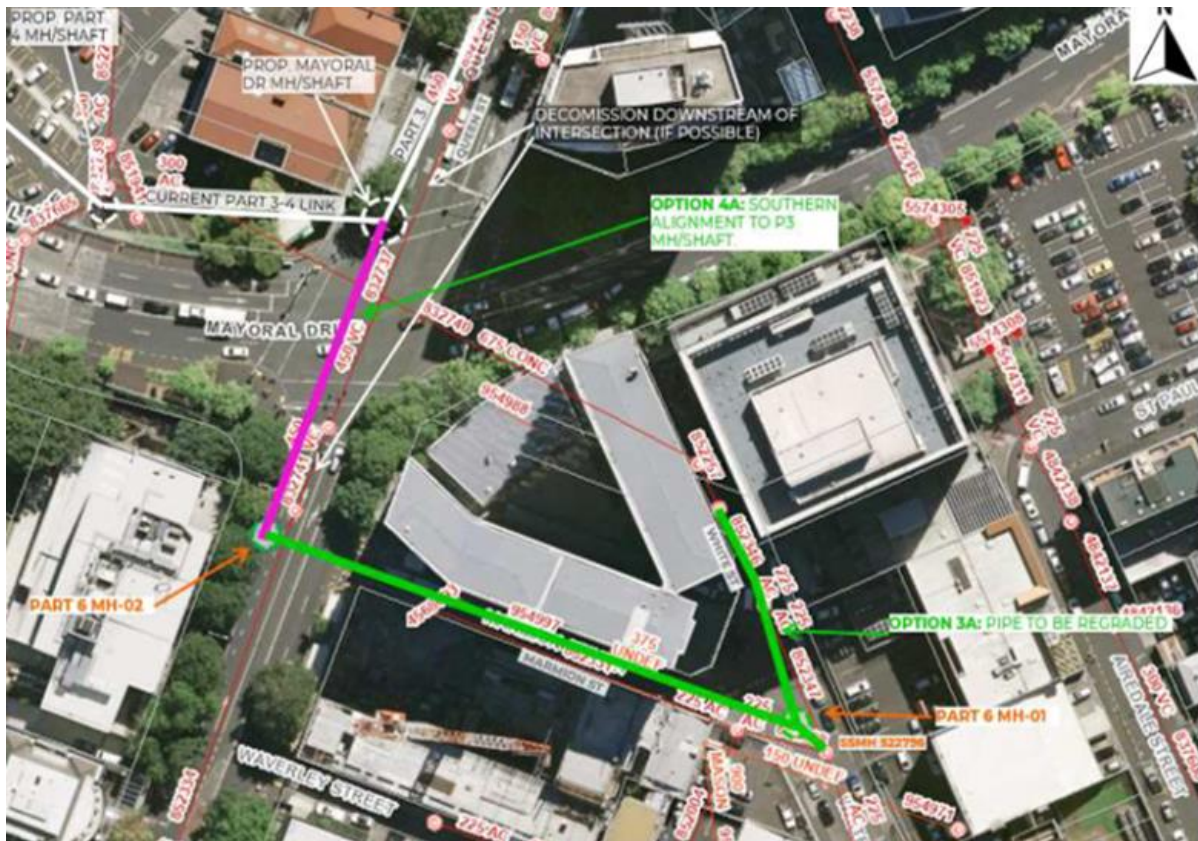


DRAFT

**QUEEN STREET WASTEWATER DIVERSION
PROGRAMME: PART 3 – PART 6 LINK AND PART 6
PROJECTS: ARCHAEOLOGICAL ASSESSMENT**

Prepared for WSP New Zealand and Watercare Services Ltd



October 2024

By

Sarah Macready, MA (Hons)

Clough
& ASSOCIATES LTD

321 Forest Hill Rd,
Waiatarua, Auckland 0612
Telephone: (09) 8141946
Mobile 0274 850 059
www.clough.co.nz

Contents

Introduction	1
Purpose of Report	1
Existing Environment.....	2
Project Works	5
Temporary Construction Shaft – Marmion Shaft	5
Trenchless Tunnelling Works.....	7
Part 6 Works	7
Network Utility Relocation	8
Construction Support Area	8
Assessment Methodology.....	10
Historical Background	11
Māori Settlement.....	11
European Settlement	11
The Project Area	12
Archaeological Background	17
Recorded and Scheduled Sites.....	17
Previous Archaeological Work.....	20
Assessment of Effects	23
Marmion Shaft	23
Tunnelling Works	23
Part 6 Works – Marmion Street and White Street	23
Network Utility Relocation Works	24
Conclusion	24
Discussion and Conclusions	25
Summary of Results	25
Māori Cultural Values.....	25
Limitations.....	25
Archaeological Value and Significance	25
Effects of the Proposal	26
Resource Management Act 1991 Requirements.....	26
Heritage New Zealand Pouhere Taonga Act 2014 Requirements	27
Conclusions	28
Recommendations.....	29
Bibliography	30

INTRODUCTION

Purpose of Report

Watercare Services Limited ('Watercare') is a lifeline utility providing water and wastewater services to a population of 1.7 million people in Auckland. Its services are vital for life, to 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 wastewater network within 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.

The Part 3 – Part 6 Link Project involves 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').

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

- 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.
- 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.

An Authority under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) has also been granted covering both the Part 3 Alignment and the Part 3 – Part 4 Connector Tunnel (Heritage NZ Authority 2024/139).

This report has been commissioned by WSP on behalf of Watercare and provides an assessment of effects on archaeological values report in relation to the Part 3 – Part 6 Link Project and Part 6 works of the Queen Street Wastewater Diversion Project.

This report has been prepared as part of the required assessment of effects accompanying a resource consent application under the Resource Management Act 1991 (RMA) and to identify any requirements under the HNZPTA. Recommendations are made in accordance with statutory requirements.

Existing 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.

This assessment also includes the Part 6 works from the Marmion Shaft along Marmion Street and into White Street, as shown in Figure 3.

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. Marmion Street and White Street runs between and behind multi-storey residential and commercial buildings.



Figure 1. Aerial view of Queen Street Wastewater Diversion Programme (Part 6 alignment shown in green)

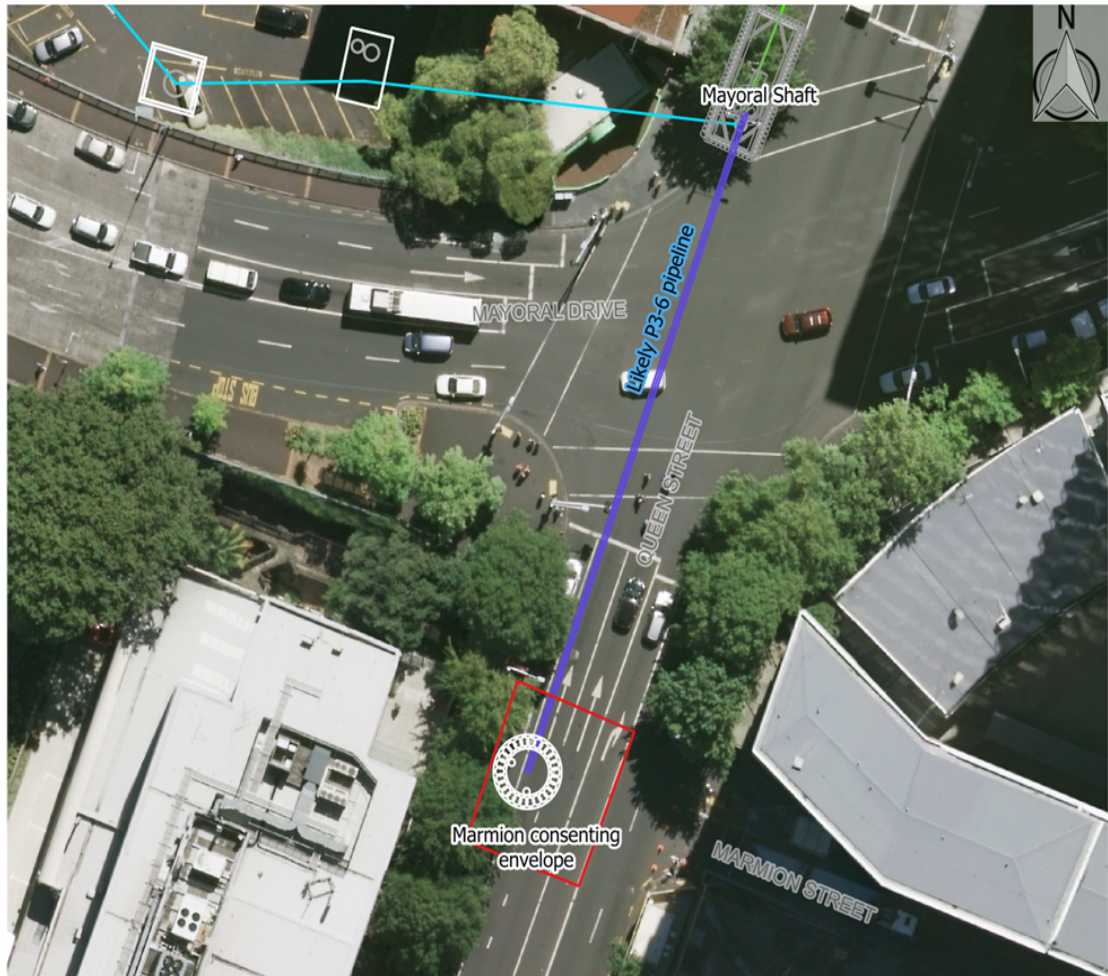


Figure 2. Part 3 – Part 6 Link project area



Figure 3. Part 6 project area

Project Works

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 4.

Part 6 of the Queen Street programme also includes a wastewater alignment and connections along Marmion Street and within White Street. This alignment will be consented as a separate project, but is included within this assessment for HNZPTA application purposes.

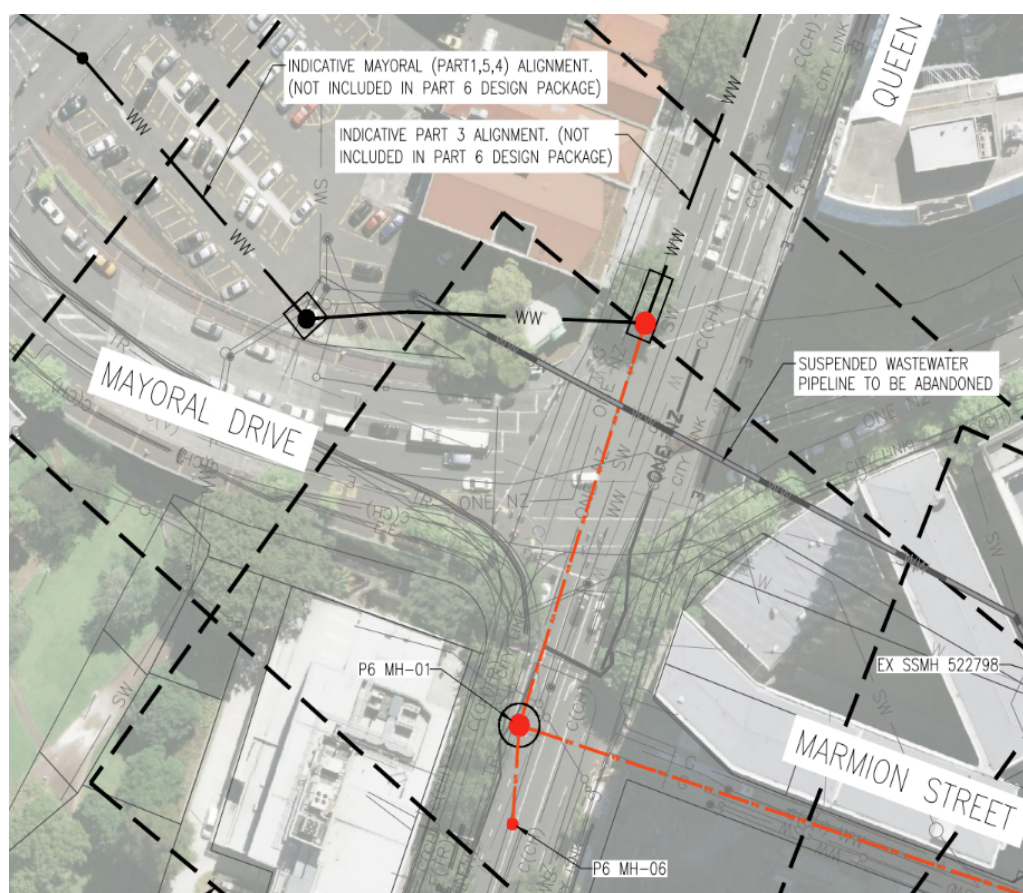


Figure 4. Overview of construction works for Part 3 – Part 6 Link

A summary of the project works is provided below, with a more detailed description provided within the WSP Design and Construction Statement (Appendix C of the resource consent application).

Temporary Construction Shaft – Marmion Shaft

The temporary shaft opposite Marmion Street will be used as a reception pit for the Pilot Guided Boring Machine. The shaft's 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 (Figure 5).
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.

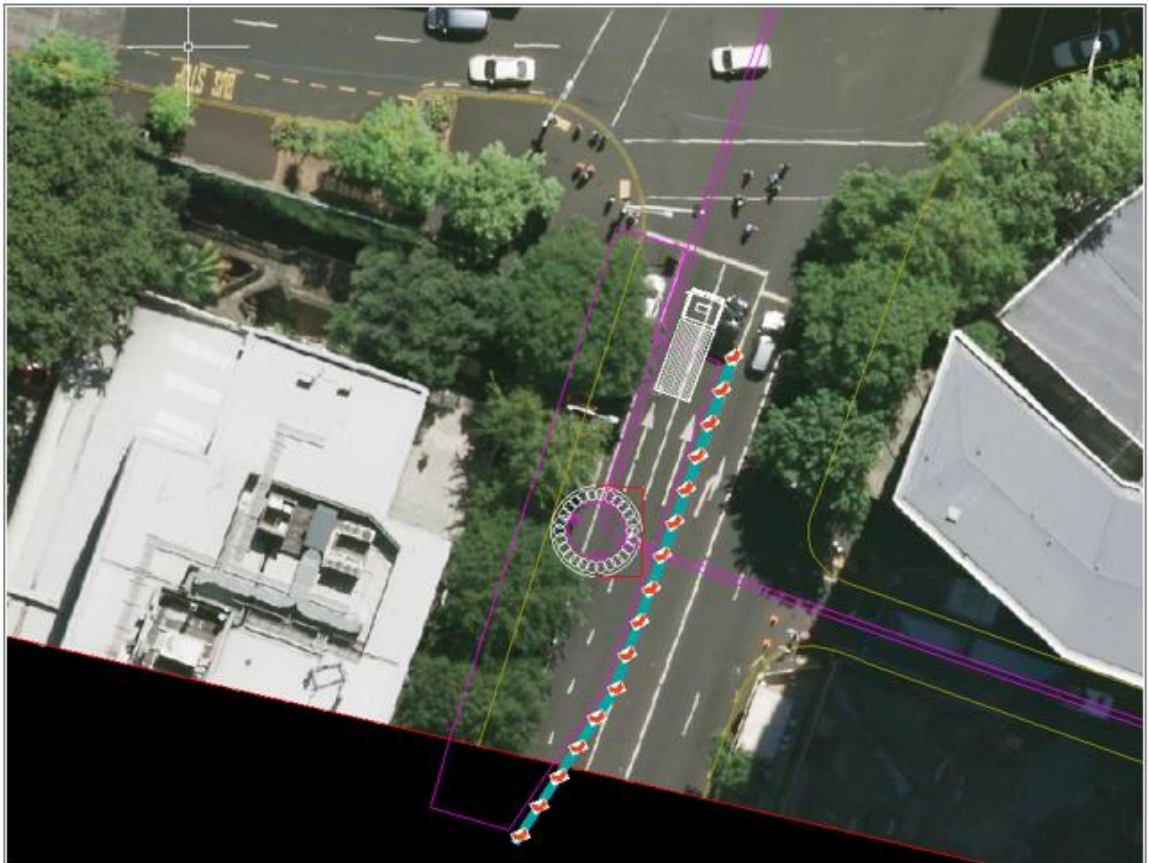


Figure 5. Secant pile shaft layout (indicative)

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.

The shaft construction will require earthworks for the crane and piling platform over an area of 216m² (c.30m by 9m by 600mm deep), and earthworks for the shaft of 32m² (6.4m diameter by 17m deep).

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

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.

Part 6 Works

The preliminary/concept plan for the Part 6 construction works is shown in Figure 6. Trenchless methods would be used from the Marmion Shaft to a shaft at the Marmion Street/White Street intersection, with open trenching (c.1.5m wide and up to 2m deep) from there along a northwest alignment.

The shaft would be 6m x 6m, excavated to a depth of c.5m would be of post and panel construction.

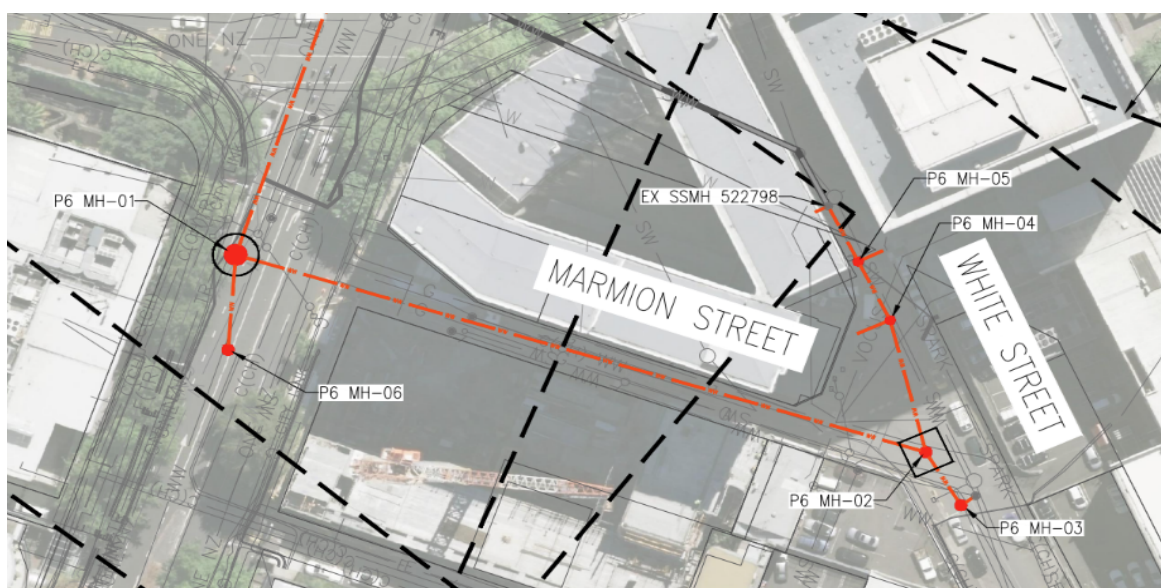


Figure 6. Overview of construction works for Part 6 alignment (preliminary plan)

Network Utility Relocation

The existing network utilities within the carriageway of Queen Street, will need to be relocated to enable construction of the Marmion Shaft. This will also be required in Marmion Street and White Street to enable the construction of the shaft and trench excavations. A flexible ‘consenting envelope’ is being sought, and the utilities which may need to be relocated include potable water, electricity, wastewater, stormwater and communications.

The works would involve initial potholing (small trenches c.400mm wide and up to 1.5m deep) to confirm the location of network utilities. 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 diversion works would be located within the overall project envelope shown in Figure 7.



Figure 7. Project envelope for network utilities relocation works

Construction Support Area

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.

The site layout for the Greys Avenue CSA (as approved in the Part 3 consent, and covered by the Authority issued by Heritage NZ) is shown below in Figure 8.

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 9 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 Fulton Hogan.



Figure 8. Greys Avenue CSA layout

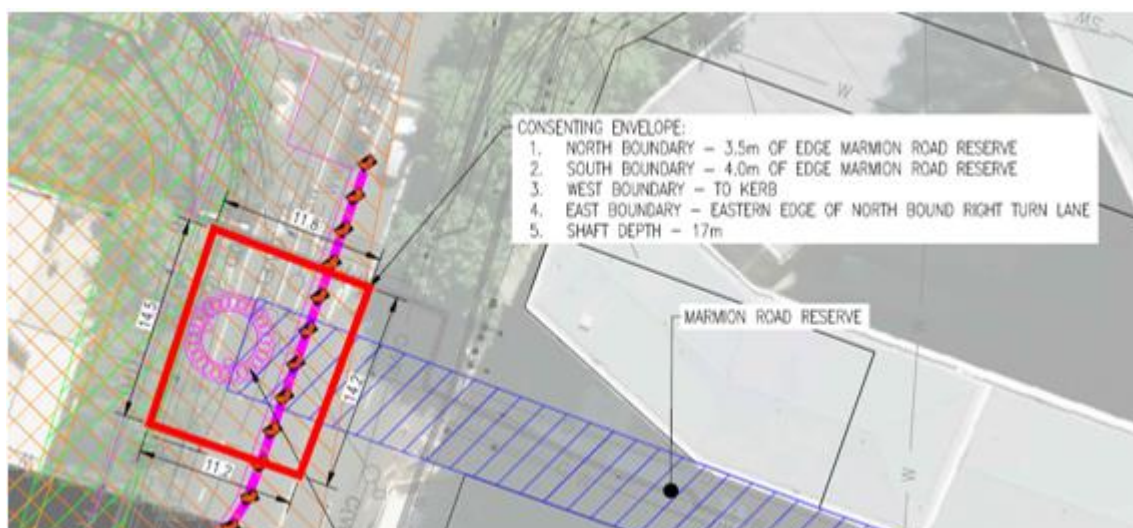


Figure 9. Shaft footprint and indicative compound

Assessment Methodology

The New Zealand Archaeological Association's (NZAA) site record database (ArchSite), Auckland Council's Cultural Heritage Inventory (CHI), Auckland Unitary Plan Operative in Part (AUP OP) schedules and the Heritage New Zealand Pouhere Taonga (Heritage NZ) New Zealand Heritage List/Rārangi Kōrero were searched for information on archaeological or other historic heritage sites recorded in the immediate vicinity of the Project. Literature and previous archaeological reports relevant to the area were consulted (see Bibliography).

Archaeological sites beneath sealed surfaces in urban environments can rarely be identified prior to being exposed in the course of redevelopment work, and the approach to archaeological assessment is therefore to identify historically recorded activities and assess the potential for archaeological evidence to have survived on the basis of later modifications.

HISTORICAL BACKGROUND

Māori Settlement

Tāmaki Makaurau (Auckland) had a long history of Māori settlement prior to the arrival of Europeans. The isthmus offered fertile land, abundant fishing grounds and a temperate climate (Stone 2001: 3). It also boasted a valuable portage at Ōtāhuhu where canoes were dragged across a short distance of land separating the Tasman Sea and Pacific Ocean. The area also offered access to the hinterland through the Awaroa Creek leading into the Waikato River (Stone 2001: 2).

Māori settlement encompassed today's City Centre where, in the immediate Britomart area, a major pā site known as Te Rerengaoraiti was constructed on the point between what was to become Commercial Bay and Mechanics Bay. Another pā (Ngāhuwera) was recorded on the former headland at the end of Albert Street.

A stream known as the Waihorotiu that was at least partly navigable by canoe ran down the valley in what was to become Queen Street and led to the shallow mudflats that typify much of the Waitematā coast. Māori gardening was recorded in the Queen Street valley as late as c.1838-40, and the large village of Te Reuroa once covered what is now Albert Park. Another settlement named Horotiu was recorded in the vicinity of the Town Hall, and a settlement known as Ngā Wharau a Tako was located on the Swanson Street ridge with a track (Te Tarapounamu) leading down to the Queen Street valley. At various times, other settlements and pā were located throughout the Tāmaki Isthmus, notably on Auckland's volcanic cones. (Macready et al. 2016, referencing Stone 2001, Simmons 1987, Kelly and Surridge 1990).

European Settlement

European settlement in Auckland began in 1840 after the first Governor of New Zealand, Captain William Hobson, chose the isthmus as the site of the capital of the new colony. Settlement proceeded relatively quickly, with tents set up for government officials on the eastern side of Point Britomart in what was called Official Bay and further along the coast in Mechanics Bay. As infrastructure developed, Foreshore (Fore) Street, later Fort Street, became the waterfront area with various hotels and businesses. The shallow mudflats along the coast, however, provided poor anchorage for a growing capital and development of the area was quickly deemed essential. The dual factors of improved harbour facilities and the high value of land in the centre of town drove the reclamation of the foreshore area. In less than 50 years, more than 50 hectares had been added to downtown Auckland, with smaller reclamations continuing in the 20th century. (Macready et al. 2016).

The population of Auckland grew rapidly after initial settlement. By 1843, there were 3,000 people living in Auckland. By the end of the 1860s this had grown to more than 12,000 and by the turn of the century the population was almost 70,000 (Bush 1971). From its original centre near the waterfront, the city rapidly expanded up towards the Symonds Street ridge and out into suburban areas, initially into Parnell, Grafton and Ponsonby. The city's first gaol on the corner of Queen Street and Victoria Street West, initially on the outskirts of town, was removed to Mt Eden as early as 1856 (Best 1992). From the 1860s onwards the early timber houses and shops in the central city were gradually replaced with more substantial brick structures, the process accelerated by a number of fires which spread rapidly through the streets of timber buildings.

With the growth of the city came demand for basic infrastructure including sewerage, drainage and water supply systems, but some of these services took many years to establish (Bush 1971). Until the late 1870s drinking water was largely supplied by privately and publicly owned wells. The acquisition of Western Springs in the 1870s allowed access to a reticulated system in some areas, but poor management and declining water quality resulted in a water famine in 1900. The construction of water reservoirs in the Waitakere Ranges solved the problem, but not until 1907.

Little provision was made for rubbish collection until the construction of the Victoria Park refuse destructor in 1905, and much rubbish was disposed of in backyards and other convenient fill sites throughout the 19th century.

Sewage collection and disposal in the 19th century was based on night-cart collection and the discharge of raw sewage into the Waitematā Harbour at several locations. One of the earliest drainage and sewerage installations was the Ligar Canal in Queen Street, enclosing the Horotiu Stream that flowed down the Queen Street gully. Initially a plank-covered ditch structure, it was partly replaced in 1855 by a brick barrel drain known as the Queen Street Main Sewer (Best et al. 1999). Upgrading of the system continued in the following years, and sewerage and drainage systems were gradually extended to other city streets.

The Ōrākei Main Sewer was constructed in the early 20th century, taking wastewater from Pt Chevalier across the city to Ōkahu Bay. It was built between 1910 and 1913 in various stages and by different contractors, and was an impressive oval-shaped structure with a brick arch, large enough for a person to walk through (Bickler 2012). The sewage treatment works based at Ōkahu Point were not established until 1914, and even then the sewage discharged into the sea was only roughly screened.

The Project Area

Mayoral Drive was constructed in the 1970s and 1980s, cutting through Greys Avenue, Queen Street and Airedale Street in the vicinity of the Project area and requiring the demolition of numerous residential and commercial buildings.

City maps dated 1866 (Figure 10), 1882 (Figure 11) and 1908 (Figure 12) overlaid with the approximate route of the Part 6 alignment show the extent of development at those dates. The maps show that all the buildings in the vicinity of the Project area were still of timber construction the early 1880s (Figure 11), whereas buildings along Queen Street and further north in the heart of the city had largely been replaced by brick buildings. The buildings adjacent to the Project Area were still timber built in the early 20th century (Figure 12). An aerial view dated 1940 (Figure 13) shows that by that date many had been replaced by larger commercial buildings, but a number of smaller residential buildings remained.

The maps also show changes to the street layout and names. In 1866 today's White Street and Marmion Street did not exist, while Airedale Street was named Edward Street and the western end of St Paul Street was called Abercrombie Street (Figure 10). The street named White Street on the 1866 map no longer exists today, having been incorporated into the corner property at 430 Queen Street. The 1882 map (Figure 11) shows that Marmion Street has been created by that date, having been created in 1878.¹ Edward Street has been renamed Alexandra Street (Figure 11), but had been renamed Airedale Street by 1920

¹ <https://kura.aucklandlibraries.govt.nz/digital/collection/streets/search/searchterm/marmion%20street>

(Figure 12). Today's White Street had still not been created by 1940, as shown in the aerial photograph in Figure 13, and was presumably part of the redevelopment of the area following the creation of Mayoral Drive in the 1970s/1980s. The research therefore shows that the route of the Part 6 alignment along Marmion Street followed what was a boundary between residential lots in the 19th century prior to 1878. This was also the case for the alignment along White Street, which follows what was the boundary between residential lots in the 19th century and through to the later 20th century.

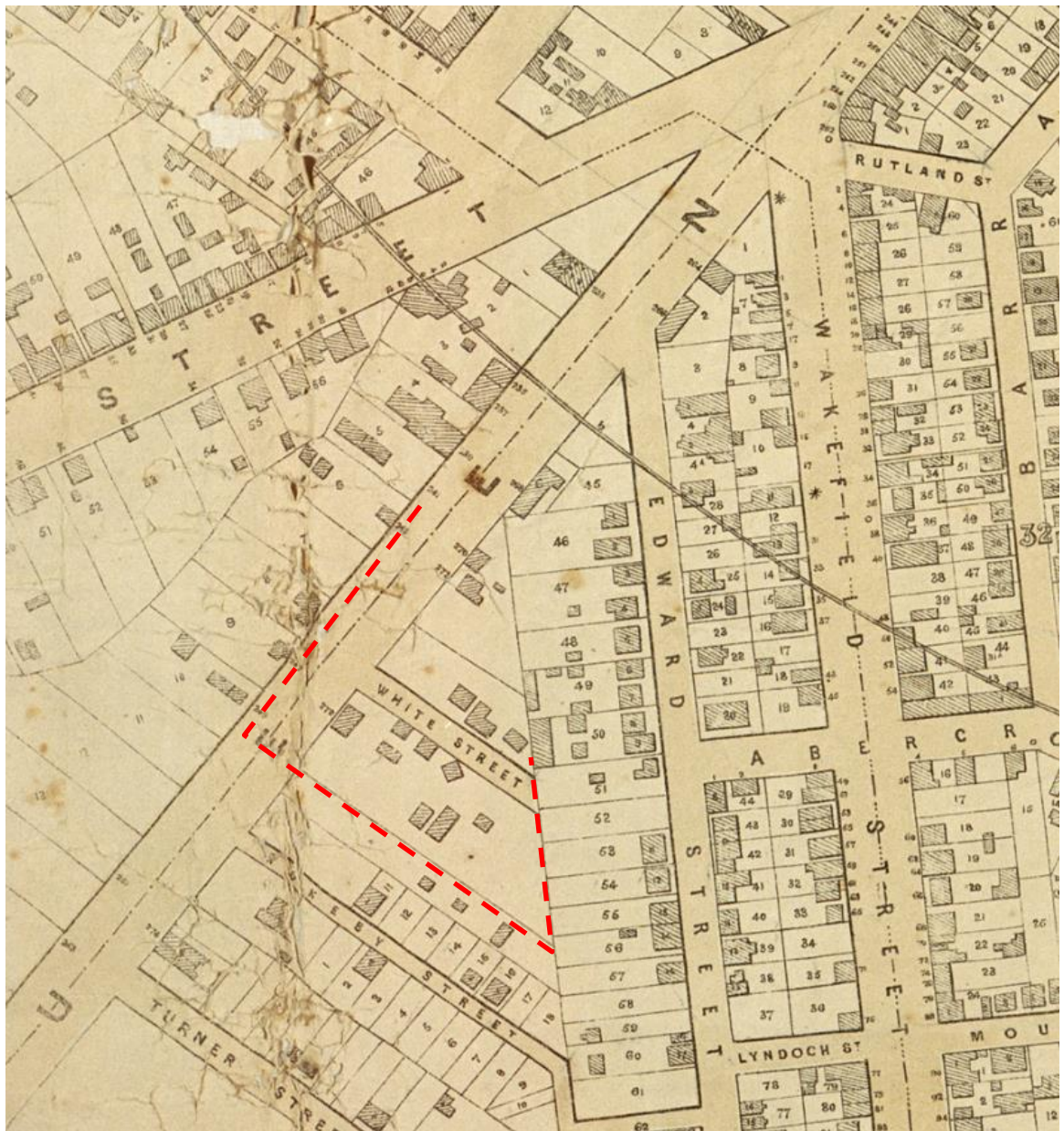


Figure 10. Detail from Vercoe and Harding's 1866 Map of Auckland, showing the street layout and development around the Project area at that date (source: Auckland Libraries Heritage Collections, NZ Map 18). Approximate Part 6 alignment overlaid

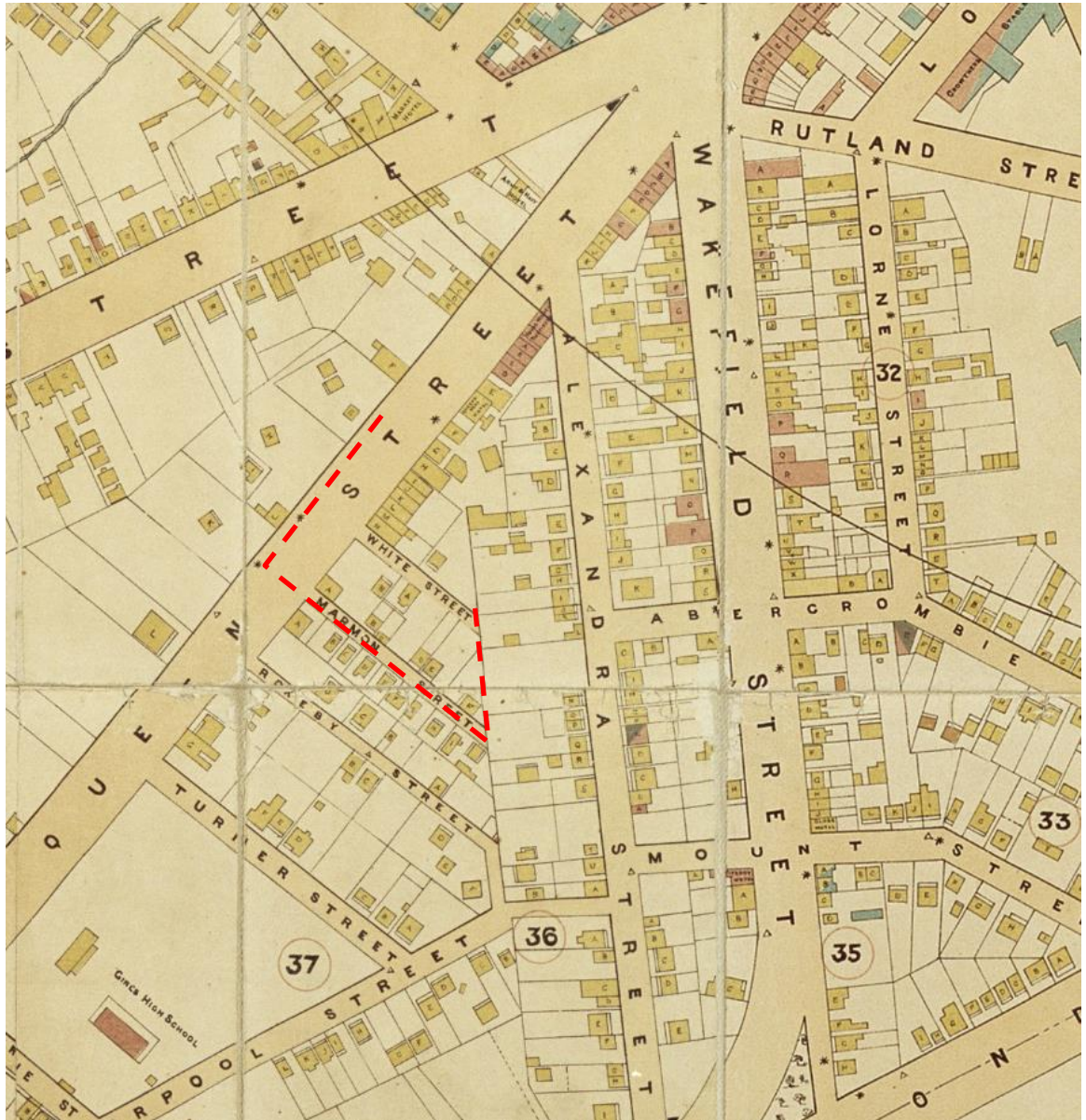


Figure 11. Detail from T.W. Hickson's 1882 Map of Auckland, showing the street layout and development around the Project area at that date (source: Auckland Libraries Heritage Collections, NZ Map 60b). Approximate Part 6 alignment overlaid. Note that yellow colouring indicates timber buildings and red brick buildings

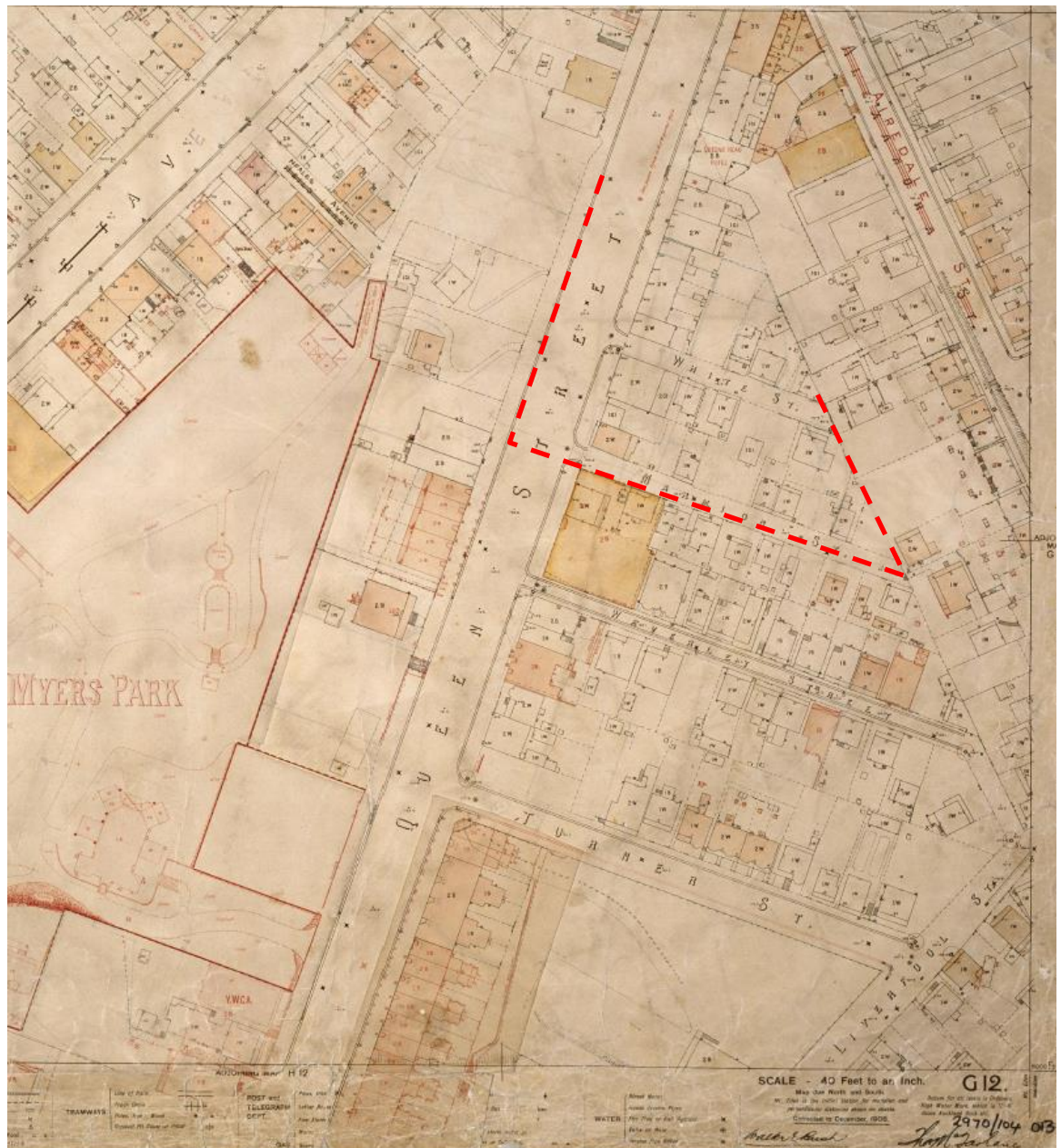


Figure 12. Detail from Henry Wrigg's 1908 Map of Auckland, sheet F12 Map of Auckland, showing the street layout and development around the Project Area at that date (source: Auckland Council archives). Approximate Part 6 alignment overlaid. Note that later additions/changes to the map c.1919 are in red or orange shading

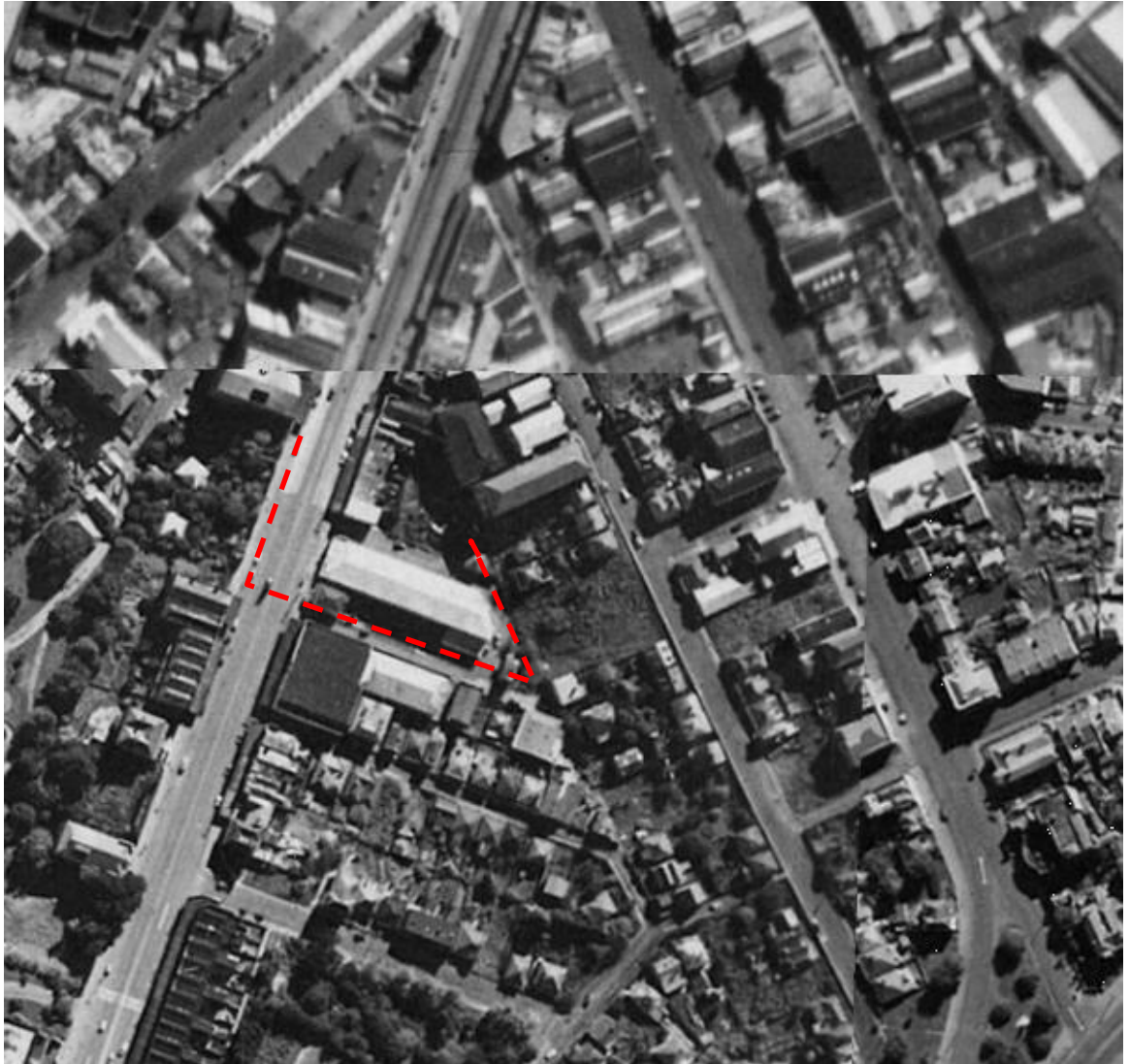


Figure 13. 1940 aerial photograph, with the approximate Part 6 alignment overlaid (source: Auckland Council GeoMaps)

ARCHAEOLOGICAL BACKGROUND

Recorded and Scheduled Sites

The recorded archaeological and other historic heritage sites in proximity to the Project area are shown in Figure 14 and Figure 15, and are listed in Table 1.

There are no recorded archaeological sites within the Project area; however, five sites are located in proximity to it (within c.100m):

R11/2017: European midden within and overlying the Waihorotiu stream bed and banks, in Myers Park near the underpass but likely to continue within the Greys Avenue carpark.

R11/1936: the site of a number of 19th century businesses at 36-38 Greys Avenue. The businesses included a harness maker, carpenter, government clerk, compositor, plumber, gasfitter and shipwright. The information is based on historical research and the extent of any surviving subsurface remains is not known.

R11/2669: the Myers Park Historic Landscape, which covers the whole of Myers Park. It is scheduled on the AUP OP as a historic heritage place (ID 02046) and is also included on the New Zealand Heritage List (ID 7008).

R11/2993: a former brick building at 2 Waverley Street, constructed in 1887/88, which served as a brothel known as the Pearlshell Villa. The building was recorded and demolished and under Heritage NZ Authority (2015/2021) (Larsen et al. 2017).

R11/2717: the site of the former 19th century corrugated iron Rikka building south of the Auckland Town Hall. The building was recorded and demolished and a number of artefacts and features exposed during excavations for the Q Theatre under Heritage NZ Authority (2010/64) (Best and Harlow 2011).

In addition to archaeological sites, there are two scheduled and listed historic heritage items close to the Project area (Figure 15, Table 1). These are the Auckland Sunday School Union Building at 323-327 Queen Street (AUP 02045, NZ Heritage List 2613); and the Myers Park Historic Landscape that is also a recorded archaeological site, R11/2667 (AUP ID 02046, NZ Heritage List 7008).

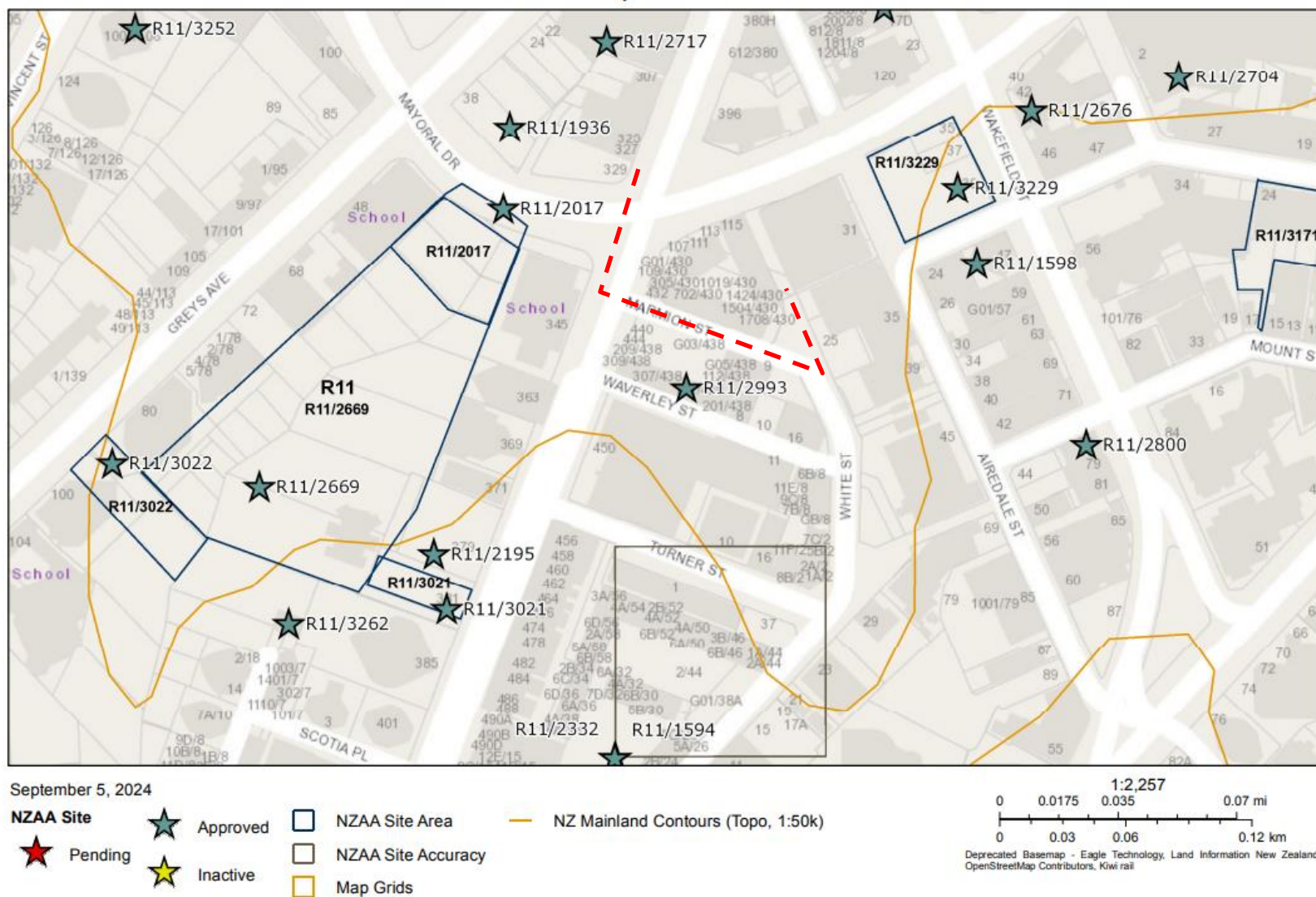
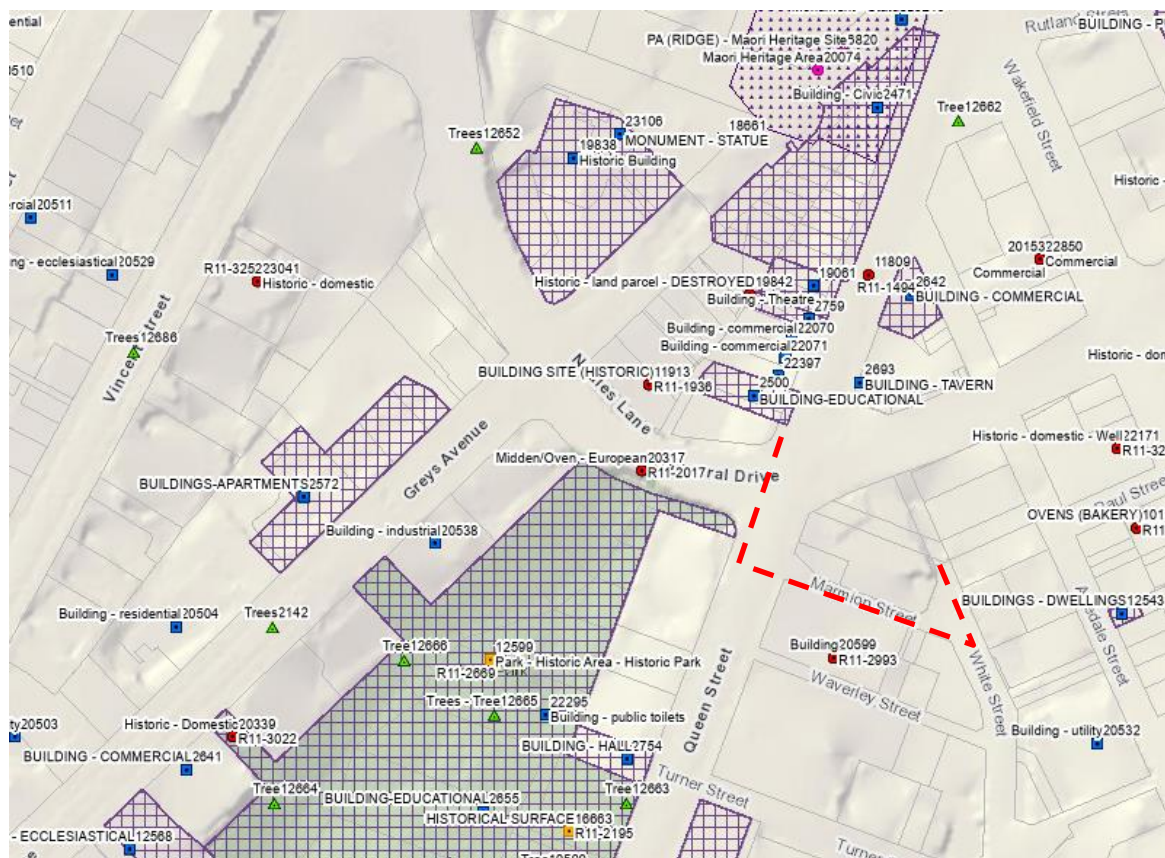


Figure 14. Previously recorded archaeological sites in proximity to the Project area (source: NZAA ArchSite 2024)



CHI Place (Label - CHI)

Archaeological Site ●

Hayward and Diamond ■

Historic Botanical Site

Historic Structure

Maori Heritage Area ●

Maritime Site ●

Reported Historic Site 📍

Figure 15. Showing scheduled and recorded historic heritage places on the Auckland Council CHI within and near the Project area (source: Auckland Council GeoMaps 2023)

Table 1. Recorded archaeological and other historic heritage sites in proximity to the Project area
(source: Auckland Council CHI and NZAA ArchSite)

NZAA #	CHI #	AUP Schedule/ NZ Heritage List	Site Type/Name	Grid ref. (NZTM)	Current Status/ Location
R11/1936	20317	-	Commercial	E1757116 N5919902	Site of 19th century businesses. 36-38 Greys Avenue
R11/2017		-	Midden (historic)	E1757113 N5919863	European midden just below Mayoral Drive in Myers Park, associated with Waihorotiu stream and drainage
-	2500	AUP HHP ID 02045 NZ List 2613	Historic Structure – Auckland Sunday School Union Building		323-327 Queen Street
R11/2669	12559	AUP HHP ID 02048 NZ List 7008	Historic Landscape – Myers Park		331 Queen Street
R11/2717	19842	-	Historic – land parcel – Rikka Building	E 1757162 N 5919943	Site of Q Theatre between Queen St and Greys Avenue, 309 Queen Street
R11/2993	20599	-	Historic (domestic) – Pearlshell Villa	E 1757200 N 5919778	2 Waverley Street

Previous Archaeological Work

Over the past 30 or so years several archaeological investigations have been carried out in the City Centre which have demonstrated the potential for the survival of archaeological remains beneath buildings and city streets. These have included the Britomart Transport Centre investigations within the Commercial Bay reclamation area (Bickler et al. 2005); Auckland’s early gaol site at the corner of Queen Street and Victoria Street West (Best 1992); an early hotel site on Fort Street (Brassey and Macready 1994); the site of His Majesty’s Theatre on Queen Street (Felgate 1998); Browns Mill in Durham Lane (Brassey 1990); an area of early European settlement around the former Mechanics Institute, Chancery Street (Macready and Robinson 1990); and more recently works for the City Rail Link’s Aotea Station which have exposed early building foundations, wells and infrastructure remnants (Low et al. 2021; Clough-Macready et al. 2022).

These investigations were carried out following archival research and consideration of the extent of post-19th century modifications, which indicated the potential for archaeological remains to have survived. The majority of discoveries have been in former city allotments with only a few isolated discoveries made within road reserves.

Few remains relating to earlier Māori settlement have been encountered in central Auckland, but there have been exceptions, notably Māori gardening implements and shell midden in the Queen Street valley during the construction of 205 Queen Street and investigation of the early gaol site (Best 1992), close to the original course of the

Waihorotiu stream, which ran parallel to Queen Street, midway between Queen and Elliot Streets. The discovery of a whalebone mere was also reported during the construction of the Civic Theatre in 1929 at a depth of 7m.

Investigations within road reserves have included excavations at the intersections of Queen Street with Fort Street and Queen Street with Swanson Street (Best et al. 1999), which exposed the city's earliest wooden drainage system down Queen Street (the Ligar Canal) and its successor, a substantial brick barrel drain (the Queen Street Main Sewer). Other investigations have also exposed sections of the drain (e.g. Bickler et al. 2005). During the recent City Rail Link works, excavations in road reserves around Albert Street, Wellesley Street and Mayoral Drive have exposed early infrastructure elements including sections of 19th century brick barrel drains as well as pockets of dumped historic artefacts (Low et al. 2021; Clough-Macready et al. 2022). However, as is inevitable with basic utilities, repair, upgrading and installation of new services will have destroyed many of the earlier infrastructure elements.

Another nearby site was exposed during street upgrade works within the Darby Street road reserve (R11/2734). It consisted of a historic rubbish dump relating to a 19th century residence (Judge et al. 2012) and demonstrates other types of archaeological find that can occur within road reserves. The potential for archaeological remains is increased when (as in the case of Darby Street) the road was part of later development/subdivision cutting across an original city section, or where early roads have been widened, when the foundations of early buildings that extended to the original street frontage may be exposed.

In the near vicinity of the Greys Avenue carpark on Mayoral Drive and northern end of the Project area, excavations in the 1990s in the Mayoral Drive underpass (site R11/2017) for the construction of a dam wall at the northern edge of Myers Park were monitored by Dr Simon Best. This was in the location of the former Waihorotiu stream that ran down the centre of Myers Park towards the Town Hall (see Figure 16). The excavations located the original stream bed and three drains, one concrete, one brick and one ceramic running down the stream. The brick and ceramic drains were considered likely to date to the period 1884-1885, when the Council undertook extensive drainage works in the gully between Queen and Grey Streets. European artefacts in the bed of the stream and in fill layers above were also present (Best 1998). The drains were found at depths of 1.6 to 1.8m below current ground levels and the stream bed was estimated to be 2.5m below the ground surface. Artefact-rich layers were exposed at a depth of c.1.6m below the tarmac of the underpass, while buried topsoil of the stream banks was found to be present at depths of >1m below the ground surface on the western side and >0.5m on the eastern.

More recent excavations in Myers Park immediately to the south of the underpass have exposed similar stratigraphy and ceramic drains (Harding and Farley 2023).

Investigations were carried out in 2010 at the Q Theatre/Arts Precinct site south of the Town Hall (305-309 Queen Street, 315-319 Queen Street and 20-24 Greys Avenue). This involved the recording of the 1880s corrugated iron Rikka Building (R11/2717) at 309 Queen Street prior to its demolition, and archaeological monitoring and investigation following demolition of this and other buildings (Best and Harlow 2011). A number of artefacts and features were investigated, some of which could be linked to individuals associated with the site. These included three leather offcut deposits, providing information on early boot/shoemaking techniques carried out at a former factory within the area investigated. Among other items of interest were a few Chinese artefacts, associated with a Chinese furniture factory dating to the 1920s, one of several Chinese businesses

concentrated along Greys Avenue in the early-mid 20th century. No direct evidence of pre-European settlement was found, but as this was in the vicinity of the Waihorotiu stream a microfossil sample was taken from the basal clay, which showed evidence of forest tree species and of forest clearance by fire.

To the south of the Project area, investigations during and following the demolition of the brick building at 2 Waverley Street (R11/2993, a purpose-built brothel known as the Pearshell Villa, later converted to a boarding house) were carried out in 2016. However, although the building was recorded little was found during the monitoring of subsequent excavation works (Larsen et al. 2017).

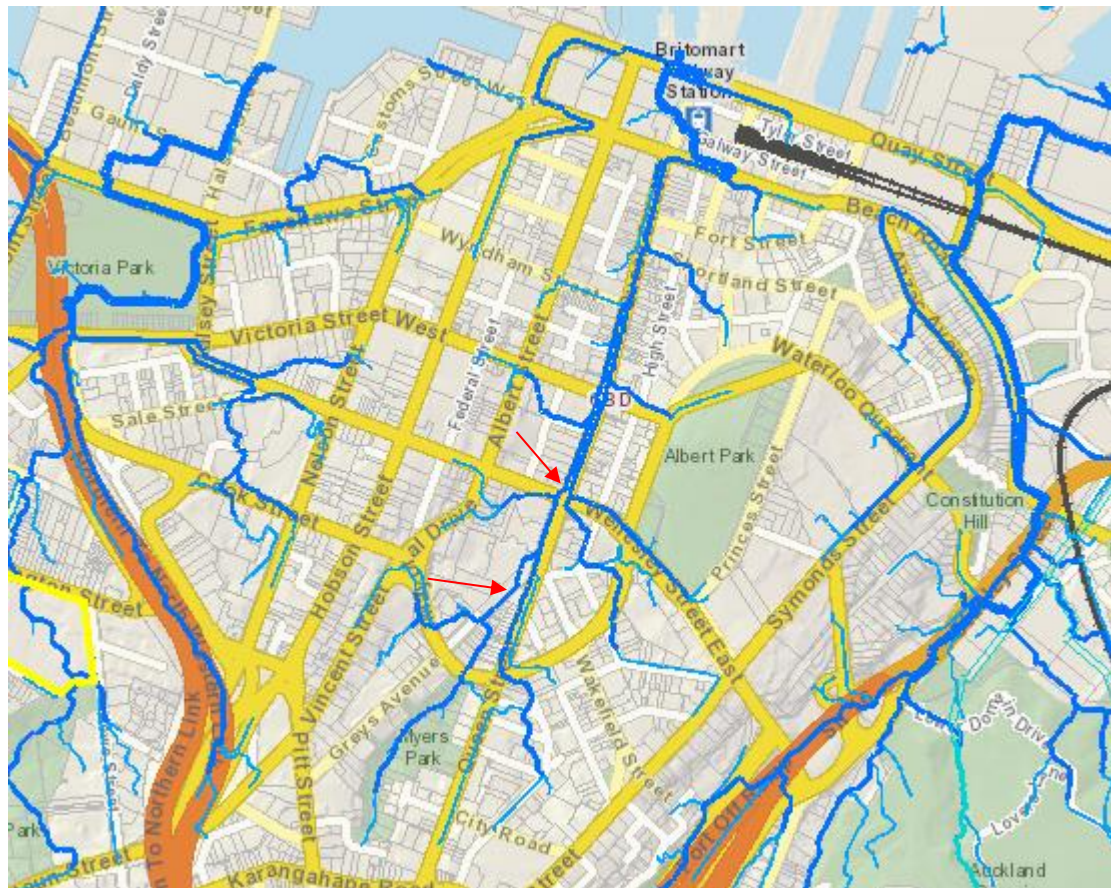


Figure 16. Hydrology overlay showing flow paths in the vicinity of Mayoral Drive, Queen Street and the Project area, including the Waihorotiu stream (red arrows) through Myers Park, beneath Mayoral Drive and the Town Hall and along Queen Street (source: Auckland Council GeoMaps)

ASSESSMENT OF EFFECTS

The proposed Project works are located within areas that have been extensively modified by previous road construction/maintenance and services installation within the road reserves, reducing the potential for the presence of subsurface archaeological remains. However, previous works within central Auckland road reserves have exposed isolated archaeological features relating to pre-1900 occupation, including elements of early drainage, as well as occasional deposits of historic artefacts or building foundations within streets that have been widened, and early 20th century infrastructure remains.

In addition, the route of the Part 6 alignment along Marmion Street followed what was a boundary between residential lots in the 19th century prior to 1878. This was also the case for the alignment along White Street, which follows what was the boundary between residential lots in the 19th century and through to the later 20th century. It is therefore possible that remains relating to early residential occupation in this area, such as wells or backyard rubbish pits, could be present.

The potential effects of the proposed works are discussed below.

Marmion Shaft

The temporary shaft will be located towards the western side of Queen Street opposite the intersection with Marmion Street. Excavations required for its construction, including for the crane and piling platform, will not impact on any known subsurface archaeological remains.

It is possible that unrecorded isolated elements of pre-1900 or early 20th century infrastructure may be present beneath the road surface and affected by the shaft works. If so it may be possible to observe and record them during the initial stages of shaft construction. Any adverse effects are likely to be minor and can be appropriately mitigated through the recording of information relating to the history of the area under an Authority issued by Heritage NZ.

Tunnelling Works, Queen Street

The tunnelling along Queen Street is unlikely to impact on any archaeological remains as it is generally below the level at which any remains would be expected.

Part 6 Works – Marmion Street and White Street

The alignment along Marmion Street and White Street traverses what was a mainly residential area in the 19th and early 20th century. It is possible that remains relating to early residential/commercial occupation in this area, such as wells or backyard rubbish pits, could be present and if so could be exposed and impacted during surface works.

The alignment from the Marmion Shaft along Marmion Street would be excavated using trenchless methods and is below the level at which any remains would be expected. The surface works consist of excavations for the temporary shaft in White Street and trenching within White Street and it is possible that archaeological remains may be affected. However, any adverse effects are likely to be minor and can be appropriately mitigated.

through the recording of information relating to the history of the area under an Authority issued by Heritage NZ.

Network Utility Relocation Works

The works would involve initial potholing (small trenches c.400mm wide and up to 1.5m deep) to confirm the location of network utilities, followed by open trenching (c.1m wide and c.1.5m+ deep) to relocate them. As noted above, there is some potential for isolated subsurface pre-1900 or early 20th century infrastructure or artefact deposits to be present and exposed by these works. If so it would be possible to observe them in the trench profiles and record them. Any adverse effects are likely to be minor and can be appropriately mitigated through the recording of information relating to the history of the area under an Authority issued by Heritage NZ.

Conclusion

Overall, any adverse effects on archaeological values are likely to be minor. If archaeological remains are exposed during the works, the effects can be appropriately mitigated through the recording of information relating to the history of the area under an Authority issued by Heritage NZ.

DISCUSSION AND CONCLUSIONS

Summary of Results

The Part 3 – Part 6 Link of the Queen Street Wastewater Diversion Programme are located in an area that has been highly modified by road construction and maintenance, and services installation. However, previous works within central Auckland road reserves have exposed isolated archaeological features relating to pre-1900 occupation, including elements of early drainage, as well as occasional deposits of historic artefacts or building foundations within streets that have been widened, and early 20th century infrastructure remains. In addition, the route along Marmion Street followed what was a boundary between residential lots in the 19th century prior to 1878. This was also the case for the alignment along White Street, which follows what was the boundary between residential lots in the 19th century and through to the later 20th century. It is therefore possible that remains relating to early residential occupation in this area, such as wells or backyard rubbish pits, could be present and exposed by surface works.

No recorded archaeological sites are present within the Project area.

Māori Cultural Values

This is an assessment of effects on archaeological values and does not include an assessment of effects on Māori cultural values. Such assessments should only be made by Mana Whenua. Māori cultural concerns may encompass a wider range of values than those associated with archaeological sites.

The historical association of the general area with Mana Whenua is evident from the recorded sites, traditional histories and known Māori place names. The nearby Waihorotiu is known to be of cultural significance to Mana Whenua, and its lower extent (north from the Queen Street/Victoria Street intersection) has been scheduled as a Site and Place of Significance to Mana Whenua in the AUP OP.

Limitations

Archaeological sites beneath sealed surfaces in urban environments can rarely be identified prior to being exposed in the course of redevelopment work, and the approach to archaeological assessment is therefore to identify historically recorded activities and assess the potential for archaeological evidence to have survived on the basis of later modifications.

Archaeological Value and Significance

The archaeological value of sites relates mainly to their information potential, that is, the extent to which they can provide evidence relating to local, regional and national history using archaeological investigation techniques, and the research questions to which the site could contribute. The surviving extent, complexity and condition of sites are the main factors in their ability to provide information through archaeological investigation. For example, generally pa are more complex sites and have higher information potential than small midden (unless of early date). Archaeological value also includes contextual (heritage landscape) value. Archaeological sites may also have other historic heritage

values including historical, architectural, technological, cultural, aesthetic, scientific, social, spiritual and traditional values.

If remains are exposed by the proposed works they are likely to consist of isolated finds relating to early residential/commercial settlement (for example, a well or rubbish pits), or early infrastructure elements. These would have some archaeological value based on the information they could provide relating to the nature of 19th/early 20th century settlement in the area.

Effects of the Proposal

The potential effects of the Project on archaeological values have been assessed in the previous section.

The proposed works will have no known effects on archaeological values. There is, however, the potential for subsurface elements of early infrastructure to be affected by the Part 3–Part 6 Link works and for features and deposits relating to early residential/commercial settlement to be affected by works along the Part 6 alignment.

Overall, however, the Project area has been highly modified by road construction and maintenance and the installation of infrastructure, and any archaeological remains affected by the Project are likely to be of limited extent and archaeological value. Any adverse effects on archaeology are therefore likely to be minor. Any observable effects on unrecorded subsurface remains can be appropriately mitigated through information recovery under the archaeological provisions of the HNZPTA (see below).

Resource Management Act 1991 Requirements

Section 6 of the RMA recognises as matters of national importance: ‘the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga’ (S6(e)); and ‘the protection of historic heritage from inappropriate subdivision, use, and development’ (S6(f)).

All persons exercising functions and powers under the RMA are required under Section 6 to recognise and provide for these matters of national importance when ‘managing the use, development and protection of natural and physical resources’. There is a duty to avoid, remedy, or mitigate any adverse effects on the environment arising from an activity (S17), including historic heritage.

Historic heritage is defined (S2) as ‘those natural and physical resources that contribute to an understanding and appreciation of New Zealand’s history and cultures, deriving from any of the following qualities: (i) archaeological; (ii) architectural; (iii) cultural; (iv) historic; (v) scientific; (vi) technological’. Historic heritage includes: ‘(i) historic sites, structures, places, and areas; (ii) archaeological sites; (iii) sites of significance to Māori, including wahi tapu; (iv) surroundings associated with the natural and physical resources’.

Regional, district and local plans contain sections that help to identify, protect and manage archaeological and other heritage sites. The plans are prepared under the provisions of the RMA. The Auckland Unitary Plan Operative in Part 2016 (AUP OP) is relevant to the proposed activity.

This assessment has noted a scheduled heritage building immediately adjacent to the project: the Auckland Sunday School Union Building at 323-327 Queen Street (AUP

02045). Any effects on built heritage, including vibration effects during construction, are being assessed separately and are outside the scope of this report.

This assessment has established that the proposed activity will have no known effects on subsurface archaeological remains but has the potential to impact on unrecorded subsurface remains relating to 19th and early 20th century residential/commercial occupation and infrastructure. However, the Project area has been highly modified, and so any remains exposed are likely to be of limited extent and archaeological/historic heritage significance.

The discovery of previously unidentified archaeological remains is provided for under the Accidental Discovery Rule (E12.6.1) set out in the AUP OP. Under the Accidental Discovery Rule works must cease within 20m of the discovery and the Council, Heritage NZ, Mana Whenua and (in the case of human remains) NZ Police must be informed. The Rule would no longer apply in respect to archaeological sites if an Authority from Heritage NZ was in place.

Overall, any adverse effects on archaeology are likely to be minor and can be appropriately mitigated through archaeological investigation and recording to recover information relating to the history of the area. This will require an Authority under the HNZPTA (see below).

Heritage New Zealand Pouhere Taonga Act 2014 Requirements

In addition to any requirements under the RMA, the HNZPTA protects all archaeological sites whether recorded or not, and they may not be damaged or destroyed unless an Authority to modify an archaeological site has been issued by Heritage NZ (Section 42).

An archaeological site is defined by the HNZPTA Section 6 as follows:

‘archaeological site means, subject to section 42(3), –

(a) any place in New Zealand, including any building or structure (or part of a building or structure) that –

(i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and

(ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and

(b) includes a site for which a declaration is made under section 43(1)²

Authorities to modify archaeological sites can be applied for either in respect to archaeological sites within a specified area of land (Section 44(a)), or to modify a specific archaeological site where the effects will be no more than minor (Section 44(b)), or for the purpose of conducting a scientific investigation (Section 44(c)). Applications that relate to sites of Māori interest require consultation with (and in the case of scientific investigations the consent of) the appropriate iwi or hapu and are subject to the recommendations of the Māori Heritage Council of Heritage NZ. In addition, an application may be made to carry

² Under Section 42(3) an Authority is not required to permit work on a pre-1900 building unless the building is to be demolished. Under Section 43(1) a place post-dating 1900 (including the site of a wreck that occurred after 1900) that could provide ‘significant evidence relating to the historical and cultural heritage of New Zealand’ can be declared by Heritage NZ to be an archaeological site.

out an exploratory investigation of any site or locality under Section 56, to confirm the presence, extent and nature of a site or suspected site.

As the proposed potholing, open cut trenching, Marmion Shaft excavations (including for the crane and piling platform) and White Street Shaft excavations have the potential to expose unidentified subsurface archaeological remains, consideration could be given to applying for an archaeological Authority under Section 44(a) of the HNZPTA as a precaution. This should be obtained before any earthworks are carried out. The conditions of the Authority are likely to include archaeological monitoring of preliminary earthworks, and procedures for recording any archaeological evidence before it is modified or destroyed. This approach would have the advantage of allowing any archaeology uncovered during the Project works to be dealt with immediately, avoiding delays while an Authority is applied for and processed.

Conclusions

The Part 3–Part 6 Link and Part 6 alignment of the Queen Street Wastewater Diversion Programme is located in an area that has been highly modified by road construction and maintenance and services installation. The proposed works will not impact on any known archaeological sites, but have the potential to expose unrecorded archaeological features associated with 19th century residential/commercial settlement, as the Marmion Street and White Street alignments cut through what were early residential allotments prior to the creation of these roads; while excavations along Queen Street also have some potential to expose early infrastructure elements or rubbish deposits, as has been noted elsewhere in central Auckland road reserves.

Overall, any archaeological remains affected by the Project are likely to be of limited extent and archaeological value, and any adverse effects are therefore likely to be minor. Any effects on archaeological remains can be appropriately mitigated through information recovery under the archaeological provisions of the HNZPTA.

RECOMMENDATIONS

- Any adverse effects on archaeological remains should be appropriately mitigated through the recovery of information relating to the history of the area under the provisions of the HNZPTA.
- Because there is potential to expose unrecorded subsurface archaeological remains, consideration should be given to applying for an Authority under Section 44(a) of the HNZPTA as a precaution. This would establish appropriate procedures for the management of any archaeological remains discovered, reducing the potential for delays during the construction process.
- Surface works should be monitored by a qualified archaeologist in accordance with the conditions of an archaeological Authority issued by Heritage NZ to establish whether any archaeological remains are present.
- Any archaeological remains affected by the Part 3–Part 6 Link and Part 6 alignment works should be investigated, recorded and sampled in accordance with the conditions of an Authority issued by Heritage NZ.
- If no Authority has been obtained and subsurface archaeological evidence should be unearthed during construction, or if human remains should be discovered, the Accidental Discovery Rule (section E.12.6.1 of the AUP OP) must be followed. This requires that work ceases within 20m of the discovery and notification to the Auckland Council, Heritage NZ, Mana Whenua and (in the case of human remains) the NZ Police, who will determine the actions required.
- Mana Whenua should be consulted regarding the proposed works and the potential archaeological effects.

BIBLIOGRAPHY

- Best, S. 1992. *The Queen Street Gaol: Auckland's First Courthouse, Common Gaol and House of Correction (Site R11/1559)*. Auckland Conservancy Historic Resources Series 2. Auckland, Department of Conservation.
- Best, S. 1998. The Myers Park Excavations. Dam Site Wall (R11/2017). Final Archaeological Report. Prepared for Metrowater.
- Best, S. and D. Harlow. 2011. Archaeology and History of the Q Theatre Site. Final Archaeological Report to Q Theatre Trust & NZHPT in fulfilment of Authority No. 2020/64.
- Best, S., D. Prince and R. Clough. 1999. Excavations at the Queen St/Fort Sts & Swanson Sts Intersections, Auckland. Clough & Associates report prepared for Harbour Edge Development Group.
- Bickler, S. November 2014. Auckland Domain Orakei Main Sewer Upgrade: Interim and Final Report in Fulfilment of Heritage NZ Authority 2013/526. Clough & Associates report prepared for Watercare Services Limited.
- Bickler, S.H., B. Baquié, R. Clough, T. Mace, D. Prince, M. Plowman and M. Turner. 2005. Excavations at Britomart, Auckland (R11/1379). Clough & Associates Monograph Series No. 1. Excavation Report for Auckland City Council.
- Brassey, R.J.N. 1990. *The History and Archaeology of the Browns Mill Site, 15-17 Durham Lane*. Science and Research Internal Report 77. Auckland: Department of Conservation.
- Brassey, R. and S. Macready. *The History and Archaeology of the Victoria Hotel, Fort St, Auckland (Site R11/1530)*. Auckland Conservancy Historic Resources Series 10. Auckland, Department of Conservation.
- Bush, G.W.A. 1971. *Decently and in Order. The Government of the City of Auckland 1840-1971*. The Centennial History of the Auckland City Council. Auckland & London: Collins.
- Clough-Macready, T., and S. Macready. 2022. City Rail Link: Annual Archaeological Report for Aotea Station Works, 1 June 2020 – 31 May 2022. Clough & Associates report prepared in accordance with Heritage NZ Authority #2017/793 for Auckland Transport.
- Eggleton, T. August-September 2019. Underground Void Investigation Greys Ave Carpark. Briton Detection and Inspection report for Auckland Council.
- Felgate, M. (ed.). 1998. His Majesty's Theatre Site Excavations (R11/1624): Final Archaeological Report. Volume 1. Report prepared for Pacific Dynasty Group Ltd., Auckland.
- Harding, L., J. Low, K. Toth, B. Jones, H. Cohen-Smith and G. Farley. 2023. Myers Park Underpass Upgrade: Final Archaeological Report Prepared in Accordance with HNZPT Authority No. 2022/358. Clough & Associates report for Auckland Council.
- Heritage NZ. 2019. Writing Archaeological Assessments. Archaeological Guidelines Series No. 2.
- Judge, C., B. Pick, E. Ussher and S. Macready. 2012. Darby And Elliott Streets Streetscape Upgrades: Final Archaeological Monitoring Report (Site R11/2734) Prepared in Fulfilment of NZHPT Authority No. 2010/444. Clough & Associates report prepared for Auckland Council.
- Kelly, J., and J. Surridge. 1990. Map of the Tamaki Isthmus with Māori Place Names Redrawn from Tamaki Makau-Rau by Leslie Kelly. Department of Geography, Auckland University.
- Larsen, B., W. Maguire, G. Farley and R. Clough. 2017. Queens Square Development, 438 Queen Street, 2-6 Waverley Street and 7 Marmion Street, Auckland: Final Archaeological Report in Accordance with HNZPT Authority No. 2015/1221. Clough & Associates report prepared for Bayswater Trustee Company No. 1 Limited.
- Low, J., and S. Bickler. 2008. Swanson Street Upgrade (Stage 1): Archaeological Monitoring. Report in Fulfilment of NZHPT Authority No. 2008/56. Clough & Associates report prepared for Auckland City Council.

- Low, J., J. Grant, T. Clough-Macready, S. Macready, A. Apfel and J. Brown. 2021. City Rail Link: Annual Archaeological Report for Aotea Station Works, 1 June 2020 – 31 May 2021. Clough & Associates report prepared in accordance with Heritage NZ Authority #2017/793 for Auckland Transport.
- Macready, S. March 2024 (updated from August 2023). Queen Street Wastewater Diversion Part 3: Archaeological Assessment. Clough & Associates report prepared for WSP New Zealand and Watercare Services Ltd.
- Macready, S., Z. Burnett and R. Clough. 2016. Auckland City Rail Link. Package 2 Aotea Station to North Auckland Line: Archaeological Assessment for HNZPT Authority Application. Clough & Associates report prepared for Auckland Transport.
- Macready, S., and J. Robinson. 1990. Slums and Self-Improvement. The History and Archaeology of the Mechanics Institute, Auckland, and its Chancery Street Neighbourhood. Vol. I: The Site (R11/1589). Science and Research Internal Report 91. Auckland, Department of Conservation.
- Macready, S. and K. Roth. September 2024. Queen Street Wastewater Diversion Mayoral Drive Alignment: Archaeological Assessment. Clough & Associates report prepared for WSP New Zealand and Watercare Services Ltd.
- Platts, U. 1971. *The Lively Capital: Auckland 1840-1865*. Auckland: Avon Fine Prints.
- Simmons, D. 1987. Maori Auckland, including the Maori Place Names of Auckland Collected by George Graham. Gordon Ell, The Bush Press.
- Stone, R.C.J. 2001. *From Tamaki-makau-rau to Auckland*. Auckland: Auckland University Press.

City Maps:

- Vercoe, J. and E.W. Harding. 1866. Map of 'City of Auckland, New Zealand'. Auckland Libraries Heritage Collections, NZ Map 18.

Heritage Databases:

- Auckland Council Cultural Heritage Inventory, accessed at <http://maps.aucklandcouncil.govt.nz> and <https://chi.org.nz>
- New Zealand Archaeological Association ArchSite Database, accessed at <http://www.archsite.org.nz>
- New Zealand Heritage List, accessed at <http://www.historic.org.nz>
- Auckland Unitary Plan Operative in Part 2016, accessed at <http://unitaryplan.aucklandcouncil.govt.nz/>