Watercare Services Limited

ARBORICULTURAL ASSESSMENT

QUEEN STREET WASTEWATER DIVERSION PROGRAMME: PART 3 - PART 6 LINK PROJECT

22 JANUARY 2025

PUBLIC

ARBORICULTURAL ASSESSMENT

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Watercare Services Limited

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REV	DATE	DETAILS
A	22.11.24	DRAFT
B	17.01.24	V3

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TABLE OF CONTENTS

ABBREVIATIONS AND DEFINITIONS

AC	Auckland Council
AEE	Assessment of Environmental Effects
AT	Auckland Transport
AUP	Auckland Unitary Plan (Operative in Part)
NES	National Environmental Standard
NPS	National Policy Statement
The Project	The Part 3 – Part 6 Link Project, being the construction of a wastewater pipeline from the Part 3 Mayoral Shaft to the new Part 3 – Part 6 Marmion shaft at the intersection of Queen Street and Marmion Street.
TMPs	Traffic Management Plans
Watercare	Watercare Services Limited
WSP	WSP New Zealand Limited

EXECUTIVE SUMMARY

This report provides an assessment of the anticipated arboricultural effects as part of the proposed P3 – P6 Alignment works. In summary, the following works affecting public trees are proposed:

Tree Pruning

- Trimming of three protected trees (Tree 2-4) to enable the delivery of materials and operation of machinery and equipment – complying with Standard E26.4.5.1 – a Permitted Activity

Works within the Protected Root Zone

- Works within the protected root zone of three (3) Sweet Gum trees (2 -4) growing within Queen Street carriageway as part of the trenchless installation of the new wastewater pipeline (associated compound works) – complying with Standard E26.4.5.2 – a Permitted Activity

All works can be adequately managed through the implementation of the Tree Protection Methodologies outlined in Section 5.0 of this Report, to ensure the effects on protected trees are less than minor.

1 INTRODUCTION

1.1 OVERVIEW

Watercare Services Limited ('Watercare') is a lifeline utility providing water and wastewater services to a population of 1.7 million people in Auckland and Northern Waikato. Its services are vital for life, keep people safe and help communities to flourish. More specifically, Watercare is the council-controlled organisation of Auckland Council responsible for municipal water supply and wastewater treatment within Auckland, and the provider of bulk water and wastewater services to Pokeno and Tuakau in the Waikato District.

Watercare are proposing to upgrade the existing wastewater network of the upper (southern) catchment of Auckland City Centre. The current network has insufficient capacity to meet the future needs based on increased development in the area. The wider programme of works has been split into separate parts for the purpose of design, consenting and construction; the consenting and construction packages of the Queen Street programme are shown below in Figure 1-1.

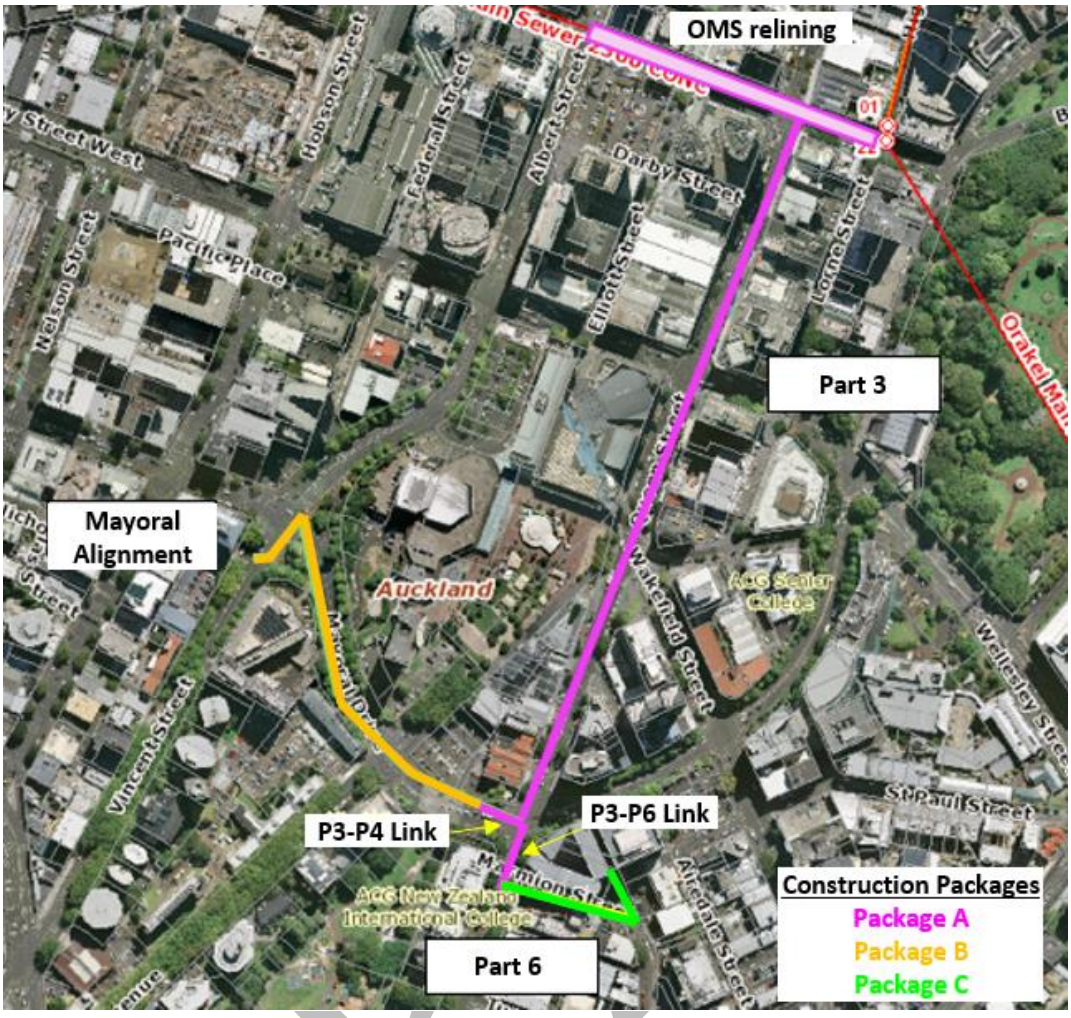

Figure 1-1: Queen Street Wastewater Diversion Programme

The Part 3 – Part 6 Link Project involved the construction of a wastewater pipeline from the Part 3 Mayoral Shaft to a new shaft at the intersection of Queen Street and Marmion Street (known as the 'Marmion Shaft').

1.2 CONSENTING BACKGROUND

Resource consent for two sections of the wider Queen Street Programme have already been approved by Auckland Council, being:

1) Part 3 Alignment/Resource Consent No. BUN60422974:

A 650m-long, 1200mm diameter wastewater pipeline within Queen Street between the intersections of Mayoral Drive and Victoria Street, with connections to the local network at Wellesley Street and the Orakei Main Sewer at Victoria Street. This consent was approved on the 4th of July 2024, and was amended via s127 of the RMA by BUN60422974-A on the 5th of September 2024.

2) Part 3 – Part 4 Connector Tunnel/Resource Consent No. BUN60425924:

A 43m-long, 700mm diameter tunnel between the Mayoral Drive shaft established under Part 3 and a new shaft within the Construction Support Area ('CSA') within 329 Queen Street. The tunnel will initially be utilised to provide services to the micro-TBM for Part 3 construction and will be utilised as a permanent wastewater pipeline once Part 3 construction has been completed. This consent was approved on the 9th of July 2024.

The resource consent application for the following project is currently being prepared and is expected to be lodged with Council in April 2025:

3) Mayoral Drive Alignment (Yet to be lodged)

The Mayoral Drive alignment involves the construction of a new wastewater pipe within or adjacent to the road reserve of Mayoral Drive, between the intersection with Queen Street and Vincent Street. The works include a 375 - 700mm diameter wastewater pipeline between the Part 3-Part 4 Connector Tunnel and a new manhole within Vincent Street.

1.3 PURPOSE OF THIS REPORT

The purpose of this report it to provide an assessment of affected street trees and arboricultural related matters in relation to the Part 3 – Part 6 Link Project.

2 DESCRIPTION OF EXISTING ENVIRONMENT

The following provides a description of the existing environment applicable to the application.

2.1 LOCATION AND PHYSICAL ENVIRONMENT

The Project is located within Auckland City Centre, to the immediate north and south of the intersection of Queen Street and Mayoral Drive. The project alignment extends from the 'Mayoral Shaft', established under the Part 3 consent, to a new shaft opposite the intersection of Queen Street and Marmion Street, as shown below in Figure 2-1.

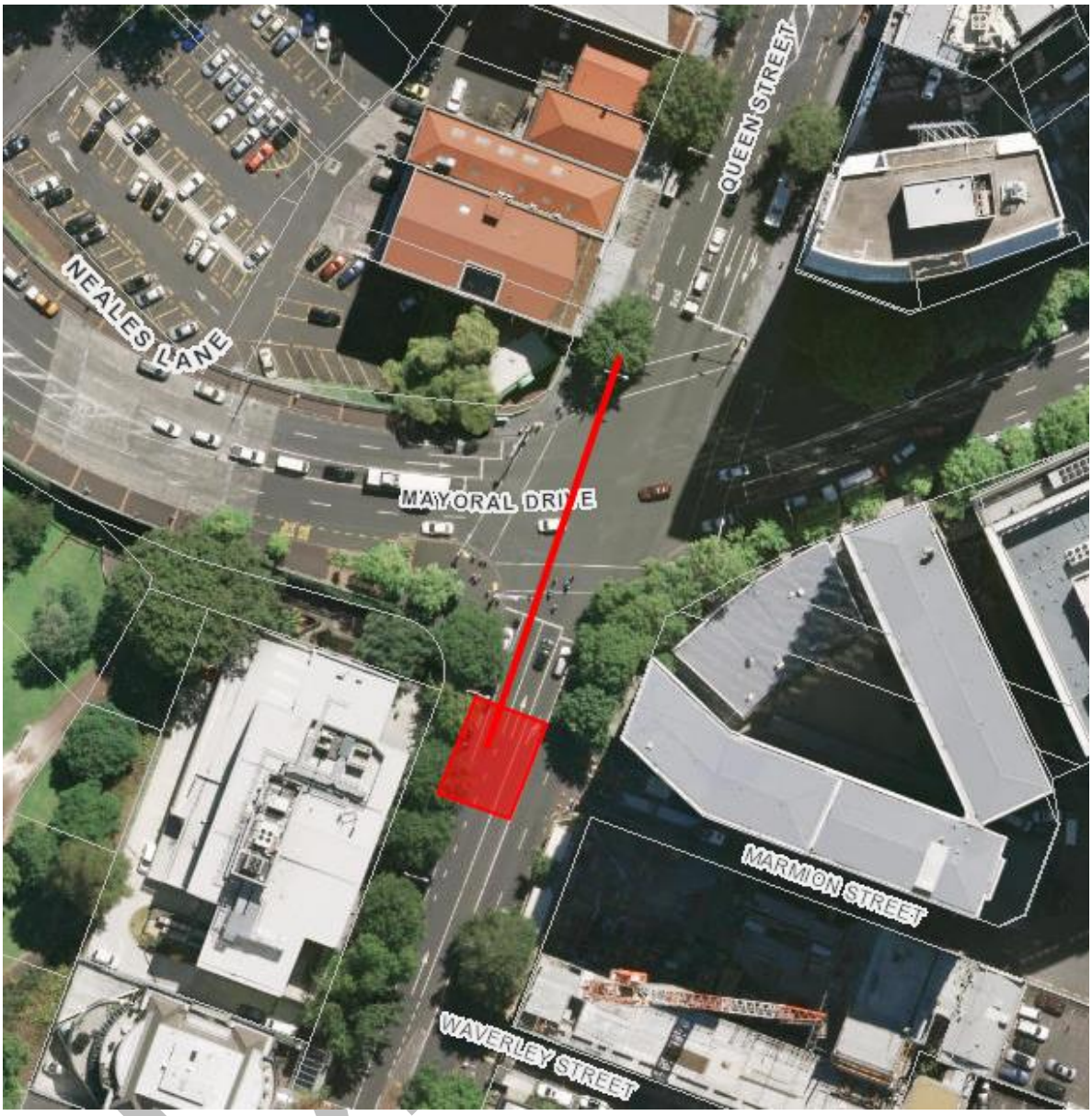

Figure 2-1: Project area

Queen Street is generally two lanes in width (following the pedestrian upgrades undertaken in 2021), with some vehicle access restrictions between Wakefield and Wellesley Street to enable priority for bus movements. Mayoral Drive is an arterial road linking Wellesley Street, Cook Street and Queen Street and is generally five lanes in width with a painted central median. Marmion Street is a one-way laneway-style street that primarily provides access to adjacent residential apartment buildings.

The land use surrounding the project area is typified by medium and high-density development containing apartments, offices, accommodation, education facilities and entertainment, with retail predominantly occupying the ground level of most buildings. The area contains a combination of heritage and special character buildings (such as the Auckland Sunday School Union Building at 323-327 Queen Street) and

modern buildings. The Auckland Civic Precinct is located a short distance to the north-west and contains a range of landmarks including Auckland Town Hall, Aotea Square, Aotea Centre and the former Civic Administration building, which has been recently renovated and converted into apartments.

2.2 AFFECTED STREET TREES

Three (3) mature Sweet Gum (*Liquidambar styraciflua)* trees are growing within the road reserve of Queen Street directly to the east of the proposed Marmion Shaft, with the canopies of these trees overhanging the proposed excavation footprint.

The works within the protected root zone of the three trees will be limited to the existing Queen Street carriageway, with the existing kerb line to remain un-modified. The canopy of the trees has been lifted to at least 4.5m and as such, only minor pruning is currently required to provide adequate overhead clearance for the proposed works.

Figure 2.2 – View of three mature Sweet Gum trees affected by the works (looking south)

Figure 2.3 – View of three mature Sweet Gum trees affected by the works (looking west from Marmion Street)

3 NATURE OF WORK (ACTIVITIES) SUBJECT TO ASSESSMENT

3.1 OVERVIEW

Watercare are proposing a programme of works to upgrade the wastewater network in the upper section of Auckland City Centre to accommodate the substantial and sustained urban growth from residential, municipal and commercial development. This Project relates to the construction of a new wastewater sewer line from the existing Mayoral Shaft to a new shaft opposite the intersection of Queen Street and Marmion Street.

The Project will be constructed using a combination of trenchless pilot bore to construct the wastewater pipeline tunnel, and secant piling to construct the temporary shaft. An overview of the proposed construction activities is shown below as Figure 3-1.

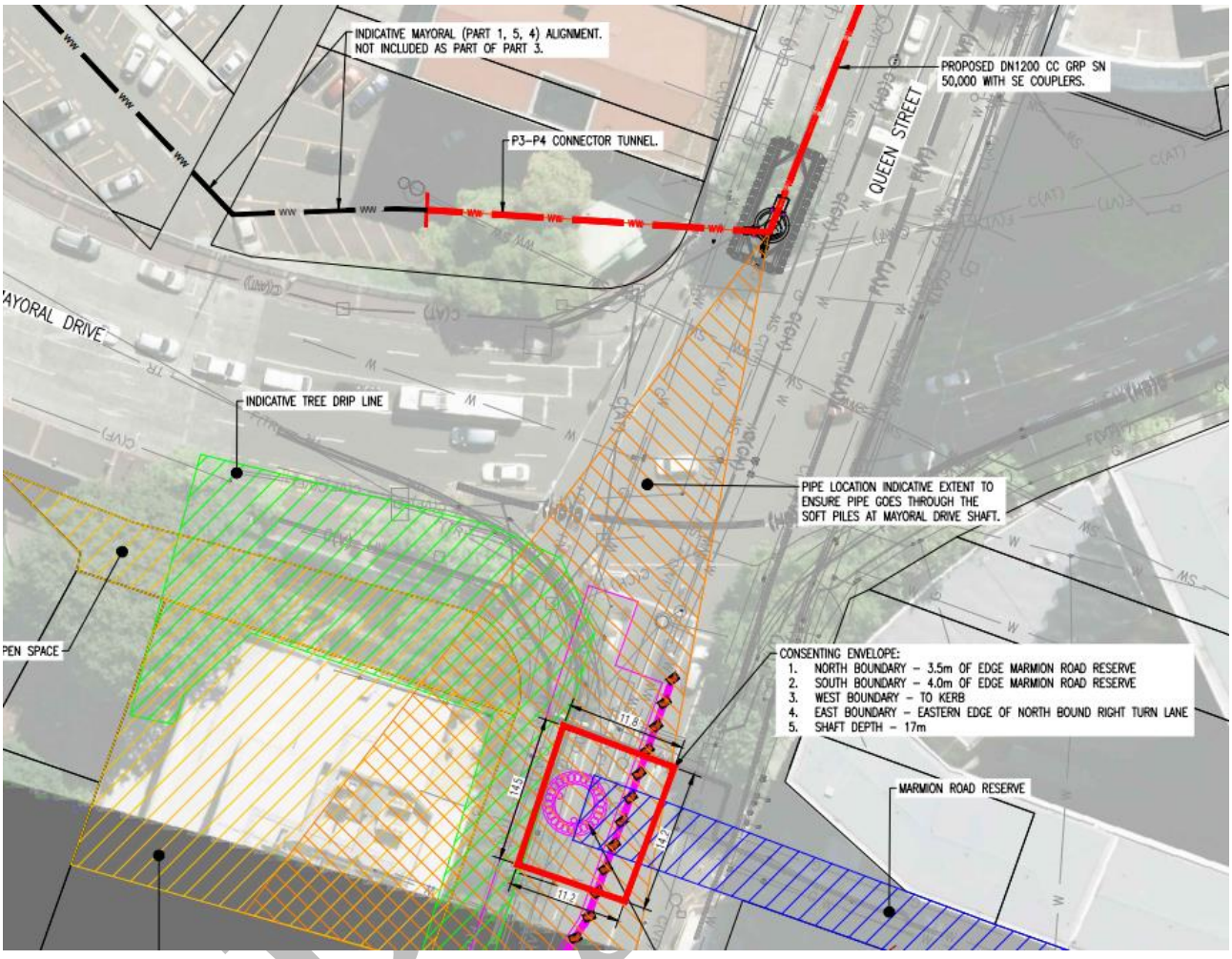

Figure 3-1: Overview of construction works

3.2 CONSTRUCTION HOURS AND DURATION

The anticipated construction hours are noted in Table 3-1 below.

Table 3-1: Construction hours

Shaft Construction	Monday to Saturday – 0700hrs to 1800hrs *Sunday and night work will only be caried out if required by traffic management restrictions or Watercare operational requirements for tie ins/ connections to existing network*
Tunnelling works	Monday to Saturday – 0700hrs to 1900hrs

3.3 TEMPORARY CONSTRUCTION SHAFT

The temporary shaft opposite Marmion Street will be used as a reception pit for the Pilot Guided Boring Machine. The shafts outside diameter will be 6.4m constructed

using 600 - 900mm piles, 200mm in-situ shotcrete lining, 4m internal diameter and will be up to 17m deep.

The shaft will be constructed as follows:

1. A concrete guide wall is excavated and formed at ground level to guide the drill rig
2. Soft piles are drilled in a hit and miss fashion to avoid damaging the adjacent pile while they are curing.
3. The missed soft piles are then constructed.
4. Hard piles are then drilled through the soft piles creating a continuous retaining wall
5. Steps 2 to 4 are repeated until all piles are constructed and there is a continuous retaining wall.

Once the shaft has been excavated to approximately 1m below the invert, a 300-500mm thick concrete plug will be poured to form the base. This plug creates a level working platform while also retaining the groundwater from below. Once the plug has been constructed the dewatering requirements will significantly reduce or stop.

The shaft will be lined using shotcrete in 2m lifts to the depth of the shaft. The shaft lining and secant piles will remain in place and form part of the permanent works.

3.4 TRENCHLESS TUNNELLING WORKS

The proposed wastewater pipeline will be installed using a Pilot Guided Boring Machine. This method drills a smaller diameter pilot bore from the launch pit to the reception pit; a reamer is then connected in reception pit and guided back to the launch pit. A soft pile window will be constructed on the pipe alignment at each shaft to allow the boring machine to breakthrough. A summary of the key steps of the boring machine is as follows:

3.4.1 PILOT BORE

1. Set up the Guidance System in the Launch Pit
2. Place drill rig in launching pit and align rack
3. Place Drill Head on Drill Rack
4. Connect all supporting items including vacuum to carry the slurry
5. Commence pilot bore

3.4.2 REAMER AND PIPE INSTALLATION

1. Install pusher unit at reception pit
2. Attach the reamer to the pilot

3. Place pipe on pusher and install vacuum system through the pipe
4. Start the reamer and push pipe into bore
5. Place next pipe disconnect vacuum system and install through second pipe
6. Repeat steps 3-5 until all the pipes have reached the launch pit

3.5 CONSTRUCTION EQUIPMENT

The following equipment is required to construct the Project:

Table 3-2: Construction equipment required for the Project

Secant shaft construction	Trenchless construction
CFA piling - SR-45 or SR-65	35-90T All Terrain / mobile crane
3-35T excavators	HIAB truck
6-8-wheeler trucks	Power pack container
400kg plate compactor	Tool truck
Concrete pump	Vacuum truck
Concrete trucks	Axis / Pilot bore micro-tunnelling machine
Silenced generator	Bentonite mixing system (if required)
7T vibrating drum construction roller	

3.6 MANHOLE CONSTRUCTION AND ROAD REINSTATEMENT

A manhole will be installed in the shaft and the road surface reinstated upon completion of the shaft and tunnelling construction works.

3.7 EARTHWORKS

The following table provides an estimate for the earthworks requirements for the Project:

Table 3-3: Earthworks summary for the Project

Activity	Area	Volume
Crane & piling platform	216m^2	152m^3
Shaft construction	32m^2	544m^3

Trenchless (pilot bore)	46m^2	25m^3
Total	294m^2	721m^3

The spoil material will be drilled out using an SR-45 or SR-65 and loaded using a 20T excavator into 6-8-wheeler trucks to be carted offsite over a period of 1-2 weeks.

3.8 NETWORK UTILITY RELOCATIONS

The existing network utilities within the carriageway of Queen Street will need to be relocated to enable construction of the Marmion Shaft. As a flexible 'consenting envelope' is being sought, the exact utilities to be diverted are yet to be confirmed, but may include potable water, electricity, wastewater, stormwater and communications.

Open-cut progressive trenching will be utilised to relocate any utilities that are required to be relocated. The trenches are expected to typically be up to 1m in width and approximately 1.5m deep and will be constructed in 6 to 10m-long sections. Once the new ducts and pipes are installed, the trenches shall be backfilled with the footpath and / or road reinstated.

The following high-level methodology will apply to network utility relocations:

Table 3-4: High-level network utility relocation methodology

Stage	Construction Activities	Equipment and Materials
Site set out	Identify and mark-out position of trenches along the affected roadway and footpath areas.	Truck, handheld service locator, spray paint
Pavement removal	Saw cut and remove existing pavement.	Concrete saw, handheld concrete breaker (only where necessary), excavator, truck.
Trench construction	Expose, identify, and support existing utilities up to a 1.5m depth. Trenches will be constructed to a width of approximately 1m. All spoil will be loaded onto trucks and disposed of off-site.	Hydro vac, normal excavator, truck, trench shields, air actuated compaction equipment, compressor and mobile generator.
Utilities installation	Once trench is at required depth, bedding will be placed in the trench, with the new utility assets installed.	Trench shield, truck, excavator, plate compactor
Reinstatement	Once installed, the trench will be backfilled and compacted in layers as specified. Surface is then reinstated with asphalt. Backfill material will be imported. Fill will be a mixture of cut to fill aggregate from site and imported fill. Backfill may be stockpiled on site for a short period.	

3.9 CONSTRUCTION PROGRAMME

Construction works are anticipated to commence in September and take approximately 5 – 7 months. The estimated construction timeframe for each key activity is detailed below in Table 3-5.

Table 3-5: Estimated construction activity durations

Activity	Timeframe
Compound / traffic management set up	13 days
Shaft construction	70 days, of which dewatering is required for 50 days
Tunnel construction	15 days
Manhole construction[1]	30 days
Road reinstatement	10 days

3.10 CONSTRUCTION SUPPORT AREA AND COMPOUND

To support the proposed construction activities, a construction support area (CSA) within the public carpark at 38 Greys Avenue and 329 Queen Street will be required. This CSA has been initially established to support the Part 3 Alignment and Part 3 – Part 4 Connector Tunnel projects.

The CSA contains site offices and welfare facilities, along with some limited site laydown and materials storage areas. Note however that most excavated materials will be immediately removed from site, while construction materials (such as pipes and aggregates) will be delivered to site on a 'just in time' basis.

The site layout for the Greys Avenue CSA (as approved in the Part 3 consent) is shown below in Figure 3-2.

[1] Manhole construction may be completed at a later date

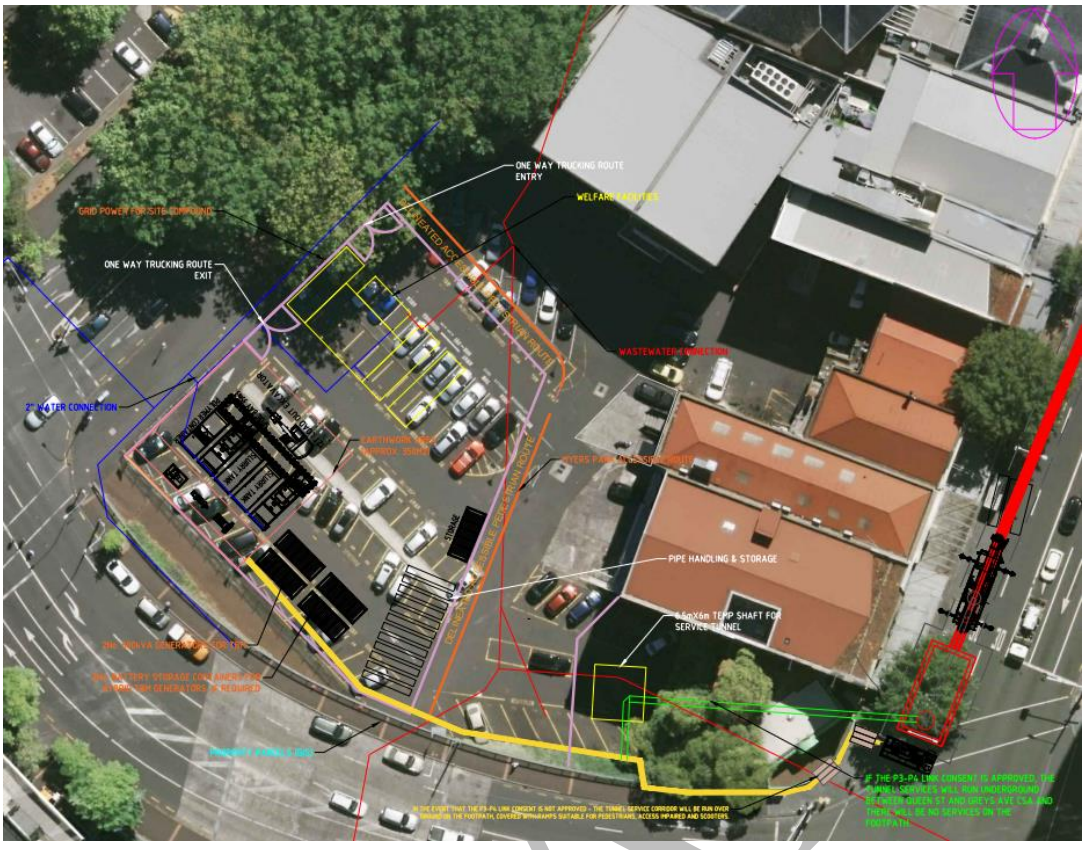

Figure 3-2: Greys Avenue CSA Layout

A 45m long by 11m wide compound will be set up around the Marmion Shaft to allow for the construction of the shaft and the tunnelling operations. The compound will make use of temporary concrete or steel barriers with hoardings around the perimeter of each, with access gates one or both ends.

Figure 3-3 below shows the consenting envelope for the proposed Marmion Shaft (red box). The construction compound for the shaft, defined by the pink lines for the hoarding and traffic barrier, will move with the shaft as drawn below, and will be finalised in the Construction Management Plan to be prepared by FH.

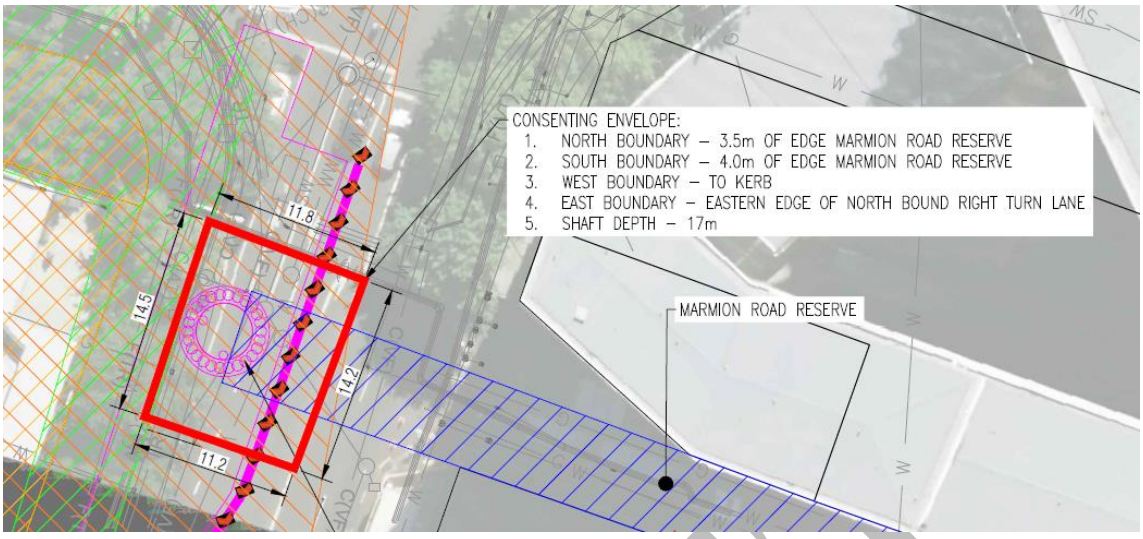

Figure 3-3: Shaft footprint and indicative compound

4 ARBORICULTURAL ASSESSMENT

As the proposed works are to be undertaken entirely within the existing Queens Street Carriageway adjacent to the subject trees, the impacts on the subject trees are anticipated to be minor. As works will be limited to the footprint of the carriageway, with the existing kerb to remain in place, only minor roots are anticipated. Road surfaces are typically devoid of significant roots, due to the unfavourable conditions posed by continual traffic use and lack of nutrient richness.

However, in accordance with best practice, it is recommended that all cut excavations be supervised, with a works arborist to be engaged for the duration of the physical works phase.

Tree Protection Fencing will also be required to ensure the ongoing protection of the main root zone environment within the pedestrian areas immediately to the west. No materials or machinery are to be stored within this area to eliminate the potential for physical damage.

See Section 5.0 of this Report for a list of project-specific tree protection measures.

4.1 RELEVANT STATUTORY RULES – TREE PROTECTION

Auckland Unitary Plan – Operative in Part

For this application, the rules in the Auckland Unitary Plan are considered.

The trees and vegetation impacted as part of this project stand within the road reserve. The specific rules applicable to this application are the following;

E26. Network utilities and electricity generation – Trees in roads and open space zones

Tree Pruning

The following are the relevant AUP (OP) rules for the pruning of a street tree:

- Rule E26.4.3.1. (A83): Tree trimming or alteration in road and public open spaces that comply with Standard E26.4.5.1 – a **Permitted Activity**

The works within the protected root zone

The following are the relevant AUP (OP) rules for the proposed works within the protected root zone:

- Rule E26.4.3.1. (A87): Works within the protected root zone in road and public open spaces that comply with Standard E26.4.5.2 – a **Permitted Activity**

In summary, the following activities can be undertaken as **Permitted Activities:**

4.1.1 DESCRIPTION OF ACTIVITIES

Tree Pruning

- Trimming of three protected trees (Tree 2-4) to enable the delivery of materials and operation of machinery and equipment – complying with Standard E26.4.5.1 – a **Permitted Activity**

While no pruning is currently anticipated to enable overhead clearance for the works, flexibility is proposed due to the uncertainty of the proposed works timeline.

Currently, the canopy of the Sweet Gum trees do not extend significantly over the carriageway, in part due to the requirement to maintain clearance for double decker buses. However, as the timeline for project construction and delivery is currently unknown, some pruning may be required in the future to provide adequate clearance for delivery of materials and machinery/equipment operation at the time of construction.

In considering the current canopy extent, any pruning will be minor, with branches no larger than 80mm in diameter to be pruned at the time of construction. The proposed pruning would be well within the permitted standard thresholds outlined in Standard E26.4.5.1, with less than 20% of the canopy to be pruned and branches no larger than 100mm to be removed.

All pruning works are to be undertaken by a suitably qualified arborist under the direction of a works arborist. The works arborist is to determine any required pruning at the time of the initial pre-construction meeting.

Works within the Protected Root Zone

- Works within the protected root zone of three (3) Sweet Gum trees growing within the Queen Street carriageway (Trees 2 -4) as part of the trenchless installation of the new wastewater pipeline (associated compound works) – complying with Standard E26.4.5.2 – a **Permitted Activity**

The main works proposed adjacent to the subject trees is the construction and operation of the proposed tunnel shaft. The actual tunnel will continue northwards along Queen Street, connecting with the earlier tunnel stages.

The actual shaft installation works will be located near Trees 2 & 3, with Tree 1 affected only by the sub-terrain tunnelling works, which is at an invert greater than 0.8m (greater than 10 metres in depth at this point).

The proposed shaft will be at the outer extremity of Tree 2's protected root zone (southwest quartile), while also affecting a minor portion of Tree 3's northeastern protected root zone.

In consideration of the ground conditions, trunk location and overhanging canopy, the works would affect less than 20% of each respective rootzone. As such, these activities would comply with Standard E25.4.5.2 and would be assessed as a **Permitted Activity.**

As no direct excavations or disturbance is anticipated near the three (3) trees, it is recommended that the tree be fenced off and excluded from the works area by way of protective fencing at the edge of the existing kerb line.

As aforementioned in Section 4.0, as an added precaution, it is recommended that all works are undertaken in accordance with the recommendations provided in Section 5.0 of this report, in case of changes to the methodology or the works compound during the physical works period.

5 TREE PROTECTION MEASURES

This section outlines a set of appropriate works methods and tree protection measures that should be adopted and put in place to ensure that adverse effects on the protected trees being retained within the project area are minimised and/or avoided.

(a) Prior to any works commencing in the vicinity of any of the protected trees (either on the site or on the road), a prestart meeting shall be held to discuss all issues pertaining to the protection of the retained trees and to gain a common understanding of the relevant conditions of consent in that regard. Present at the meeting should be;

- The site foreman or project manager
- The worksite supervisory arborist
- The Auckland Council Tree Owner Approver (if necessary)
- Any other relevant personnel

Excavation and New Construction Works

(b) The extent and technical specifications of all new elements to be constructed within the root zones of protected trees are to be provided to and approved by the works arborist prior to construction, in order to confirm that these works are in line with accepted arboricultural practice. It is considered that all detailed design elements are to be designed in such a way as to minimise potential disturbance in and around the root zones of those trees to be retained and worked around as part of the project.

(c) No heavy machinery or equipment or materials should be stored or deposited within the root zone area of any tree within the site outside of the compound, unless discussed with the works arborist prior to installation. If any materials do need to be deposited within the dripline of any tree a sheet of plastic or a tarpaulin should be laid down first.

(d) When machinery is to be used beneath the root zone of any retained tree, track movement must be kept to a minimum - with materials preferably installed progressively from the previously metaled/hard surface. Any movement on open ground must be undertaken on track mats or plywood where ground is not to be excavated.

e) Protective fencing should be installed wherever practicable at the protected root zone (dripline) edge of trees being retained in the vicinity of any physical works or excavations. Where practical, the pedestrian facility adjacent to the shaft shall be fenced off and a delineation provided. This fencing shall remain in place for the duration of the project in order to best protect the subject trees. The fencing is to be rent-o-style 1.8 metre steel mesh sections. The location of this fencing is to be confirmed and approved prior to any works being undertaken with the vicinity of the tree.

Pruning Works

(f) Any required pruning works are to be undertaken by a suitably qualified arborist under the direct supervision of the works arborist. The extent of pruning is to be assessed and discussed at the pre-start meeting to determine the exact requirements, if any. All pruning works are to be undertaken in accordance with permitted standards in accordance with best practice.

6 CONCLSION AND RECOMMENDATIONS

This report has been prepared to accompany the resource consent application for the Part 3 – Part 6 Link Project, which involves the construction of a wastewater pipeline from the Part 3 Mayoral Shaft to the new Marmion Shaft at the intersection of Queen Street and Marmion Street. It provides the information that will assist Council to assess the activities that affect protected trees - under the relevant tree protection rules of Chapter E26 of the AUP.

Any pruning required, together with the works proposed within the Protected Root Zone of the protected tree implicated as part of this project, are permitted activities, subject to arboricultural supervision. Provided that the tree protection recommendations outlined in Section 5.0 of this report are adopted as contract specifications of the project, there would be no adverse effects.

Please feel free to contact the undersigned if any further information is required.

Matthew Paul
Consultant Arborist
Peers Brown Miller Ltd

APPENDIX A – TREE DETAILS

Specific details pertaining to each scheduled tree and some more significant trees implicated in the proposal are outlined in the following section:

Description Key

- **Tree No**

Refers to the number assigned to each tree

- **Tree Species – Common Name**

The generally accepted common, or Maori, name of the tree is given.

- **Tree Species – Botanical Name**

The genus and species, and cultivar or variety where known, is given. Where the species is unknown the tree is identified as; (Genus) sp.

- **Protective Status**

This refers to the protective status of the tree as defined by the AUP-OIP (where relevant).

Y = Refers to trees protected as part of the Auckland Unitary Plan rules

N= No Protection.

Protected trees are indicated by red text to clearly separate these trees from the non-protected trees. AUP (Auckland Unitary Plan) relates to their specific protection status.

- **Height (in metres)/ Girth (in metres)**

- **Condition**

This category addresses the physiological condition of the tree as a whole, described as;

Good – Full healthy canopy but possibly including some suppressed or damaged branches

Fair – Slightly reduced leaf cover, minor dead wood or isolated major dead wood

Poor – Overall sparse leafing and/or extensive dieback. Irreversible decline

- **Comments**

Addresses the general location of the trees and/or any specific comments about the tree

ID #	Common Name *Botanical name*	Location	Protected status (Y / N)	Height m	Girth m	Condition (P,F,G)	Comments
1	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	18.0	1.93	Good	**Retain** – Works within the root zone as part of the proposed trenchless installation works compound and machinery operation.
2	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	15.0	1.65	Good	**Retain** – Works within the root zone as part of the proposed trenchless installation works compound and machinery operation. (pruning within permitted standards)
3	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	15.0	1.56	Good	**Retain** – Works within the root zone as part of the proposed trenchless installation works compound and machinery operation. (pruning within permitted standards)
4	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	16.0	1.44	Good	**Retain** – Beyond the direct works area but require protection. Protection required as part of delivery or materials or machinery during establishment construction.(possible

ID #	Common Name *Botanical name*	Location	Protected status (Y / N)	Height m	Girth m	Condition (P,F,G)	Comments
							pruning within permitted standards)
5	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	14.0	1.88	Good	**Retain** – Beyond the direct works area but require protection. Protection required as part of delivery or materials or machinery during establishment construction.
6	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	14.0	1.67	Good	**Retain** – Beyond the direct works area but require protection. Protection required as part of delivery or materials or machinery during establishment construction.
7	Sweet Gum *Liquidambar styraciflua*	Queen Street (adjacent to 319 Queen Street)	Y	14.0	1.76	Good	**Retain** – Beyond the direct works area but require protection. Protection required as part of delivery or materials or machinery during establishment construction.

APPENDIX B

TREE LOCATION IMAGE


Tree 1
Tree 2
Tree 3
Tree 4
Tree 5
Tree 6
Tree 7
MARMION STREET
public | Auckland Council Plans and Places | Spatial Infrastr