the opportunity for them to do so as part of these forums through the lifecycle of the project.

7.2 Consultation with Kainga Ora

The Project was introduced to Kāinga Ora during a meeting held in May 2024, where tunnelling works beneath Kāinga Ora-owned properties at 744 Great North Road were discussed. Kāinga Ora did not raise any specific concerns regarding the proposed tunnelling, given the depth of the works. They expressed interest in accessing geotechnical investigation data from the area to support future development planning for the site.

In addition, Watercare has approached Kāinga Ora regarding the potential purchase of the property at 52 Kingsland Street. Kāinga Ora has expressed general agreement with the proposed transaction and is progressing with relocation planning.

7.3 Consultation with Requiring Authorities

7.3.1 New Zealand Transport Agency Waka Kotahi

Consultation with NZTA commenced in June 2024 to support geotechnical investigations for Watercare's proposed pipeline crossing the motorway corridor. Engagement intensified from June 2025 as the Project's concept design was established and technical assessments progressed to support the resource consent application. Affected party approval has been successfully obtained for the purposes of the consent, while Section 176 approval will be sought at the detailed design stage, closer to construction. Ongoing discussions aim to ensure alignment with NZTA's Te Ara Hauāuru – Northwest Busway Project and to finalise arrangements for temporary construction access via the State Highway network.

7.3.2 City Rail Link

Watercare has consulted CRL on the Project to address any potential conflicts where Watercare pipeline and the East Street construction shaft could interface with the CRL project.

Both parties are actively engaging to resolve these issues, with ongoing meetings planned to clarify positions and ensure alignment on infrastructure planning.

7.4 Consultation with Auckland Council

7.4.1 Auckland Transport

Consultation with AT commenced in April 2025, initially involving discussions with the Design Standards team given the Project works proposed beneath/within the Northwestern Cycleway. AT has indicated in-principal support for the works within the road corridor, acknowledging that the project will proceed through the resource consenting process, in which AT will be a participating party.

Further engagement is planned with the AT Corridor Access team once a construction contractor is appointed, to develop detailed traffic management plans.

7.4.2 Healthy Waters

Watercare has been actively engaging with the Healthy Waters department since the Project's early stages to ensure alignment with stormwater separation initiatives in the area that are taking place as part of the Council's broader water quality improvement programme.

Watercare will continue to work closely with Healthy Waters throughout the Project's delivery ensuring integration of programmes and the effective implementation of shared objectives.

7.4.3 Community Facilities / Parks

Applications to utilise public reserve to support the proposed tunnelling construction works were submitted to the Land Advisory department in early July 2025 for landowner approval.

The Project will also affect some trees on the road and public open space, as outlined in Section 4.3.6 above. The Project Arborist has been approaching the Council's Urban Forest Team for tree asset owner approval in parallel with the resource consenting process.

Ongoing consultation will continue to ensure that all necessary approvals are secured and that the Project aligns with Council's open space and urban tree management objectives.

7.5 Consultation with Residents and Local Community

Watercare has undertaken community engagement to inform local residents in the development of the Project. A public community session was held on 22 August 2024 at the Western Springs Community Hall, focusing on the Project's alignment and providing an opportunity for early feedback. A follow-up open day was held on 11 August 2025, where further details were shared regarding construction methodology, duration and excavation activities. These sessions have supported ongoing dialogue with the community and will continue to inform the Project's planning and delivery.

8 Notification Assessment

Section 95A to 95F of the RMA sets out a stepped process for determining whether an application for resource consent should be publicly or limited notified.

8.1 Public Notification

Under section 95A of the RMA, Council must determine whether the resource consent application must be publicly notified. Step 1 requires mandatory public notification in certain circumstances. This includes whether the applicant has requested that the application be publicly notified. Watercare is requesting this Project proceed on a publicly notified basis.

9 Statutory Consideration

The following assessment is provided in accordance with the relevant sections under the Resource Management Act (RMA) applicable to the Project.

9.1 Section 104

9.1.1 Section 104(1)(a)

This section of the RMA requires that regard is given to any actual and potential effects on the environment of allowing the activity.

An assessment of the actual and potential environmental effects on the environment as a result of implementing the proposed works is included in Section 5 of this report. Overall, it was determined that any adverse effects would be no more than minor.

9.1.2 Section 104(1)(b)(i)

This section of the RMA requires that regard is given to any relevant provisions of a national environmental standard (NES).

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS) applies to activities that disturb the soil if the relevant piece of land is, or has previously been, a HAIL site (recorded on the Hazardous Activities and Industries List – Ministry for the Environment).

The National Environmental Standard for Freshwater (NES-F) regulate activities that pose risks to the health of freshwater and freshwater ecosystems. Anyone carrying out these activities will need to comply with the standards. The regulations came into effect on 3 September 2020, and the amendment regulations came into effect on 5 January 2023.

Comment

The proposed works have been considered under the NES-CS and NES-F in Sections 5.2 and 5.3 above. As detailed in Section 6, the proposed works will have limited effects in relation to the disturbance of contaminated material. Consequently, resource consent can be granted under the NES-CS subject to the imposition of conditions relating to the proposed CLMP.

No other NES is considered relevant to this proposal.

9.1.3 Section 104(1)(b)(ii) – Other regulations

This section of the RMA requires that regard is given to any relevant provisions of any other regulations.

Comment

The Health Act 1956 (Health Act) is considered relevant ‘other regulation’. This focuses on ensuring adequate sanitary works in communities to manage health risks from sewage. As the Project will result in increasing wastewater capacity in the area and reducing untreated wastewater overflows, the Project is considered consistent with the purpose of the Health Act.

9.1.4 Section 104(1)(b)(iii) - National Policy Statements

This section of the RMA requires that regard is given to any relevant provisions of a National Policy Statement (NPS).

Comment

The NPS for Urban Development 2020 (NPS-UD) aims to ensure New Zealand's towns and cities are well-functioning. This Project will ensure that wastewater infrastructure is provided to a suitable standard and can allow the development of well-functioning urban environments.

Auckland's inner suburbs are projected to experience significant population growth as more intensive residential development occurs, including development enabled by PC78. The Project is necessary to realise this planned growth and ensure the provision of wastewater services,

Furthermore, the Project, as part of Watercare's wider wastewater infrastructure investment, will help improve the water quality of local waterways and the Waitemata Harbour. These waterways and local beaches form part of Auckland's open space network, whose importance as recreational spaces will only increase as the urban population grows. The Project's improvements to those spaces' water quality will increase their utility for Aucklanders further supporting the urban functioning of the Project area.

The Hauraki Gulf Marine Park Act 2000 aims to integrate the management of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments, while also recognising the cultural and historic relationships of tangata whenua.

The Project is consistent with the Hauraki Gulf Marine Park Act 2000 as it will reduce wet weather overflows, thereby aligning with the Act's purpose of protecting the ecological health of the Gulf, improving water quality, and supporting sustainable management of catchment areas. By preventing untreated discharge of wastewater during storms, the Project contributes to the Act's goals of restoring and enhancing the environmental integrity of the Gulf and its surrounding ecosystems.

9.1.5 Section 104(1)(b)(iv) - New Zealand Coastal Policy Statement

This section of the RMA requires that regard is given to any relevant provisions of a New Zealand Coastal Policy Statement (NZCPS).

Comment

While the Project is not occurring within the coastal marine area or its landward margins, appropriate consideration of its potential downstream effects has occurred. In particular, the Project's construction will be undertaken in a manner where discharges and earthworks are subject to accepted measures, such as the proposed CLMP.

Furthermore, a key objective of the Project is to improve the water quality of the Waitematā Harbour. The proposed works will aid in reducing wet weather overflows into the coastal environment, thereby supporting the restoration of coastal environmental values.

9.1.6 Section 104(1)(b)(v) - Regional Policy Statement

Section 104(1)(b)(v) of the RMA requires that regard is given to any relevant provisions of a regional policy statement (RPS) or proposed RPS.

The relevant provisions of the AUP(OP) RPS are provided in Table 11.

Table 11. Auckland Unitary Plan Regional Policy Statement Provisions

Reference	Objective/Policy	Is the Project Consistent	Comment
B2. Urban growth and form	Objectives B2.2.1 (1) A well-functioning urban environment with a quality compact urban form that enables all of the following: (a) a higher-quality urban environment (b) greater productivity and economic growth (c) better use of existing infrastructure and efficient provision of new infrastructure (d) good accessibility for all people, including by improved and more efficient public or active transport (e) greater social and cultural vitality (f) better maintenance of rural character and rural productivity (g) reduced adverse environmental effects; and (h) improved resilience to the effects of climate change (2) Urban growth is primarily accommodated within the urban area as of 2016 (3) Sufficient development capacity and land supply is provided to accommodate residential, commercial, industrial growth and social facilities to support growth	Yes	The Project addresses wastewater infrastructure constraints and enables higher residential intensification in Central Auckland suburbs such as Kingsland, Newton, and Western Springs. These are areas identified for growth due to their proximity to urban core and public transport networks (e.g. CRL). By increasing wastewater network capacity and reducing wet weather overflows, the Project removes infrastructure constraints that would otherwise limit urban intensification. This directly supports the efficient use of existing infrastructure and the provision of new infrastructure in a way that accommodates population growth, enhances public health, and reduces environmental impacts. The use of trenchless construction methods further aligns with the with Chapter B2 by minimising disruption, protecting amenity values, and improving resilience to climate change. Overall, the project allows for integrated infrastructure and land use planning, contributing to a more productive, accessible and sustainable urban environment.

Reference	Objective/Policy	Is the Project Consistent	Comment
	(4) Urbanisation is contained within the Rural Urban Boundary, towns, and rural and coastal towns and villages Policies B2.2.1 (4) Promote urban growth and intensification within the urban area as at 2016 to enable urban growth and intensification within the Rural Urban Boundary, towns, and rural and coastal towns and villages, in a way that contributes to a well-functioning urban environment and avoid urbanisation outside these areas (5) Enable higher residential intensification: (a) in and around centres (b) along identified corridors; and (c) close to public transport, social facilities (including open space) and employment opportunities		
B3. Infrastructure, transport and energy	Objectives B3.2.1 (1) Infrastructure is resilient, efficient and effective (2) The benefits of infrastructure are recognised, including: (d) providing for public health, safety and the well-being of people and communities (e) protecting the quality of the natural environment	Yes	The Project will result in increasing capacity in the wastewater network reducing wet weather overflows and further minimising public health and safety risks. The quality of the natural environment is also protected given that there will be less wet weather overflows discharging into the coastal environment, limiting further impacts on coastal biodiversity values.

Reference	Objective/Policy	Is the Project Consistent	Comment
	(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 (5) Infrastructure planning and land use planning are integrated to service growth efficiently (8) The adverse effects of infrastructure are avoided, remedied or mitigated <u>Policies B3.2.2</u> (1) Enable the efficient development, operation, maintenance and upgrading of infrastructure (2) Recognise the value of investment in existing infrastructure		Additionally, the utilisation of trenchless methods for construction represents an efficient way of constructing a Project of this scale within a complex urban environment. Given the that the Project area is within a built-up environment and will need to go underneath State Highway 16, trenchless methods are the most efficient construction approach as they will minimise disturbance and reinstatement works to shaft locations. Effects are generally limited to the shaft sites, rather that the entire 3.2km alignment. Trenchless methods also result in fewer impacts on vegetation and related amenity values given that work depths are below the rootzone of these trees. The Project represents an integrated approach to infrastructure planning and land use planning given the proposed mitigation and management measures to control construction activities. The Project also enables the urban intensification signalled by the RPS. There is a functional need to locate the wastewater pipeline along this alignment given the gravity feed nature of wastewater infrastructure, the need to provide increased wastewater capacity in the Motions Creek catchment and the presence of conflicting infrastructure.

Reference	Objective/Policy	Is the Project Consistent	Comment
	(3) 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 (6) Enable the development, operation, maintenance and upgrading of infrastructure 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 ensuring that the adverse effects on the values of such areas are avoided where practicable or otherwise remedied or mitigated (8) Avoid, remedy or mitigate the adverse effects from the construction, operation, maintenance or repair of infrastructure (9) Ensure where there is a functional or operational need for infrastructure to locate in areas subject to natural hazards:		

Reference	Objective/Policy	Is the Project Consistent	Comment
	(a) that buildings accommodating people are located and/or designed to minimise risk from natural hazards; and (b) that risk that cannot be avoided by location or design should be mitigated to the extent practicable		
B5. Historic Heritage and Special Character	Objectives B5.2.1 (1) Significant historic heritage places are identified and protected from inappropriate subdivision, use and development (13) Significant historic heritage places are used appropriately, and their protection, management and conservation are encouraged, including retention, maintenance and adaptation Policies B5.2.2 (6) Avoid significant adverse effects on the primary features of significant historic heritage places which have outstanding significance well beyond their immediate environs including: (a) the total or substantial demolition or destruction of any of the primary features of such places (7) Avoid where practicable significant adverse effects on significant historic heritage places. Where significant	Yes	The Project aligns with Chapter B5 of the AUP(OP), particularly at the Cooper Street Historic Heritage Area, where several Victorian-era buildings are located near SH 13 and 14, where specific ground settlement and vibration measures to avoid or mitigate adverse effects on heritage values have been incorporated. Construction activities near Cooper Street are expected to generate vibration levels of 3–4 mm/s peak particle velocity (PPV), which exceeds the 3 mm/s threshold for sensitive heritage structures as noted above. However, a suite of mitigation measures is proposed to manage these effects, including the use of low-vibration construction techniques (e.g. the use of concrete saws or bore piling for the installation of trench shields to support shafts). Real time vibration monitoring, and pre- and post-construction condition surveys of affected buildings will also be undertaken. These measures are detailed in

Reference	Objective/Policy	Is the Project Consistent	Comment
	adverse effects cannot be avoided, they should be remedied or mitigated so that they no longer constitute a significant adverse effect (8) Encourage new development to have regard to the protection and conservation of the historic heritage values of any adjacent significant historic heritage places		the CNVMP, which ensures that best practices are followed to protect the heritage values of the area. Importantly, the Project also avoids direct physical alteration or demolition of heritage buildings, and all works are confined to the road corridor or underground. This approach, combined with the proposed mitigation strategies, demonstrates will assist in preserving the integrity and character of the Cooper Street Historic Heritage Area.
B7. Natural Resources	<u>Objectives B7.4.1</u> (4) The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced <u>Policies B7.4.2</u> (10) Manage the adverse effects of wastewater discharges to freshwater and coastal water by all of the following: (a) ensuring that new development is supported by wastewater infrastructure with sufficient capacity to serve the development; (b) progressively reducing existing network overflows and associated adverse effects by all of the following:	Yes	The Project directly supports these objectives and policies by constructing a new 3.2km collector sewer that will significantly reduce wet weather overflows from the existing network. This will address one of the primary sources of untreated wastewater entering local streams and, ultimately, the Waitematā Harbour. By diverting wastewater flows to the Central Interceptor, the Project ensures that discharges are treated appropriately at the Māngere Wastewater Treatment Plant, thereby improving water quality and reducing public health risks. The Project prioritises sensitive receiving environments, adopts trenchless construction methods to minimise land disturbance, and includes engineered overflow points designed to reduce frequency and volume of discharges. These measures demonstrate

Reference	Objective/Policy	Is the Project Consistent	Comment
	(i) making receiving environments that are sensitive to the adverse effects of wastewater discharges a priority (ii) adopting the best practicable option for preventing or minimising the adverse effects of discharges from wastewater networks including works to reduce overflow frequencies and volumes; (iii) ensuring plans are in place for the effective operation and maintenance of the wastewater network and to minimise dry weather overflow discharges (iv) ensuring processes are in place to mitigate the adverse effects of overflows on public health and safety and the environment where the overflows occur (c) adopting the best practicable option for minimising the adverse effects of discharges from wastewater treatment plants; and (d) ensuring on-site wastewater systems avoid significant adverse effects on freshwater and coastal water		a commitment to long-term environmental improvements and sustainable infrastructure planning.
B10. Environmental Risk	<u>Objective B10.2.1</u> (1) Communities are more resilient to natural hazards and the effects of climate change	Yes	In terms of managing flood risks at certain shaft locations during the construction phase, barriers such as bunds will be constructed around the shaft to extend above the expected flood level. These measures are intended to

Reference	Objective/Policy	Is the Project Consistent	Comment
	(2) The risks to people, property, infrastructure and the environment from natural hazards are not increased in existing developed areas (3) The functions of natural systems, including floodplains, are protected from inappropriate subdivision, use and development (4) The conveyance function of overland flow paths is maintained <u>Policies B10.2.2</u> (7) Avoid or mitigate the effects of activities in areas subject to natural hazards, such as earthworks, changes to natural and built drainage systems, vegetation clearance and new or modified structures, so that the risks of natural hazards are not increased (12) Minimise the risks from natural hazards to new infrastructure which functions as a lifeline utility by: (a) assessing the risks from a range of natural hazard events including sea level rise, and low probability but high potential impact events such as tsunami, earthquake and volcanic eruptions (b) utilising design, location and network diversification to minimise the adverse effects on infrastructure and		prevent inundation of the shafts and tunnels during heavy rainfall events, thereby managing overland flow and protecting the integrity of the construction works area. Once construction is completed, the ground levels will be reinstated therefore flood risks and overland flowpaths will not be altered post construction. In addition to the above, the Project meets Objectives B10.4.1 and Policies B10.4.2, which aim to protect human health and environmental quality through the identification, management, and remediation of contaminated land. As stated above, the Project area includes several sites identified as having supported contaminating land use activities in the past, including closed landfills and areas with HAIL activities occurring adjacent to the works area. These sites were identified through a PSI and DSI, aligning with Policy B10.4.2(1)(a). The DSI confirmed the presence of contaminants such as lead, arsenic, and PAHs, some of which exceed Auckland background soil concentration limits. In accordance with Policy B10.4.2(3), the project includes a comprehensive CLMP to manage and remediate contaminated land where necessary. This includes safe excavation, handling, and disposal of contaminated soil,

Reference	Objective/Policy	Is the Project Consistent	Comment
	to minimise the adverse effects on the community from the failure of that infrastructure Objective B10.4.1 (1) Human health and the quality of air, land and water resources are protected by the identification, management and remediation of land that is contaminated Policies B10.4.2 (1) Identify land that is or may be contaminated based on: (a) sites known to have supported contaminating land use activities in the past; (b) sites with a significant potential risk to human health; or (c) sites having significant adverse effects on the environment (2) Land which may be contaminated due to having supported contaminating land use activities in the past but has not been investigated will be identified as being potentially contaminated (3) Manage or remediate land that is contaminated where: (a) the level of contamination renders the land unsuitable for its existing or proposed use; or		groundwater monitoring, and adherence to best practice protocols such as the use of sealed containers disposing contaminated soils at licensed disposal facilities. The CLMP also includes contingency measures for unexpected contamination discoveries and ensures that all works are carried out in a manner that protects human health and prevents adverse environmental effects. By proactively identifying potentially contaminated land, undertaking detailed investigations, and implementing robust management and remediation measures, the Project is consistent with Chapter B10 of the AUP(OP).

Reference	Objective/Policy	Is the Project Consistent	Comment
	(b) the discharge of contaminants from the land is generating or is likely to generate significant adverse effects on the environment; or (c) development or subdivision of land is proposed.		

9.1.7 Section 104(1)(b)(vi) - AUP(OP)

This section of the RMA requires that regard is given to any relevant provisions of a plan or proposed plan. The following provides an assessment of the relevant objectives, policies in the AUP(OP).

The relevant provisions of the AUP(OP) are summarised in Table 12.

Table 12. Relevant AUP(OP) Provisions

Reference	Objective/Policy	Is the Project Consistent	Comment
E26. Infrastructure	Objectives E26.2.1 (1) The benefits of infrastructure are recognised (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 (5) The resilience of infrastructure is improved, and continuity of service is enabled (9) The adverse effects of infrastructure are avoided, remedied or mitigated Policies E26.2.2 (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 (f) protecting and enhancing the environment	Yes	The Project delivers social, environmental, and public health benefits by improving wastewater infrastructure in the central suburbs of Auckland, namely Newton, Kingsland and Western Springs. It will reduce wet weather overflows and untreated discharges into local waterways, thereby enhancing water quality and protecting public health. The Project also reflects the value of infrastructure investment by integrating with the Central Interceptor and forming part of the WIWQIP. This is a critical component of Auckland's long-term wastewater strategy and will support future growth and intensification in areas identified for urban intensification. The Project includes a suite of mitigation measures that will be written into the Project's management plans. This includes a CNVMP, a CLMP and a GSMCP. These plans address potential impacts on health, amenity, and the environment, including noise, vibration, dust, settlement and discharges during construction. The Project also carefully considers the effects of infrastructure through the following:

Reference	Objective/Policy	Is the Project Consistent	Comment
	(4) 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 (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		▪ Considers the modified urban environment in which it is located; ▪ The temporary nature of construction effects which is effectively 3 months at each shaft location; ▪ The critical need for the infrastructure to address existing network constraints and environmental degradation; and ▪ The long-term benefits to Auckland communities through improved wastewater management and environmental outcomes. Overall, the Project balances the need for essential wastewater services with the protection of community wellbeing and the environment.

Reference	Objective/Policy	Is the Project Consistent	Comment
E1. Water Quality and Integrated Management	Objectives E1.2 (2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua (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 Policies E1.3 (19) 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	Yes	The Project will result in increasing wastewater capacity in the area and reducing wet weather overflows. By constructing the new 3.2km collector sewer that connects to the Central Interceptor, the Project will significantly reduce the frequency and volume of wet weather overflows, thereby aiding the restoration of local waterways' mauri and enabling their cultural and traditional use by mana whenua. The Project is designed to industry standards and sized to accommodate the expected flows from the area. The project also includes 16 engineered overflow points (EOPs) that are strategically located and designed to minimise public health risks and ecological harm. The best practicable option to reduce wet weather overflows has been selected. The Project prioritises sensitive receiving environments, including areas used for recreation. The integration with the Central Interceptor ensures that overflows are conveyed to the Māngere Wastewater Treatment Plant for treatment, rather than being discharged into local waterways. Overall, the Project demonstrates a comprehensive and proactive approach to improving water quality, protecting public health, and upholding the cultural values

Reference	Objective/Policy	Is the Project Consistent	Comment
	(d) designing and locating overflow points to minimise nuisance, damage, public health risk and adverse ecological effects (21) Progressively minimise the adverse effects of wet weather overflows from wastewater networks by: (a) adopting the best practicable option to reduce wet weather overflows to an average of no more than two events per discharge location per year in areas serviced by a separated wastewater network with priority for: (i) receiving environments that are used for public and contact recreation activities; (ii) receiving environments that are sensitive to the adverse effects of wastewater overflows; (iii) areas significant to Mana Whenua; or (iv) adopting the best practicable option to reduce wet weather overflows from the combined sewer network (b) requiring the development and implementation of a network operations plan; as part of any network discharge consent; and (c) adopting wastewater overflow response procedures		associated with freshwater, in accordance with the objectives and policies of Chapter E1.

Reference	Objective/Policy	Is the Project Consistent	Comment
E2. Water Quantity, Allocation and Use	Objectives E2.2 (2) Water resources are managed within limits to meet current and future water needs for social, cultural and economic purposes (5) Mana Whenua values including the mauri of water, are acknowledged in the allocation and use of water Policies E2.3 (23) Require proposals to divert groundwater, in addition to the matters addressed in Policy E2.3(6) and (7) above, to ensure that: (a) 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 (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	Yes	The Project involves shaft excavations where groundwater is encountered at depths ranging from 0.5m to more than 12m bgl. Dewatering will be undertaken to create a safe working environment while minimising drawdown effects. These systems include the use of secant pile shafts and other support structures that help prevent groundwater ingress into the shafts and reduce the risk of settlement. A comprehensive monitoring programme is also proposed, including the installation of standpipe piezometers to monitor groundwater levels and survey markers to track ground and building movement. These measures form part of the (GSMCP), which includes defined alert and alarm thresholds and contingency responses. The Project avoids adverse effects on scheduled heritage places and sites of significance to Mana Whenua, as shaft locations and groundwater dewatering minimize any effects on these features. To ensure that Project does not cause or exacerbate flooding, the project includes flood protection measures such as perimeter barriers around shafts and reinstatement of ground levels post-construction.

Reference	Objective/Policy	Is the Project Consistent	Comment
	(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; or (iv) re-injection of water to maintain groundwater pressures		Overall, the project demonstrates a best-practice approach to groundwater management and flood hazards that aligns with the objectives and policies of Chapter E2 by protecting water resources, acknowledging cultural values, and ensuring that any potential adverse effects are appropriately avoided, remedied or mitigated.
E11. Land Disturbance – Regional	Objectives E11.2 (1) Land disturbance is undertaken in a manner that protects the safety of people and avoids, remedies or mitigates adverse effects on the environment. (2) Sediment generation from land disturbance is minimised. (3) Land disturbance is controlled to achieve soil conservation. Policies E11.3 (2) Manage land disturbance to:	Yes	Land disturbance will be primarily restricted to shaft locations and given the trenchless methods being utilised, the amount of soil disturbed and needing to be removed for offsite disposal is reduced. The land disturbance being undertaken has been limited by trenchless methods being used to minimise the amount of land disturbance when compared to an open trench construction methodology. As the land disturbance activities will be restricted to shaft locations, the public will be restricted from these locations and the supporting areas needed for

Reference	Objective/Policy	Is the Project Consistent	Comment
	(a) retain soil and sediment on the land by the use of best practicable options for sediment and erosion control appropriate to the nature and scale of the activity; (b) manage the amount of land being disturbed at any one time, particularly where the soil type, topography and location is likely to result in increased sediment runoff or discharge; (c) avoid, remedy or mitigate adverse effects on accidentally discovered sensitive material; and (d) maintain the cultural and spiritual values of Mana Whenua in terms of land and water quality, preservation of wāhi tapu, and kaimoana gathering (4) Enable land disturbance necessary for a range of activities undertaken to provide for people and communities social, economic and cultural well-being, and their health and safety (5) Design and implement earthworks with recognition of existing environmental site constraints and opportunities, specific engineering requirements, and implementation of integrated water principles		construction. This is to ensure the safety of people. Once construction at the shaft locations (likely to last 3 months at each shaft location) is completed, public access to these locations will be restored. Construction traffic associated with earthworks will also be subject to control measures, including a CTMP. Watercare will continue to work with AT and NZTA to ensure the safe and efficient function of the surrounding transport networks occurs during construction. Communication will be undertaken with local residents and businesses to notify them of traffic management measures, such as temporary loss of parking. These measures are typically employed on large infrastructure projects and are suitable for the current proposal. Erosion and sediment control measures consistent with Auckland Council's GD05 document will be implemented at each shaft location to prevent the discharge of sediment. Additionally, the works will be staged in a manner where at any given time 4 shaft locations will be operational. Standard E26.6.5.1 around accidental discovery protocols will be adhered to during the construction phase.

Reference	Objective/Policy	Is the Project Consistent	Comment
E12. Land Disturbance – District	Objectives E12.2 (1) Land disturbance is undertaken in a manner that protects the safety of people and avoids, remedies or mitigates adverse effects on the environment Policies E12.3 (2) Manage the amount of land being disturbed at any one time, to: (a) avoid, remedy or mitigate adverse construction noise, vibration, odour, dust, lighting and traffic effects; (b) avoid, remedy or mitigate adverse effects on accidentally discovered sensitive material; and (c) maintain the cultural and spiritual values of Mana Whenua in terms of land and water quality, preservation of wāhi tapu, and kaimoana gathering.	Yes	In addition to the above, the works will be undertaken in accordance with a CNVMP that will guide the management of noise and vibration generating activities. This will include installing acoustic screening around shaft sites and noise enclosures to manage construction noise that occupants in apartments will likely experience. The CNVMP will also outline measures such as staff inductions to advise them of appropriate conduct, suitable construction methods at certain sites and consultation requirements to advise affected occupants of upcoming works. As mentioned above, the ground levels will be reinstated post construction, therefore overland flowpaths and flooding risks associated with the 1% AEP floodplain will not be exacerbated. In terms of managing construction phase stormwater effects, the project includes flood protection measures such as perimeter barriers around shafts that will protrude above the flood levels to prevent floodwater ingress into the construction work area. As such, the Project is consistent with the objectives and policies of Chapter E36.

Reference	Objective/Policy	Is the Project Consistent	Comment
E16. Trees in Open Space Zones	Objectives E16.2 (1) Trees in open space zones that contribute to cultural, amenity, landscape and ecological values are protected (2) There is an increase in the quality and extent of tree cover in open space zones, particularly within areas identified for intensified living Policy E16.3 (2) Manage trees within open space zones to protect their cultural, amenity, landscape and ecological values, while acknowledging that multiple uses occur in open space areas (3) Encourage the use of indigenous trees and vegetation for planting within open space zones, where appropriate, to recognise and reflect cultural, amenity, landscape and ecological values	Yes	While the Project necessitates the removal of 32 individual trees and approximately a total loss of 1,512m^2 of canopy cover from densely vegetated areas within the Project area, Watercare has sought to minimise the overall quantum of vegetation clearance. The trees identified for removal are a mix of mature native and exotic species, many of which are in fair to good health. To mitigate these effects, the Project proposes the replacement planting of 88 trees, ensuring that the overall canopy cover is restored and potentially enhanced. This replanting will occur within the Albert–Eden and Waitematā Local Board areas and will prioritise the use of indigenous species where appropriate, consistent with the policy direction in Chapter E16 and E17. In addition to replanting, the Project includes well established arboricultural management practices to protect remaining trees. Construction activities within the protected root zones of trees will be supervised by a qualified arborist, and best practice methods such as temporary fencing, ground protection, and pre-start meetings will be implemented to minimise damage. These measures reflect a commitment to managing trees in a way that acknowledges their multiple values and the
E17. Trees in Roads	Objective E17.2 (1) Trees in roads that contribute to cultural, amenity, landscape and ecological values are protected (2) There is an increase in the quality and extent of tree cover in roads, particularly within areas identified for intensified living	Yes	

Reference	Objective/Policy	Is the Project Consistent	Comment
	Policy E17.3 (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 (4) Encourage the use of indigenous trees and vegetation for planting within roads, where appropriate, to recognise and reflect cultural, amenity, landscape and ecological values		multifunctional nature of open space areas and road reserves consistent with the policy direction of Chapters E16 and E17. This includes the amenity and visual screening that existing vegetation provides throughout the Project area. Overall, the Project demonstrates a balanced approach that recognises the need for essential infrastructure while actively mitigating impacts on urban tree cover and contributing to the long-term enhancement of green space in intensified urban areas.
E25. Noise and Vibration	Objective E25.2 (1) People are protected from unreasonable levels of noise and vibration (4) Construction activities that cannot meet noise and vibration standards are enabled while controlling duration, frequency and timing to manage adverse effects Policy E25.3 (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	Yes	While it is acknowledged that compliance with Standards in Chapter E25 of the AUP(OP) cannot be achieved, the Project adopts a best-practicable approach to manage these effects through a comprehensive (CNVMP). The CNVMP includes a range of mitigation measures tailored to the sensitivity of the receiving environment and the nature of the works. These include the installation of 2-metre high noise barriers around shaft locations, use of acoustic curtains for upper floors of multi-storey buildings and scheduling high-noise activities like piling during less sensitive times. Real-time monitoring of noise and vibration will be conducted, and mitigation measures will be adjusted in response to exceedances or complaints. Additionally, pre- and post-construction

Reference	Objective/Policy	Is the Project Consistent	Comment
	(10) 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		building condition surveys will be undertaken at the most affected properties in relation to vibration (at Cooper Street, Buchanan Street, Finch Street and Kingsland Avenue), with Watercare committing to fund repairs if damage is attributed to the Project. The Project also considers the practicality of compliance, noting that trenchless methods such as TBMs and pipe jacking will be used to reduce surface disruption and associated noise. TBM operations may run 24/7 but are expected to comply with night-time noise and vibration standards. Where vibration-sensitive heritage buildings are affected, alternative low-vibration construction methods will be employed. Overall, the Project demonstrates a clear approach for minimising noise and vibration at the source, mitigating effects on adjacent sites, and managing the duration and frequency of disruptive activities. This approach aligns with the intent of Chapter E25 of the AUP(OP) to balance infrastructure development with the protection of community wellbeing and amenity.
E30. Contaminated Land	<u>Objective E30.2</u> (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	Yes	A DSI has been completed, identifying contaminants such as heavy metals such as lead and arsenic, PAHs, TPHs, and asbestos. While these contaminants exceed Auckland background soil concentrations, they remain

Reference	Objective/Policy	Is the Project Consistent	Comment
	land to be used for suitable activities now and in the future Policy E30.3 (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 taking into account all of the following (d) the physical constraints of the site and operational practicalities (e) the financial implications of the investigation, remediation, management and monitoring options (f) the use of best practice contaminated land management, including the preparation and consideration of preliminary and detailed site		below thresholds for human health risk. This ensures that discharges from contaminated land are managed in a way that protects both the environment and human health, enabling the land to continue being used for suitable activities. The Project will adhere to the requirements stipulated in the CLMP which has been prepared to guide the handling, storage, and disposal of contaminated soil and groundwater. This includes protocols for soil segregation, dust and odour control, spill response, and worker health and safety. Groundwater contamination will be localised and managed through containment and off-site disposal. The preparation of a DSI and CLMP ensures that best practice contaminated land management is followed and protocols for the discovery of unexpected contaminants are managed. Contaminated soil will be disposed of at licensed facilities where required, while groundwater will be discharged to the wastewater network (where appropriate).

Reference	Objective/Policy	Is the Project Consistent	Comment
	investigations, remedial action plans, site validation reports and site management plans for the identification, monitoring and remediation of contaminated land; and (g) 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		

9.1.8 Section 104(1)(c) - Other matters

This section of the RMA requires that regard is given to any 'other matter' relevant and reasonably necessary to determine the application

Comment

The Auckland Plan 2050 is Auckland's long-term spatial strategy addressing key challenges such as high population growth, shared prosperity, and environmental degradation and is relevant to this Project. The Project supports several of the plan's six key outcomes and is consistent with the Auckland Plan 2050 as follows:

- **Environment and Cultural Heritage**: By using trenchless technology and minimising surface disruption, the Project helps protect natural and cultural assets, aligning with goals to enhance environmental quality and protect cultural heritage.
- **Homes and Places**: The wastewater pipeline supports intensified urban development by improving wastewater infrastructure, which is essential for accommodating Auckland's growing population.
- **Transport and Access**: While not a transport project, the careful planning around construction access, traffic management, and protection of the Northwestern Cycleway reflects the Project's approach to avoid causing impacts to the existing transport network.
- **Belonging and Participation**: Stakeholder engagement and communication consultation will form part of the proposed management plans (CNVMP and CTMP), which support inclusive decision-making and community wellbeing.
- **Māori Identity and Wellbeing**: Section 7 above notes the engagement with mana whenua, aligning with the plan's emphasis on Treaty partnerships and cultural recognition.
- **Opportunity and Prosperity**: By enabling future development and supporting resilient infrastructure, the project contributes to Auckland's economic growth and long-term prosperity.

9.2 Part 2 (Purposes and Principles) – Section 5, 6, 7, and 8

The overriding purpose of the RMA is "to promote the sustainable management of natural and physical resources" (Section 5). The broader principles (Sections 6 to 8) are to inform the achievement of that purpose.

Any consideration of an application under s104(1) of the RMA is subject to Part 2. The Court of Appeal in *R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316 has held that, in considering a resource consent application, the statutory language in section 104 plainly contemplates direct consideration of Part 2 matters. Further, the Court considered that where a plan has been competently prepared under the RMA it may be that in many cases there will be no need for the Council to refer to Part 2. Nonetheless, the following assessment has been provided.

When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to those matters listed under Section 104 of the RMA.

With regards to the application under Section 104, case law has determined that decision makers may now only have recourse to Part 2 of the RMA if it is determined that one of three exceptions apply:

- If any part or the whole of the relevant plan(s) are invalid;
- If the relevant plan(s) did not provide complete coverage of the Part 2 matters; and
- If there is uncertainty of the meaning of provisions as they affect Part 2.

In essence, what this means is that decisions makers only need to 'go back to' Part 2 of the RMA if the relevant planning documents have not fully addressed the Part 2 matters. If a Regional or District Plan has not fully addressed the Part 2 matters, then decision makers can 'go up the tree' to the RPS and to any relevant NPS in relation to any Part 2 matters.

Plans which have to 'give effect' to the higher order statutory planning documents (RPS and NPS's), should have appropriately addressed Part 2 of the RMA.

It is considered that none of the three exceptions listed above apply and that the Part 2 matters have adequately been addressed through the AUP(OP).

Based on the assessment of the proposal being consistent with the AUP(OP) as per Sections 9.1.6 and 9.1.7 above, the proposal is considered to be consistent with Part 2 of the RMA.

10 Conclusion

Watercare is responsible for providing the people of Auckland with safe drinking water and reliable wastewater services while looking after waterways and the environment. The Project involves the construction of a new collector sewer that spans approximately 3.2km from Canada Street in the CBD to Western Springs Park in Western Springs. The collector sewer will have a diameter of 1800mm and will have three branch connections. Two branch connections will go under State Highway 16 connecting the Newton Catchment to Suffolk Reserve and connecting Arch Hill Scenic Reserve and southern parts of Grey Lynn to Nixon Park. The third branch connection will connect Suffolk Reserve to Basque Park. There will also be 16 Engineered Overflow Points (EOPs) and 16 local network connections.

Overall, the proposed works will have positive effects associated with reducing wet weather overflow events and increasing capacity in the wastewater network to service developments in the area. The Project will have no more than minor adverse effects that can be adequately avoided, remedied or mitigated. Overall, with the mitigation measures and adherence to the Project's management plans including a CNVMP, CTMP, CLMP and GSMCP.

An assessment has been made against the relevant objectives and policies of the NZCPS, NPS-UD, AUP(OP) and RMA in accordance with s104. It is concluded that the Project is consistent with the objectives and policies of the AUP(OP) and relevant statutory instruments of the RMA. On this basis, Watercare considers that resource consent can be granted subject to conditions.

Appendix A1. Drawings

Appendix A2. Construction Methodology

Appendix B. Arboricultural Assessment

Appendix C. Construction Noise and Vibration Assessment

Appendix D. Detailed Site Investigation

Appendix E. Contaminated Land Management Plan

Appendix F. Groundwater Settlement Effects Assessment

Appendix G. Construction Traffic Management Assessment

Appendix H. Landscape Effects Assessment

Appendix I. Hazard Risk Assessment

Appendix J. Erosion and Sediment Control Plan

Appendix K. Properties Affected by Construction Noise and Vibration and Groundwater Settlement

Appendix L1. List of Subject Sites

Appendix L2. Records of Title