

# ARCHAEOLOGICAL ASSESSMENT

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ROTOKAURI ARTERIAL NETWORK  
HAMILTON

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# ARCHAEOLOGICAL ASSESSMENT ROTOKAURI ARTERIAL NETWORK

HAMILTON CITY COUNCIL

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## EXECUTIVE SUMMARY

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BECA, on behalf of Hamilton City Council (HCC), commissioned Sian Keith Archaeology Ltd (SKA) to provide an archaeological assessment of the proposed Rotokauri Arterial Network, which forms part of the Rotokauri Structure Plan. This assessment is required to accompany any necessary resource consents, and can also be used to form the basis of an application to Heritage New Zealand Pouhere Taonga (HNZPT) for an archaeological authority, should the latter be required.

The assessment has involved a review of historic documents including aerial photographs, historic maps, archaeological data, and consultant's reports for the wider area. A review of the relevant council plans has been undertaken, and a field visit to the project site has been made.

Documentary sources are limited for this area of the Waikato Basin, lying between the two geographical focal points of human occupation of the Waikato and Waipā Rivers. The research and fieldwork for this assessment has identified that the Rotokauri Arterials footprint has no known archaeological values. In the wider landscape there is evidence of Māori occupation and use prior to 1900, including four recorded pā sites.

Based on the available published information, and the results of the recent fieldwork, it is concluded in this report that there are no known archaeological sites, features or deposits which will be encountered during the proposed works. The risks for encountering pre1900 AD evidence which could be classed as an archaeological site based on the criteria in the Heritage NZ Pouhere Taonga Act 2014 are currently considered to be very low.

It is recommended in this report that, based on the current information, there are no known reasons to alter the current proposal based on archaeological values. There is no known requirement to apply to HNZPT for an authority to modify or destroy a potential archaeological site. Affected tangata whenua should be consulted in relation to their traditional history of this area and cultural values associated with this land.

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## 1. INTRODUCTION

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### 1.1. PURPOSE & SCOPE

Beca, on behalf of Hamilton City Council (HCC), commissioned Sian Keith Archaeology Ltd (SKA) to provide an archaeological assessment of the Rotokauri Arterial Network proposal. This document is an assessment of the archaeological values of the proposal and the effects of the proposal and its associated earthworks on those values. The assessment has focussed on a review of archaeological potential within, and immediately surrounding the project area. This assessment is required to accompany any necessary resource consents, and can also form the basis of an application to Heritage New Zealand Pouhere Taonga (HNZPT) for an archaeological authority, should the latter be required.

### 1.2. PROJECT DESCRIPTION

This Rotokauri Arterial Network Notice of Requirement (2022) has been prepared to support a Notice of Requirement (NoR) being prepared by Beca Limited (Beca) on behalf of Hamilton City Council (HCC) as a requiring authority pursuant to section 167 of the Resource Management Act 1991 (RMA). HCC requires land to be designated in Hamilton City for the construction and operation of the 'Rotokauri Arterial Network' (the designation).

The NoR is seeking the designation of a key transportation network and strategic infrastructure corridor servicing the Rotokauri Growth Cell. The designation will enable:

- Land associated with key corridors to be secured by HCC
- Future construction of the infrastructure networks
- Facilitate planned future urban growth within the Rotokauri area.

Rotokauri is situated to the northwest of Hamilton as shown in Figure 1 below. Rotokauri is identified as one of four areas of future growth for Hamilton City. Future growth has been earmarked for the Rotokauri area since 1989 and included as a 'structure plan area', with the Rotokauri Structure Plan (RSP) notation included in the Hamilton District Plan since 2005.



Figure 1: Rotokauri Development Location Plan (Source Hamilton City Council Urban Growth Strategy)

The designation of the strategic transportation and infrastructure corridor is to occur in a way that:

- Responds to the RSP context,
- Meets the vision for development in Rotokauri as encapsulated within the RSP,
- Responds to an increasingly urgent need to secure an infrastructure corridor.

The designation of the strategic transportation and infrastructure corridor will in the short term protect the corridor network from ‘build-out’ by private developments along the preferred routes. With the long-term purpose of facilitating an integrated transport network.

Development of Rotokauri in the southern section is underway with residential subdivision and development occurring in areas that can be serviced from existing networks. To date the developments have considered the RSP details and is generally consistent with the anticipated level of development with the routes for key connections being provided. Master planning and development pressures will continue to create spatial pressures and therefore necessitates route protection as soon as possible.

The Rotokauri North Structure Plan area also proposes 2,000 dwellings and a neighbourhood commercial centre in the north of the RSP area.

The Rotokauri arterial network designation as depicted in Figure 2 below covers a combined 5.8km length of corridors, including the design of a new 5.2km corridor relating to greenfield area which will support future growth and development in Rotokauri.

- Proposed major arterial – approx. 0.7km on existing roads (purple);
- Proposed minor arterials – approx. 3.8km (red);
- Proposed collector roads – approx. 0.7km (yellow).

This includes a north-south corridor that commences in the north at the State Highway 39 (SH39) and Koura Drive roundabout, and proceeds in a south-eastern direction to the future intersection with Te Wetini Drive.

There are also two east-west corridors (Te Kowhai East Road and Chalmers Road) that align with existing grade separated underpasses under State Highway 1 and link the Rotokauri growth cell to key transport destinations, and the wider Hamilton City transportation network. Arthur Porter Drive is a strategic local road (collector) connection which with an enhanced connection between two existing portions of the corridor to better connect the transportation network in this location.

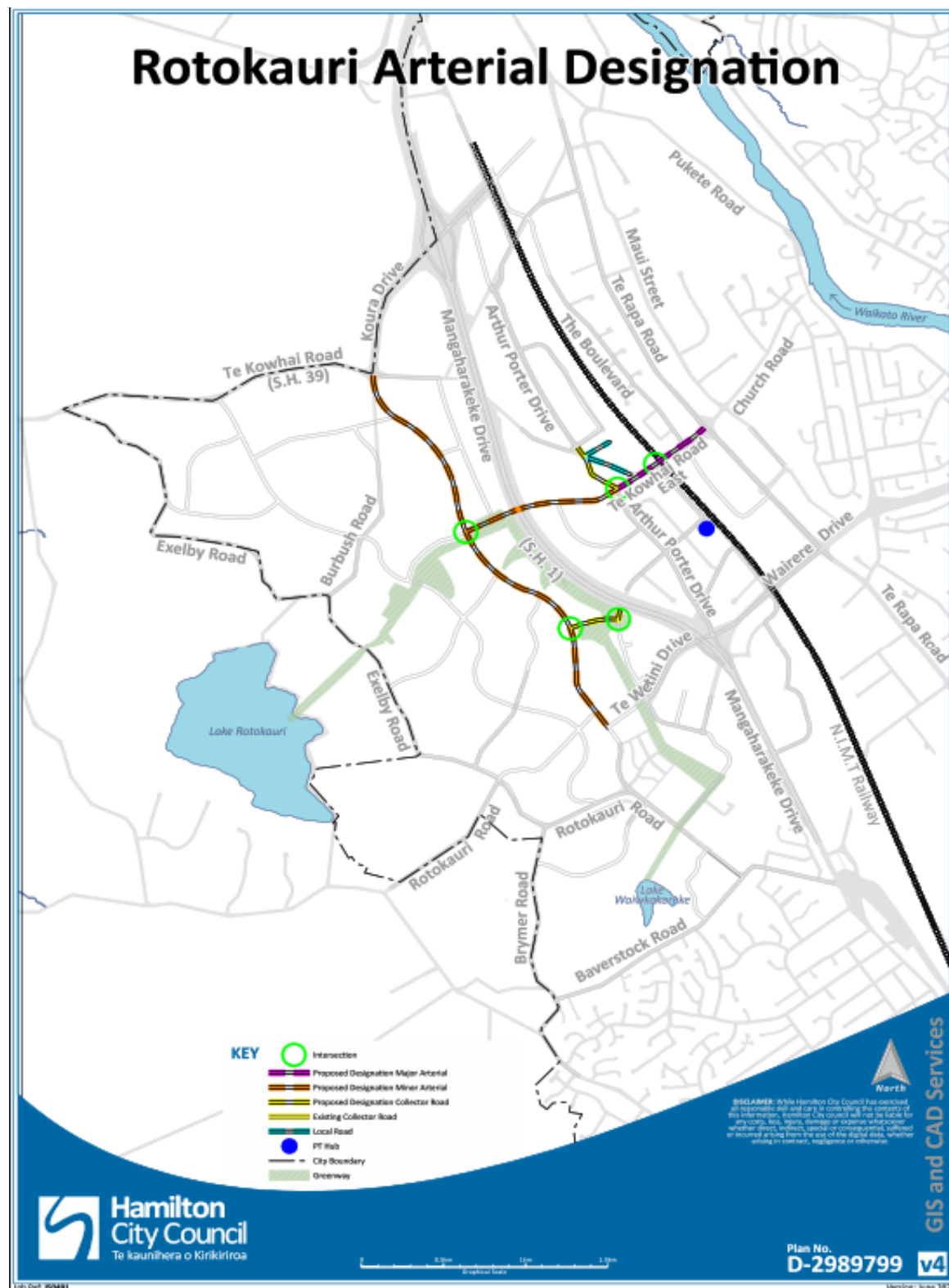


Figure 2: Proposed Rotokauri Arterial Network Source: Hamilton City



The proposed design of the transport network has a strong urban design focus contributing to achieving HCC's strategic objectives for land use planning, urban growth infrastructure provision and economic development. These include those core aspects associated with the primary use of multimodal transportation and secondary functions of a strategic network designation including associated infrastructure provisions and how they affect the spatial requirements of the land to be designated. Broadly, these include multimodal transportation facilities, bus stops, parking, spatial provisions for utilities network including three waters infrastructure, connections to recreational spaces and small amenity areas where there is a transition in land-use or context.

They also include associated stormwater facilities including rain gardens and treatment swales directly associated with the road that would be needed to provide an appropriate level of treatment and allow the construction of the network to give effect to the designation. Some elements of the broader Rotokauri scheme overlap with the proposed designation for the Stormwater areas with specific wetland treatment areas to be included within the designated corridor.

There is an existing HCC designation already in effect as it relates to the Rotokauri Greenway Corridor which is an identified precursor to any development of the land within the RSP or of the strategic arterial networks which are the subject of the NoR. The Rotokauri Arterial Network will build on the Greenway Project with stormwater facilities intended to work in conjunction with the Greenway and provide modal connections which enhance the identified recreation functions associated with the Greenway. Further descriptions and details of the Rotokauri Greenway and the interfacing aspects relevant to the proposal are outlined in the NoR document.

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## 2. STATUTORY REQUIREMENTS

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There are two main pieces of legislation in New Zealand that control work affecting archaeological sites. These are the *Heritage New Zealand Pouhere Taonga Act 2014* (HNZPTA) and the *Resource Management Act 1991* (RMA).

### 2.1. HERITAGE NZ POUHERE TAONGA ACT 2014

The purpose of the HNZPTA is to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand (HNZPTA section 3). Emphasis is placed on avoiding effects on heritage.

The HNZPTA provides blanket protection to all archaeological sites meeting the definition in the Act, whether they are recorded or not. Protection and management of sites is managed by the archaeological authority process, administered by Heritage New Zealand Pouhere Taonga (HNZPT). It is illegal to destroy, or modify archaeological sites without an authority to do so from HNZPT.

The HNZPTA 2014 (s6) defines an archaeological site as:

- (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 that 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) of the Act<sup>1</sup>.

Any person who intends carrying out work that may modify or destroy an archaeological site, or to investigate an archaeological site using invasive archaeological techniques, must first obtain an authority from HNZPT. The process applies to sites on land of all tenure including private, public and designated land. The HNZPTA contains penalties for unauthorised site damage.

The archaeological authority process applies to all archaeological sites that fit the HNZPTA definition regardless of whether the site is recorded in the NZAA Site Recording Scheme or registered with HNZPT; or if the site only becomes known about as a result of ground disturbance; and/or the activity is permitted under a district or regional plan, or a resource or building consent has been granted, or the ground is subject to a designation.

The HNZPTA replaced the *Historic Places Act 1993* (HPA) in May 2014.

HNZPT also maintain the New Zealand Heritage List/Rārangī Kōrero (The List). The List can include archaeological sites. The purpose of The List is to inform members of the public about such places, and to assist with their protection under the RMA.

It is possible that archaeological sites, as defined in the HNZPTA, may be disturbed by this project. Any archaeological sites identified during the ground works at this site will be protected under the HNZPTA, and their discovery may pose delays to works unless an archaeological authority has been issued that allows the work.

## 2.2. THE RESOURCE MANAGEMENT ACT 1991

The *Resource Management Act 1991* (RMA) requires City, District and Regional Councils to manage the use, development, and protection of natural and physical resources in a way that provides for the wellbeing of today's communities while sustaining the potential of natural and physical resources for future generations. The protection of historic heritage from inappropriate subdivision, use, and development is identified as a matter of national importance (section 6f).

Historic heritage is defined as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from archaeological, architectural, cultural, historic, scientific, or technological qualities.

Historic heritage includes:

- historic sites, structures, places, and areas;
- archaeological sites;
- sites of significance to Māori, including wahi tapu;
- surroundings associated with the natural and physical resources (RMA section 2).

These categories are not mutually exclusive, and some archaeological sites may include above ground structures or may also be places that are of significance to Māori.

Where resource consent is required for any activity the assessment of effects is required to address cultural and historic heritage matters (RMA 4th Schedule).

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<sup>1</sup> Such declarations usually pertain to important post-1900 remains with archaeological values.

### 2.3. STATUTORY PLANNING INSTRUMENTS

The study area falls within the boundaries of Hamilton City Council. The Hamilton City Plan is relevant to the project.

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### 3. METHODOLOGY

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This assessment has used the following sources to provide a historical and archaeological background of the project area:

- The NZAA's online database ArchSite
- The Hamilton City Plan
- Historic LINZ maps using the program QuickMaps
- Historic aerial photographs
- Historic plans
- Previous consultant's reports.

A site visit has been undertaken by Siân Keith.

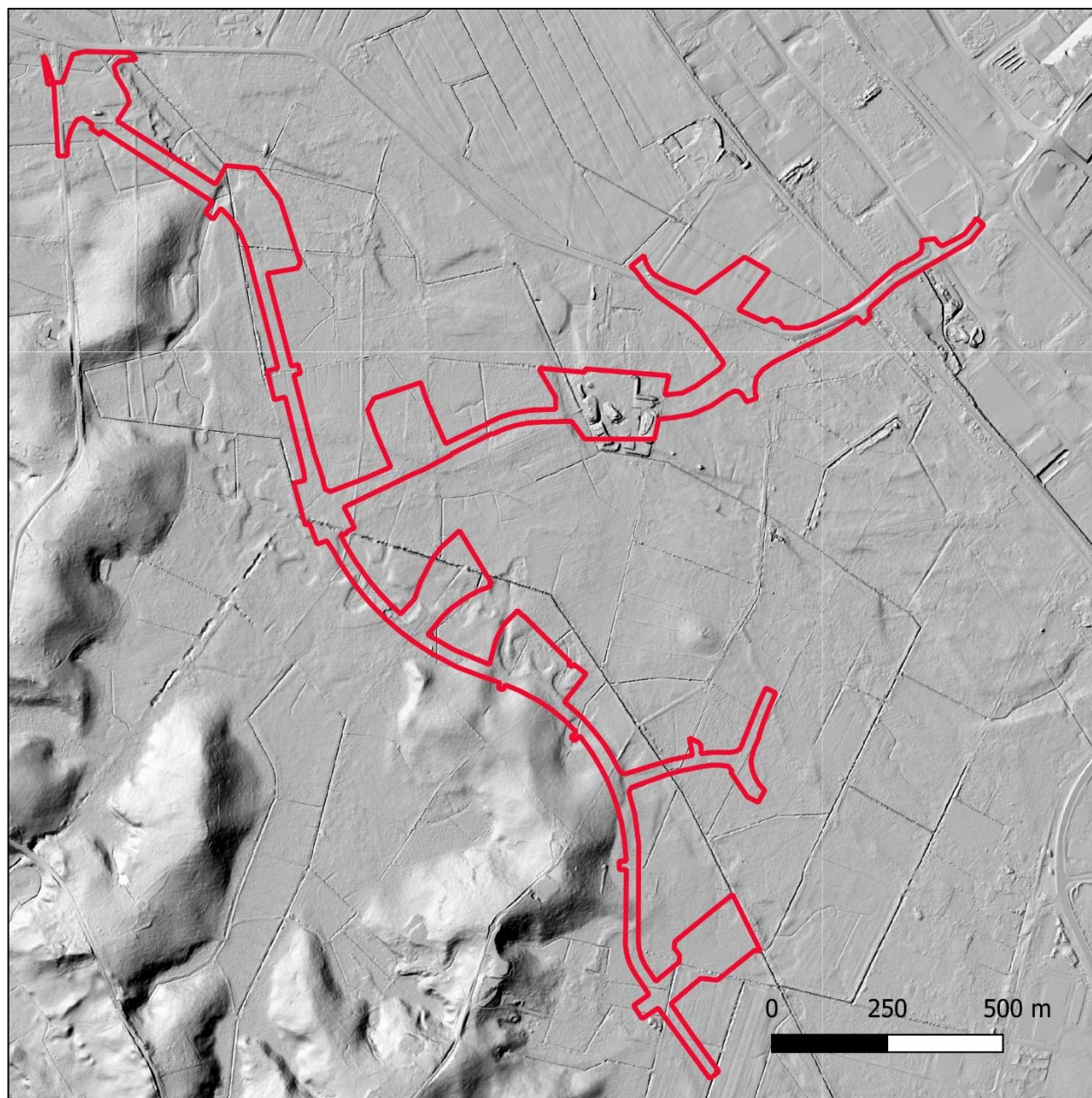
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### 4. PHYSICAL ENVIRONMENT AND SETTING

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The project is located between the Waikato and Waipā rivers. The surrounding landscape consists of gently sloping to flat lowland areas, surrounded by low lying hills. LiDAR imagery in Figure 3 shows the project footprint generally in the low-lying land skirting around the eastern edge of low-lying hills.

Soil maps indicate that the project area predominantly comprises Kaipaki Series peaty loam and loamy peat with pockets of Horotiu Series sand and sandy-loam, Te Kowhai Series silt loam and clay loam, Te Rapa peaty-sand, and Hamilton Series clay loam represented (Figure 4). The majority of soils represented are not those known to be favourable for traditional Māori horticultural practices. The Tamahere gravelly sands (annotated in Figure 4 as having been mapped in 1935) are those known to have been modified by Māori for gardening practices. None are shown within the footprint, the closest of these soils known are recorded at the far east end of the project just south of the Church Road/ Te Rapa roundabout (arrowed on Figure 4). This is significant because evidence for Māori horticultural sites are a key indicator of archaeological activity in the wider Hamilton City environment.



*Figure 3: LiDAR showing general project area (red outline).*



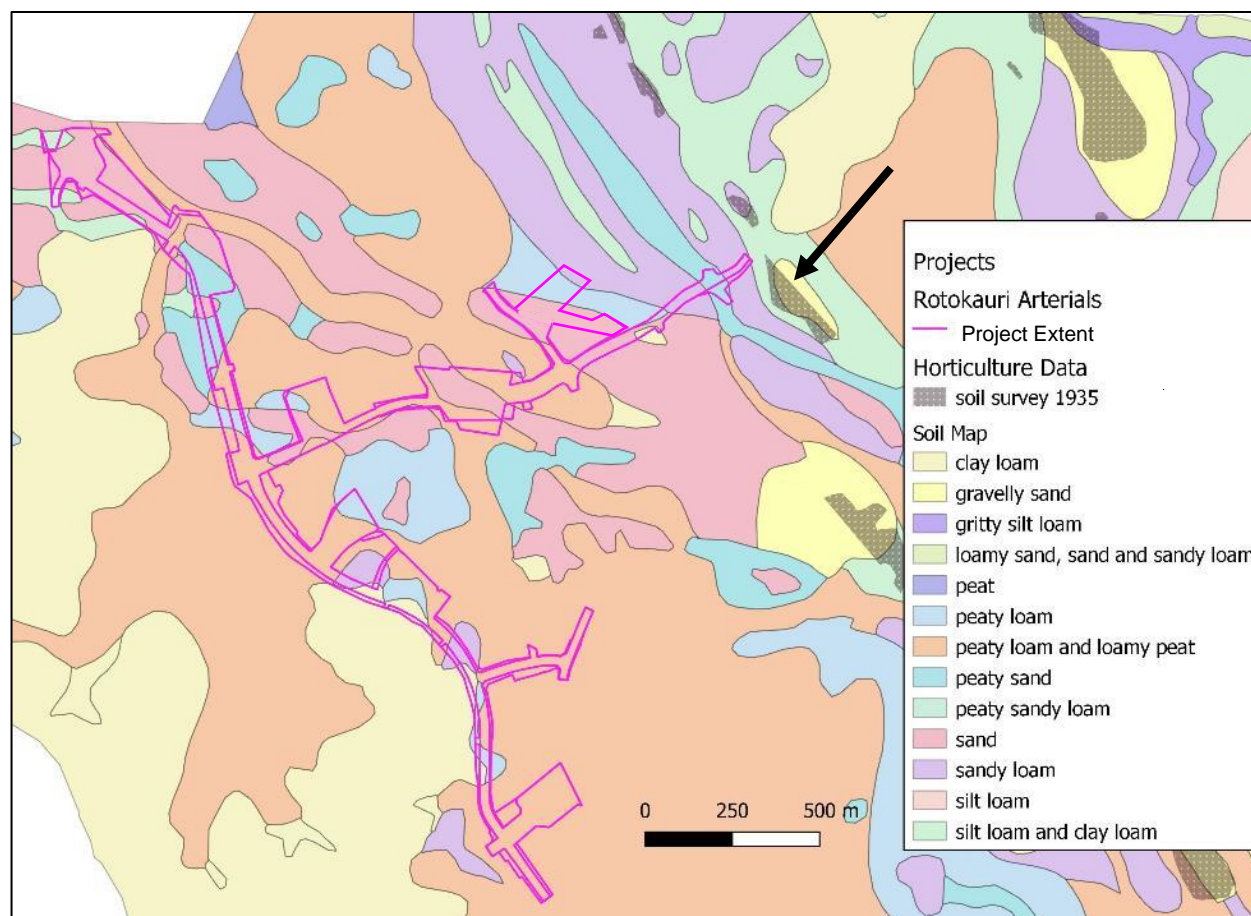


Figure 4: Soil Map of Hamilton City. General project area indicated (arrow denotes closest Tamabere series 'gravelly sand' to project).

## 5. HISTORICAL BACKGROUND

### 5.1. MAORI ERA

Traditional history states that Tainui first settled the Waikato at Kāwhia. From Kāwhia Tainui gradually spread along the coastlines and major navigable waterways settling throughout favourable locations of the Waikato.

Traditional records provide a rich history of Māori occupation in the Waikato providing both detailed whakapapa and records of settlement sites. Gaps in the recorded information can be added to through archaeological work, especially for land areas and/or activities which are not fully detailed in historic accounts. For instance archaeological investigations and scientific analysis have provided more detail on the areas, methods, and dates for the horticultural activities, and associated domestic settlements.

The inland Waikato had favourable growing conditions for kūmara, and good river access from Port Waikato into the basin via both the Waikato and Waipā rivers. There is however limited evidence for access to coastal resources in the archaeological record. For the inland Waikato, the pre-European economy appears to have been based mainly on growing staple food crops such as kūmara. The margins of the Waipā and Waikato rivers and their tributaries are identified as the main areas where pre-European Māori garden complexes are concentrated.

The archaeological record for the current study area does not provide strong evidence that this was a focussed area for human settlement within that inland basin. However, it is situated between the two main waterways and the inland lakes of Rotokauri and Waiwhakareke<sup>2</sup> to the west would have provided wetland resources. Simmons (2003) notes that areas away from the Waipā were used for foraging, including eeling. Citing Norris (1956, 7) she describes how Benjamin Yates Ashwell, the resident missionary at Taupiri Mission Station, was asked by Māori on the Waipā to try and prevent a conflict over land and eel fisheries at Rotokauri between two tribes. A contemporary newspaper article also provides some insight into the use of the lake by Māori, stating that the Rotokauri stream “had been dammed up by the natives for eel fishing years before the country was settled”<sup>3</sup>.

The Waiwhakareke Heritage Park Management Plan (WHMP) provides the following detail regarding Māori occupation of the inland lakes and specific detail of Rotokauri:

There was a famed, unnamed walking track that followed along what is now Brymer Road. This track provided overland access between the Waikato and Waipā Rivers by travelling along the hill ranges to the north where the Hamilton Zoo is now sited. The zoo site is named Te Maro O Rangitara... an ancient ancestor who lived in this area. The walking track continued around the northern shore line margins of Rotokauri (Lake) and on to the Te Ohote stream .... This supply route enabled ease of communication and access to stone resources on the west coast for implements and to other settlements along the Waipā River... (Waiwhakareke) was primarily known as a food gathering place for local hapu on brief expeditions gathering tuna (eels), ducks, and parohe (native trout) ...<sup>4</sup>

Figure 5, is a sketch plan dated to 1864, it illustrates a track passing between the Waikato and Waipā rivers traversing between swampland and to the south of Rotokauri (lake). Paretutaki Hayward has stated that this is the track named Te Ara o Karoro, stating also that there was a pā and kāinga by the same name, that a satellite pā was located at modern day Brymer Road and an urupā, on Newcastle Road (Hayward 2017). Te Ara o Karoro track commenced at Pehihoukura (east bank of the Waipa River at Whatawhata) to its terminus at Te Rapa Pā (ibid). The exact location of the pā, kāinga, and urupā are not given.

The WHMP also details that the land was shared by three local hapu, Ngāti Koura, Ngāti Ruru and Ngāti Ngamurikaitaua, and that they lived on the shore margins of Rotokauri and occupied a pā there named Te Uhi during the 1840s.<sup>5</sup>

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<sup>2</sup> also known as Horseshoe Lake

<sup>3</sup> New Zealand Herald, Volume XXVII, Issue 8256, 15 May 1890

<sup>4</sup> <http://www.hamilton.govt.nz/our-city/parks/parksandgardens/Documents/Waiwhakareke%20Natural%20Heritage%20Park%20Management%20Plan%20-%20Operative%20-%20August%202011.pdf> (HCC 2011 WHMP)

<sup>5</sup> Te Uhi Pa is further discussed by Hayward and Samuels (2015). <https://www.scribd.com/document/342571281/he-koronga-matua-na-puhaanga-ngati-mahanga-the-lands-of-hamilton-west>



Figure 5: Part of Sketch Map of the Country lying between the Waipa and Waikato Rivers shewing the Māori positions of Pah te Rangi and Piko Piko" (c. 1864). General study area highlighted. The map indicates a track between the Waipa and Waikato Rivers (note that the plan is oriented with north at the bottom of the page).<sup>6</sup>

## 5.2. EUROPEAN ERA

According to the accounts of Ngāti Wairere, the first European to have passed through the Hamilton West area was during the late 1820s and named Korehako. It is believed that he was captured by Ngāti Koura at Aotea harbour and was brought inland to live at Kirikiriroa Pā. In the 1830s Edward Meurant arrived in the area, he was a trader in flaxes and gum to Europeans and married Te Rangikauwau of Ngāti Koura. They had a settlement on the banks of the Waipā River near the Te Ohote Stream.<sup>7</sup>

Reports from European travellers passing through the inland Waikato in the 1850s and 1860s mention the growing of crops such as maize, wheat potatoes and kūmara (Gumbley and Higham 2000: 6). These reports detail Māori farming European-introduced crops, however there is thought to have been little influence from European settlers during this time. Simmons (2003) (citing Norris, 1956) refers to the presence of a European trader at Te Kowhai, who bought pigs from local Māori, which after being salted and dried were then on-sold to Auckland. Reverend Ashwell is recorded as orchestrating some of the huge land clearances that many Christian missionaries in the greater area undertook. Ancient forest reserves were burnt to the ground to make way for agriculture. This is said to have damaged the natural resource based commercial trade that Māori undertook prior to 1860.<sup>8</sup>

Rotokauri does not appear in historic newspaper titles until the 1880s, at which time the main focus is on Rotokauri Road, its associated bridges and its development. Interest is mainly focused on connecting to Whatawhata and on to Raglan. Later, into the early 1900s, articles and advertisements are concerned with the land and drainage issues through the suburb.<sup>9</sup>

The current project passes over the North Island Main Trunk (NIMT). This is the main railway line connecting Wellington with Auckland. The line started in Auckland where it opened in 1873, it was extended to

<sup>6</sup> <http://digital.lib.waikato.ac.nz/nzc/map/img5/003.jpg>

<sup>7</sup> HCC 2011 WHMP

<sup>8</sup> HCC 2011 WHMP

<sup>9</sup> <https://paperspast.natlib.govt.nz/newspapers>

Frankton by December 1877, and to Te Awamutu in 1880. A 1914 Act authorised several improvements along the line which included track doubling on the Horotiu-Frankton section. The Te Rapa Station was closed in 1970. The central section from Te Rapa to Palmerston North was electrified at 25 kV AC between 1984 and 1988 as part of the Think Big government energy programme.<sup>10</sup>

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## 6. RECORDED SITES, PREVIOUS SURVEYS AND INVESTIGATIONS

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### 6.1. THE LIST

No items have been identified on The List, either within or immediately surrounding the project area.

### 6.2. HAMILTON CITY DISTRICT PLAN

No sites of cultural or archaeological interest within the project area are identified in the Hamilton City District Plan.

### 6.3. ARCHSITE

Figure 6 identifies recorded archaeological sites within, and immediately surrounding the project area. Table 1 summarises the archaeological sites that are recorded within approximately 2km of the project area. The majority of recorded sites in the inland Waikato are located along waterways, principally the Waikato and Waipā Rivers, but the region has not been systematically surveyed for archaeological sites. The recorded sites tend to be biased towards those that are easily visible such as pā sites, many of which are recorded generally situated on high points overlooking the rivers; or because they have been located as a result of private and commercial development. This is reflected in the small number of recorded sites in the wider study area, most of which were recorded in the 1960s - 70s.

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<sup>10</sup>[https://en.wikipedia.org/wiki/North\\_Island\\_Main\\_Trunk#/media/File:Map\\_of\\_North\\_Island\\_Main\\_Trunk\\_Line,\\_March\\_2016.png](https://en.wikipedia.org/wiki/North_Island_Main_Trunk#/media/File:Map_of_North_Island_Main_Trunk_Line,_March_2016.png)



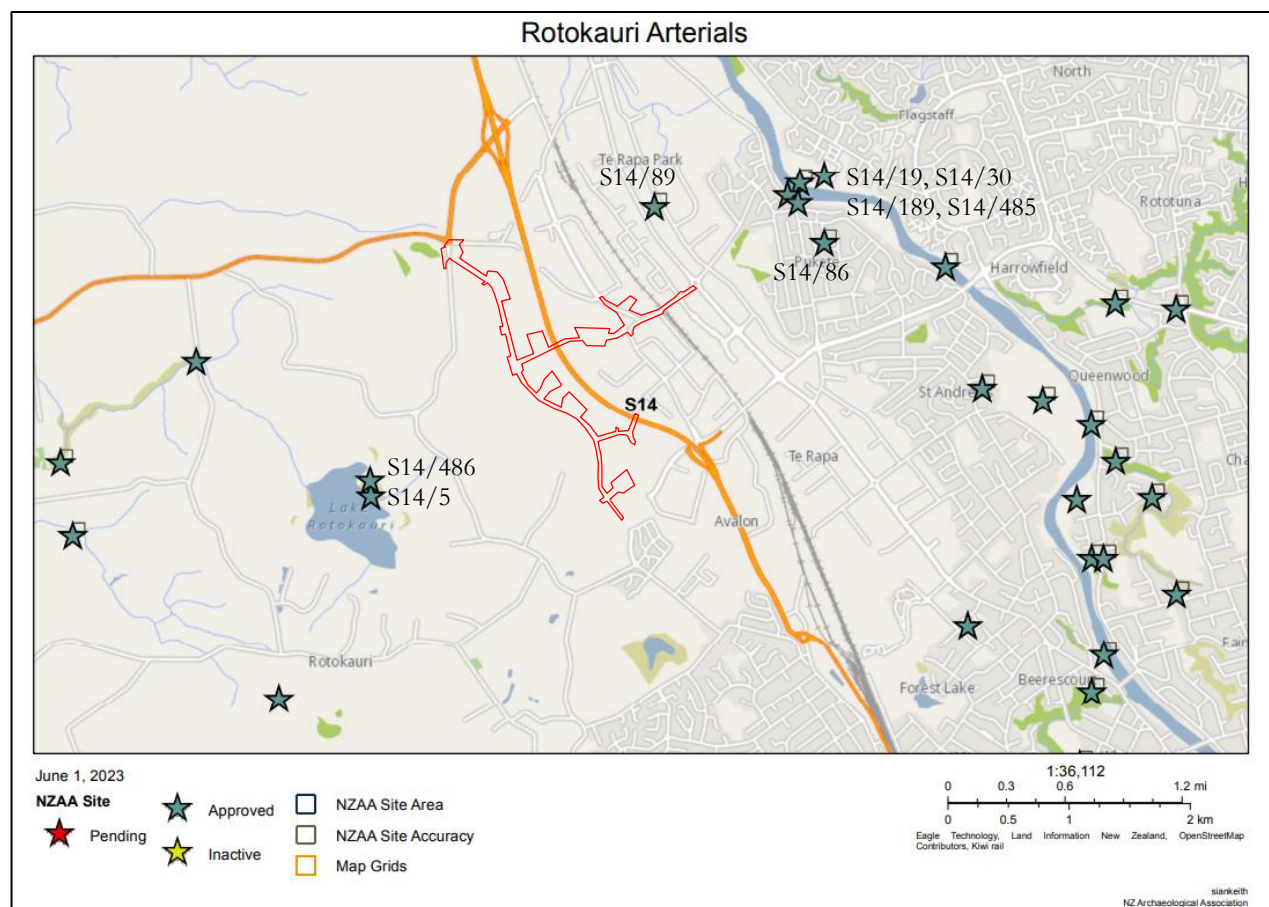


Figure 6: ArchSite map showing recorded archaeological sites labelled within 2km of the project area (red lines).

Table 1: List of recorded archaeological sites within 2km

Site	Type	Approx. distance from project area
S14/5	Pā – east side of Rotokauri	1km
S14/19	Pā/ Borrow pits – true left bank of Waikato River	1.2km
S14/30	Pa - true left bank of Waikato River	1.2km
S14/86	Artefact find Duff Type 2B adze– Fuchsia Ave	1.1km
S14/89	Artefact find carved panels – Maui Street	0.74km
S14/189	Te Totara Papakāinga - Garden soils and borrow pits. ?19th century Māori kāinga - true right bank of Waikato River	1.4km
S14/485	Borrow pits and garden soils, koiwi tangata.	1.24km
S14/486	Te Uhi Pā - east side of Rotokauri	1km

There are four recorded pā sites within 2km of the project footprint. The closest to the project area are S14/5 and S14/486, both located on the eastern shore of Rotokauri, two recorded pā sites are located to the west on the banks of the Waikato River S14/30 and S14/189.

There are three recorded garden sites within 2km of the project. Two of these are also recorded as pā/ kāinga (S14/19, and S14/189), and the third S14/485 also recorded human remains (koiwi tangata). All three sites are located on the banks of the Waikato River.

Two artefact find spots are recorded to the east of the project. S14/89 records four incomplete sections of at least two decorative panels from a structure of undetermined type. The panels were recovered from a spoil heap at the southern upper reaches of a stream gully. S14/86 is the location of an adze, probably associated with the cluster of gardens and pā to the north.

#### 6.4. INVESTIGATIONS

A review of the digital report library held by Heritage New Zealand Pouhere Taonga<sup>11</sup> did not identify any archaeological monitoring and investigation reports specifically associated with the Rotokauri area.

Limited investigations were undertaken of swamp pā S14/5 by the Waikato Museum Archaeological Society (WMAS). None of this work is known to have been published. The author examined the paper file held at the Department of Conservation (DoC) in Hamilton. The site is described as a swamp mound pā, located on a swampy peninsula located on in the north east corner of Lake Rotokauri. Approximately 80 palisades and 80 stakes were recorded, and the mound was approximately 4ft above water level, approximately 1/6<sup>th</sup> of an acre, and covered in charcoal soil deposits. A large number of artefacts and samples were recovered from the site including stone adzes, pounders, obsidian, pumice and wooden objects. As far as the records state, this site was not dated by modern dating techniques, however it is clear from the material viewed that the pā site has its origins the pre-European period. Further details are provided in Keith (2018).

S14/485 was investigated by Clough & Associated Ltd in 2018. The NZAA SRF details that ‘modified Māori gardening soils were identified’ and ‘that the scarp between the two lower river terraces is undulating suggesting possible borrow or quarry areas along this slope’. Further details provided include that:

During the re-transfer of soil by a machine excavator from a stock pile, created from the excavation of a sediment control pond, koiwi tangata (human remains) were discovered. The remains collected are a partial skeletal only from what appears to be a prehistoric single adult individual. No in-situ koiwi remains were identified in the area of the original koiwi discovery. Given the extent of earthworks over this area it is likely that all remains have been redeposited into the soil stockpile.

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### 7. HISTORIC MAPS & IMAGES

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#### 7.1. MAPS AND PLANS

Historic maps available via the University of Waikato digital library have been viewed<sup>12</sup>. In most cases, there is minimal detail relating to the project area, or references to ‘open level country’, and indications of swampy land.

Figure 5, a sketch plan dated to 1864 is presented and discussed above. It illustrates a track passing between the Waikato and Waipa rivers traversing between swampland and to the south of Rotokauri (lake).

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<sup>11</sup> <http://www.heritage.org.nz/protecting-heritage/archaeology/digital-library>

<sup>12</sup> The following plans have been viewed:

- (a) “To accompany the Assistant Engineer in Chief’s Annual Report on Roads, Waikato District, Provide of Auckland, dated 30<sup>th</sup> June 1875”, accessed: <http://digital.liby.waikato.ac.nz/nzc/map/img5/032.jpg>
- (b) “Map of Part of the Waikato River, No. 2, from a map compiled at the Top. Dep. War Office” 1864, accessed: <http://digital.liby.waikato.ac.nz/nzc/map/img5/033.jpg>
- (c) “Sketch Map of the Waikato District” c.1870, accessed: <http://digital.liby.waikato.ac.nz/nzc/map/img5/040.jpg>
- (d) “Sketch Map of the Waikato District” 1879, accessed: <http://digital.liby.waikato.ac.nz/nzc/map/img5/041.jpg>
- (e) Sketch Map of the Country lying between the Waipa and Waikato Rivers shewing the Maori positions of Pah te Rangi and Piko Piko” (c. 1864), accessed: <http://digital.liby.waikato.ac.nz/nzc/map/img5/003.jpg>

Figure 7 is an extract from a sketch from the 1870s which details all of the main dwellings present at this time. Nothing of archaeological interest is identified within the project area; 'Stoke's Bush' is annotated, but all of the activity including dwellings and industry is focused towards the main waterways, tributaries and Hamilton City centre.

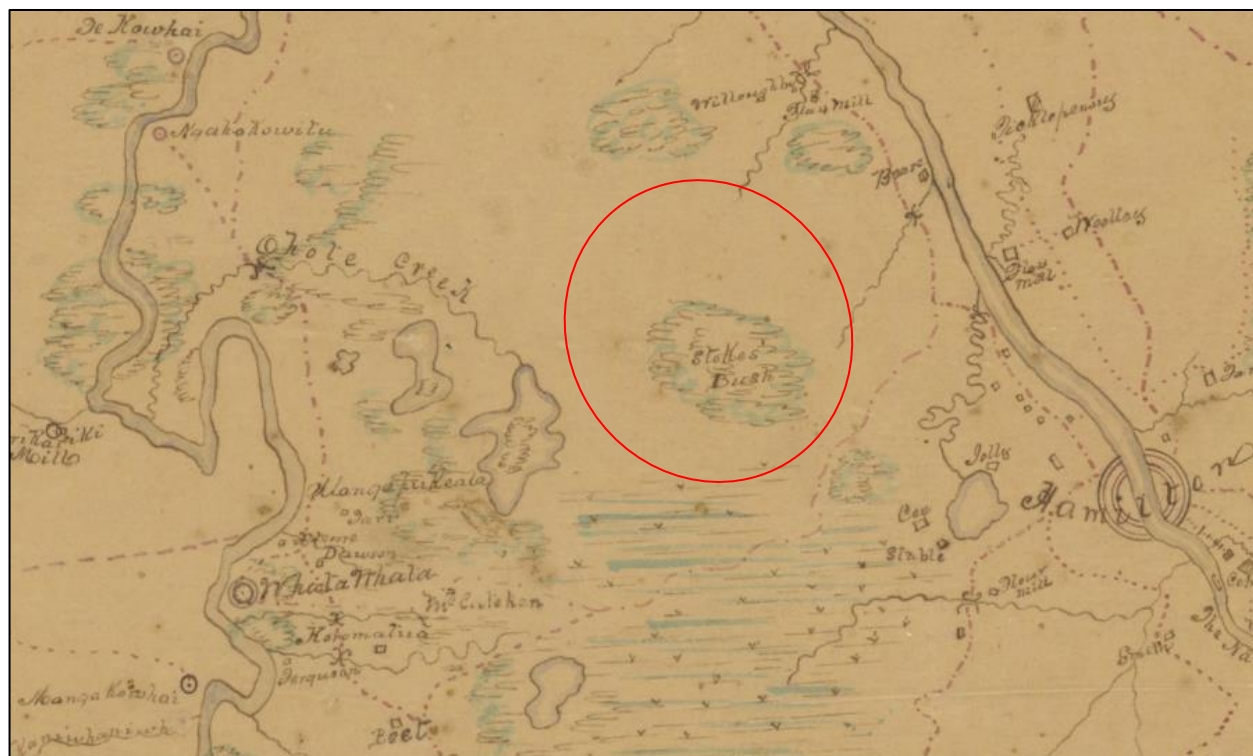


Figure 7: PART 'Sketch Map of Waikato County' Captain Newell. Reproduction obtained from the Waikato Museum.

Historic survey plans of the project area (LINZ database, accessed through *QuickMaps*) have been viewed<sup>13</sup>. The earlier plans dated to the 1860s show the area divided into allotments for military settlement, but do not provide much additional detail in relation to any land use, development or features (Figure 8 to 9).

Figure 10 is a detailed plan of the Te Rapa Railway Station and rail-line. The station opened in 1877 but was closed in 1971. The current project crosses to the north of the station following the alignment of Te Kowhai Rd East.

<sup>13</sup> The following plans have been examined: SO 2437/1 (1881), SO 2651/1 (1881), SO 2651 A (1881), SO 5915/1 (1890), SO 344/1 (1869), SO 345/1 (1868), SO 346/1, SO 347/1 (1865) and SO 2509/1 (1881).



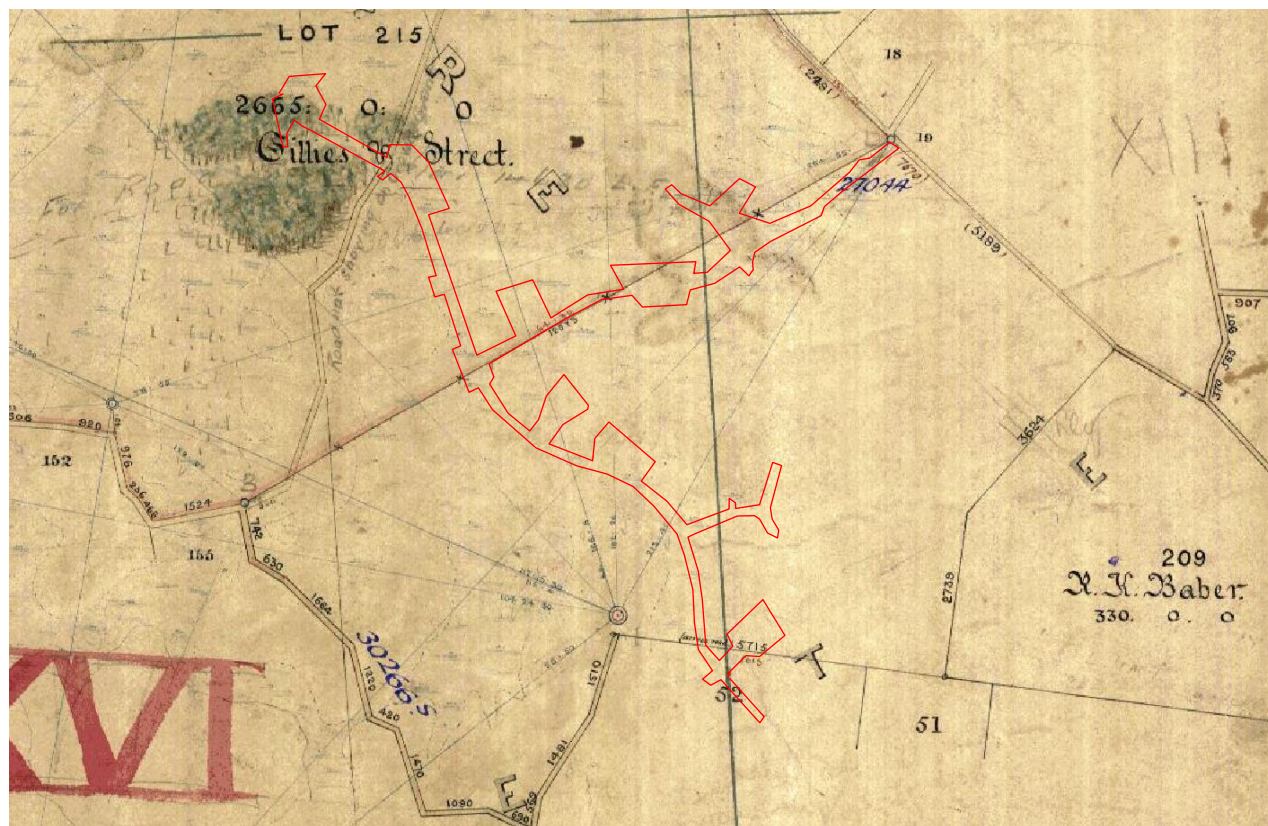


Figure 8: Part of SO345/1 (1868), showing swamp and bush, surveyed allotments with the names of the contemporary owners.

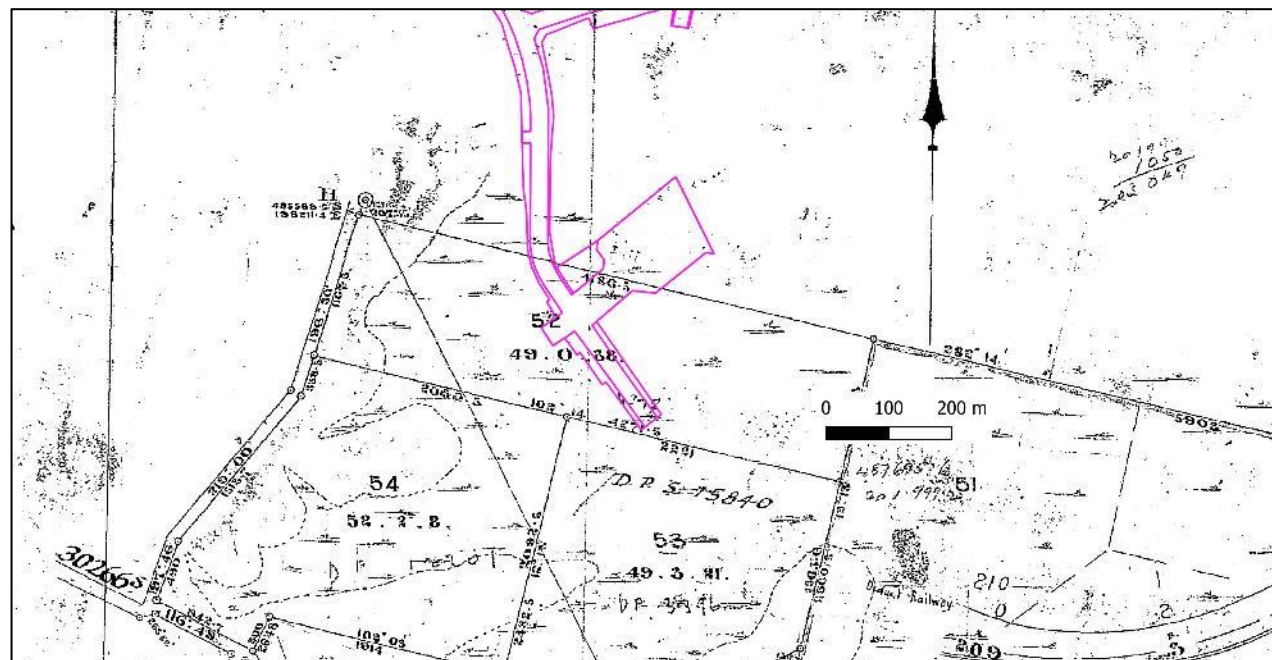


Figure 9: Part SO2651 A (1881) showing subdivided land, swamp, vegetation, and road surveys.

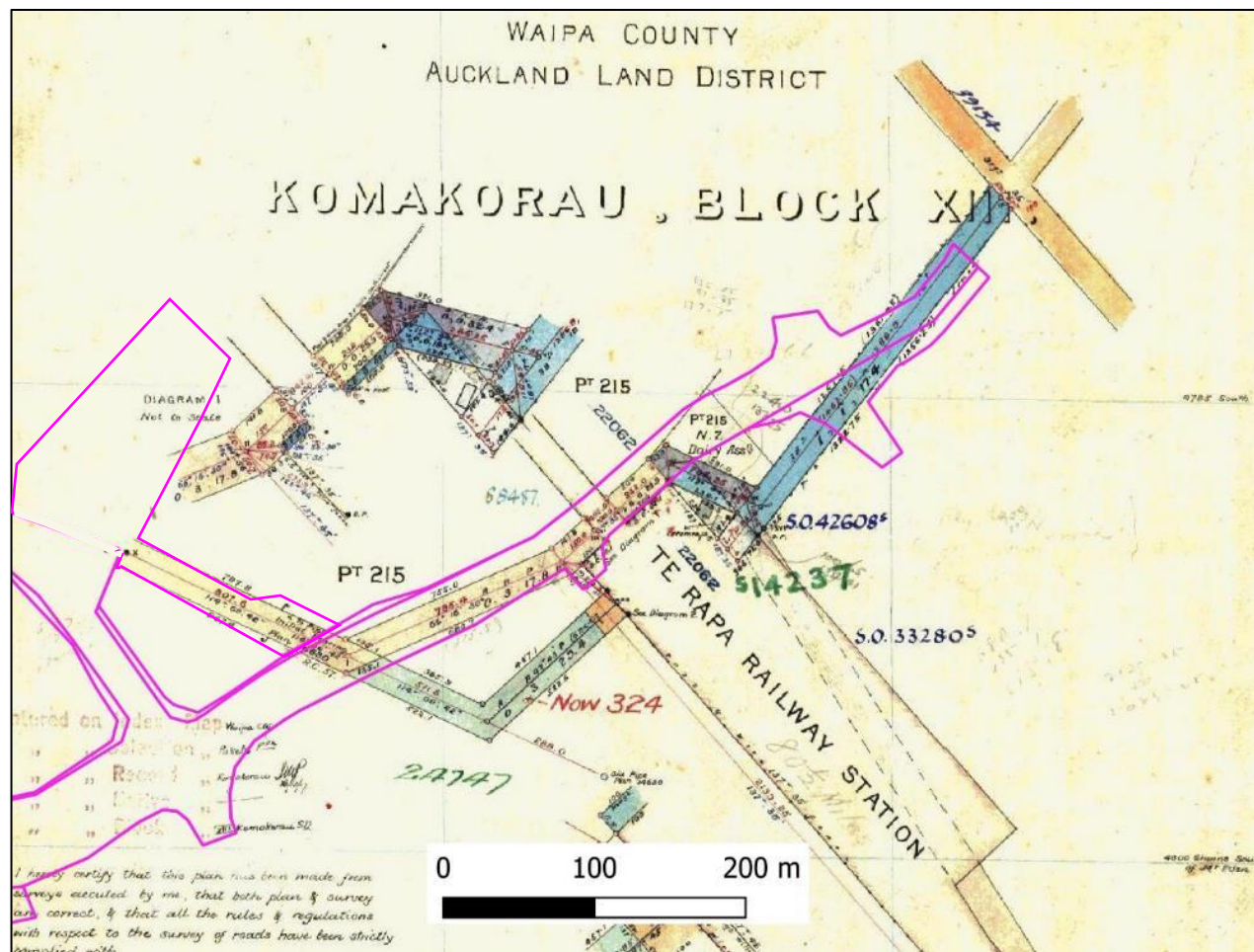


Figure 10: Part of SO18927 (1910) showing the project crossing the NIMT railway and Te Rapa Railway Station.

## 7.2. AERIAL PHOTOGRAPHS

Aerial imagery from the 1940s has been examined to identify any visible surface features in the project area. Figure 11 shows the study area in the early 1940s. At this time the Rotokauri area is generally in pasture with low-lying areas appearing to be in scrub vegetation. There are farm buildings and occasional domestic dwellings visible, as well as formed tracks, roads, hedges and shelterbelts. This image has been examined at high resolution and provided no evidence for archaeological features. The 1963 image (Figure 12) is similar for most of the landscape. The north-eastern end of the study area has seen developments around the Te Rapa Station but there is limited changes within the study area. No significant changes to landform are identifiable. Modern aerial imagery shows that the study area has remained mainly in farmland to the west of the expressway. The southern portion of the proposed network has been subject to recent modern development around Rotokauri Road. In summary, no visual evidence for archaeological features has been identified on the historic aerial images within the project area.



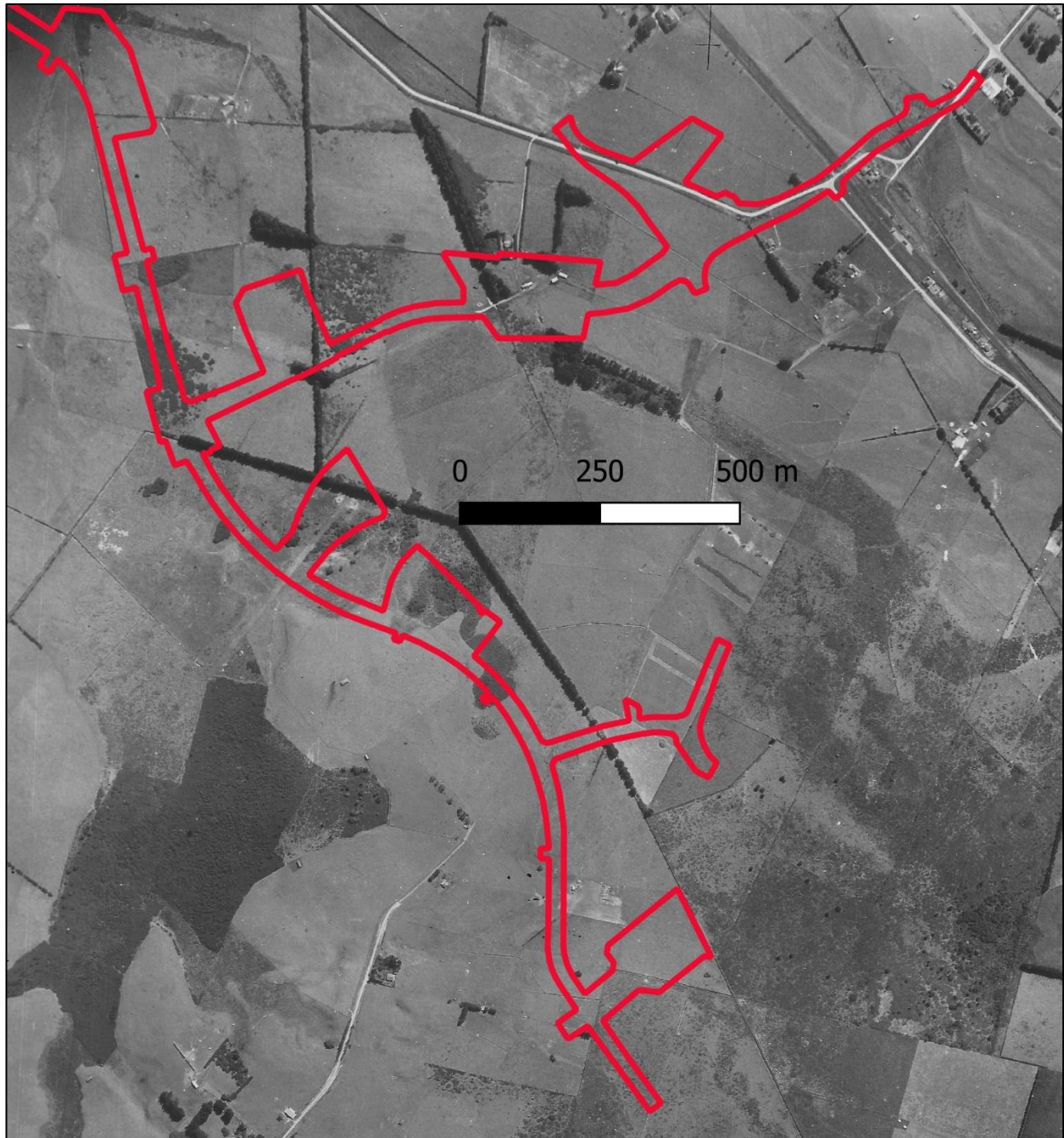


Figure 11: 1943 Aerial image (source: WRC).



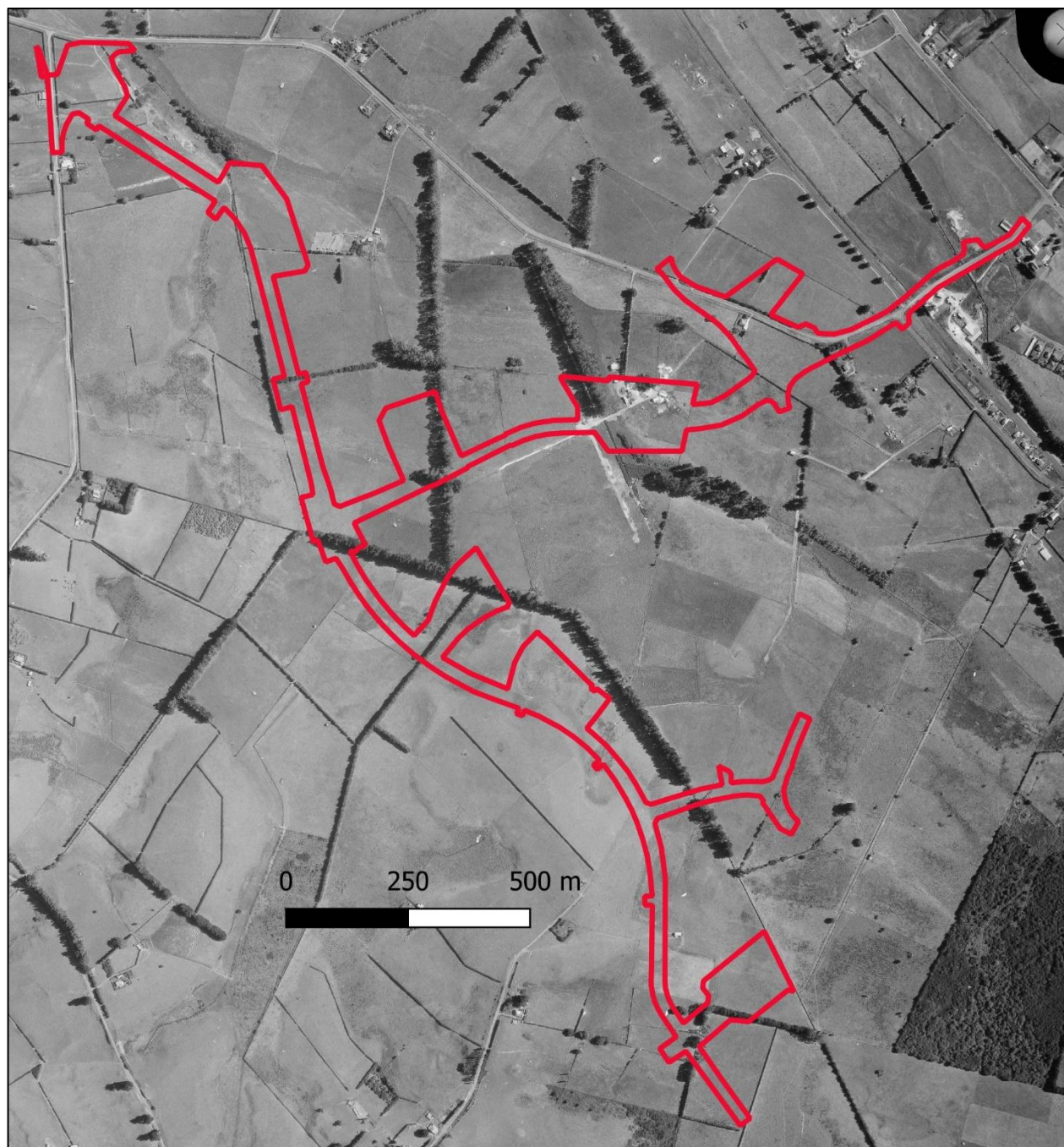


Figure 12: 1963 aerial image. Crown 1397\_3280\_18 (source: Retrolens.nz)

### 7.3. SUMMARY OF DOCUMENTARY EVIDENCE

The study area is mainly within low lying former swampland and around the foothills of higher elevated but still low-lying hills. Occupation and land use of land between the main waterways of the Waipā and Waikato rivers appears to be focused on the lake shores and possibly on some of the higher elevated hills where pedestrian trackways were in use. Adjacent swamplands would have been used for resource gathering although archaeological evidence for this in the wider study area has not been identified to date. The closest known occupation sites are on the banks of Rotokauri some 1km away to the west of the project, and along the Waikato River at a similar distance to the east. Swamp draining may have started in the late 19<sup>th</sup> century in the Rotokauri environs but it is likely that most of the draining occurred into the 20<sup>th</sup> century when land resources were under pressure from a growing population.

Survey plans and historic aerial imagery do not suggest archaeological sites are present within the Rotokauri roading network proposal.

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## 8. FIELDWORK

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Sian Keith surveyed the development site with the Beca project team on the 18<sup>th</sup> December 2020. The documentary research had not suggested any specific targets to focus the field visit on. Access was provided to portions of the study area, with some private land not accessible at the time (Figure 13). The land which could not be accessed was viewed from a distance. Although the survey was not complete it is not considered that walking the whole footprint would have led to the discovery of visible archaeological sites. Additionally, based on the current information, it is not considered that there is a high risk of encountering archaeological evidence within the study area.

### 8.1. RESULTS

The land is mainly in pasture with infrastructure including farm tracks, fencing, shelter belts, farm and domestic buildings and areas of modern infrastructure including roading and subdivision. The accessible sections of land were surveyed on foot, with the remainder viewed from a distance. Figure 13 is labelled in relation to the following text.



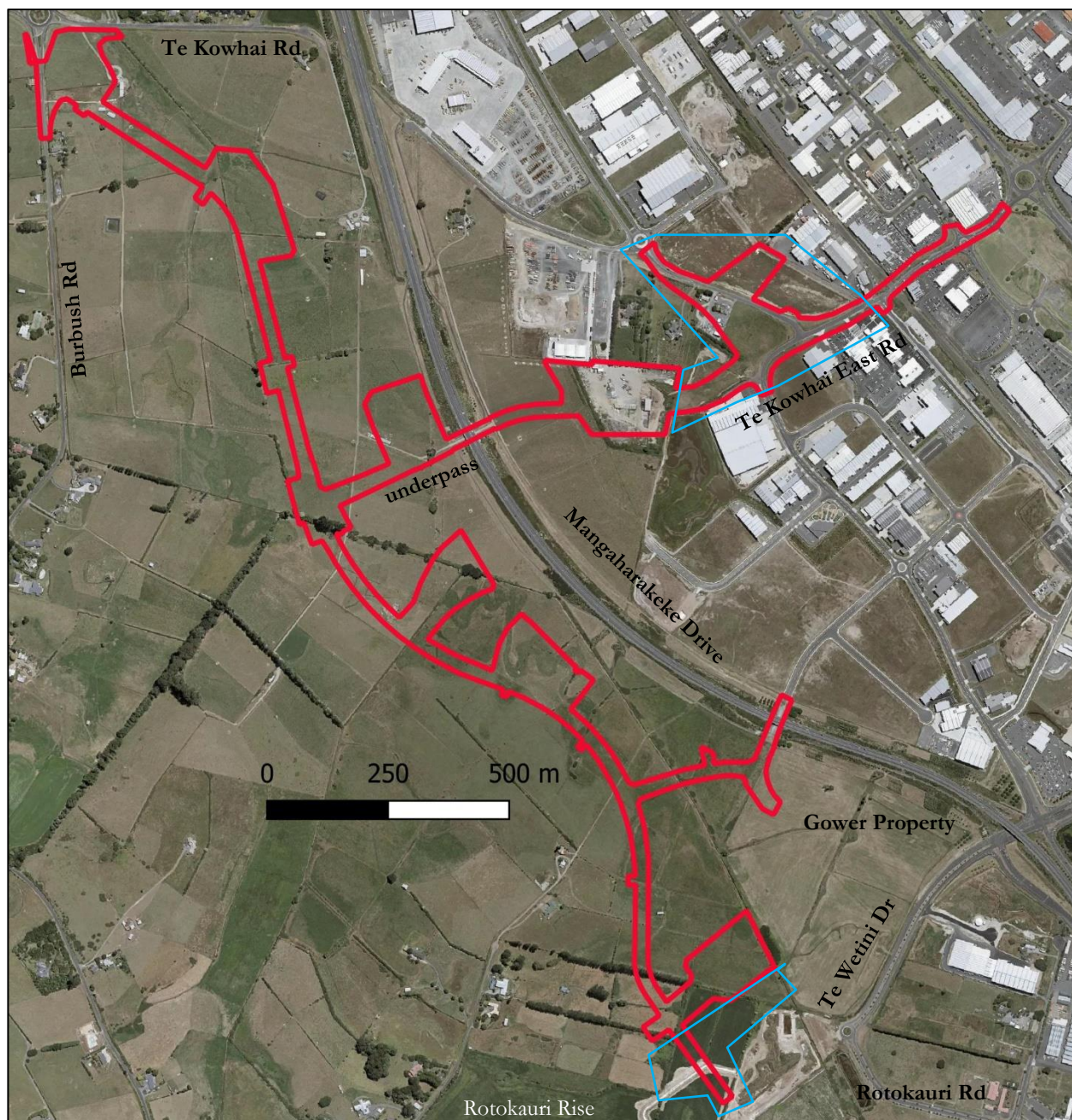


Figure 13: Overview of survey area (LINZ Aerial Mapping). Blue outline indicates recent change in infrastructure corridor.

#### Rotokauri Rd & Te Wetini Dr

This section of the proposal is concerned with improvements to the current roading network. The land here was surveyed by foot and vehicle. It was noted to be highly modified by modern infrastructure and based on current evidence it is highly unlikely to hold subsurface archaeological values.

#### Te Wetini Dr / Rotokauri Rd to Burbush Road

This section of the proposal is through greenfield farmland. The landscape was viewed and/or accessed from a number of viewpoints. The southern end was viewed from Rotokauri Rise (Figure 14). Access through the Gower property to view west from Mangaharakeke Drive across farmland was provided (Figure 15). The underpass below Mangaharakeke Drive was viewed and the northern end of the proposed new network at Burbush/ Te Kowhai Rd (Figure 16). There are no known archaeological values within this section of the proposal.

#### Te Kowhai East Rd

This area is a highly modified landscape and includes modern industrial infrastructure. The project crosses the NIMT railway line. No formal access was provided to the line as this would require Kiwi Rail Health & Safety protocol. Based on a visual assessment from a distance, it is considered unlikely that pre-1900 fabric would have survived 20<sup>th</sup> century improvements and widening of the line (Figure 17). There are no known or anticipated archaeological values in this section.



*Figure 14: View northeast from Rotokauri Rise*





*Figure 15: View south through Gower property from Waikato Expressway*



*Figure 16: View south from Te Kowhai Rd*



Figure 17: Te Kowhai East Rd looking east across NIMT.

In summary, the survey did not identify the presence of any new archaeological sites. There is no current evidence to suggest that the land holds any pre-1900 archaeological values based on field evidence. In the greenfield section the land is generally very low lying and is likely to have been waterlogged during the wetter seasons prior to the establishment of intensive drainage. The remaining landscape is modified with current roading and/or modern infrastructure. The NIMT rail line is the only known pre-1900 development, and this line was widened in the 20<sup>th</sup> century so is unlikely to hold any residual archaeological material.

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## 9. CONSTRAINTS AND LIMITATIONS

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This report is an assessment of the impacts of the proposed Rotokauri Arterials project on archaeological values. There are no statements on the cultural significance of the project area nor are the views of tangata whenua represented in this report.

Statements are made as to the location and nature of recorded archaeological sites and their archaeological values. The archaeological information is derived from both published material including the HNZPT Digital Archaeological Report Library and New Zealand Archaeological Association (NZAA) ArchSite Database as well as information from archaeologists who have undertaken research and HNZPT authority work in this part of the Waikato.

Archaeological site location data should be regarded as a guide only as the locational accuracy of archaeological sites recorded in ArchSite is variable. Accuracy for some recorded sites is only to 100 m grid squares and many of these have been recalculated from earlier 100 yard coordinates which can increase the location error. Those sites that have not been recorded accurately are indicated on the ArchSite maps with a square and are only accurate to within, at best, 100 m of the actual site location. Archaeological sites that have been visited since the advent of GPS may have more accurate recorded locations. The full extent of recorded sites is often not known, and the single point coordinate provided by ArchSite is often based on only the visible surface archaeological remains. This does not necessarily represent the true subsurface extent of archaeological sites as defined in the *Heritage New Zealand Pouhere Taonga Act 2014* (HNZPTA), as most archaeological remains lie below the ground surface.

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## 10. ARCHAEOLOGICAL AND OTHER VALUES

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### 10.1. ARCHAEOLOGICAL VALUES

There are no recorded archaeological sites directly within the project footprint. While there are only a handful of sites recorded in the vicinity, a number of these are pā, indicating that the wider area was used and/or occupied by Māori. Current information would indicate that the development land has low potential for archaeological sites, and therefore no known archaeological values.

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## 11. ASSESSMENT OF EFFECTS

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Please see Section 1.2 above for a full description of the proposal.

### 11.1. ASSESSMENT OF EFFECTS

Research for this project has identified that the land between the Waipā and Waikato Rivers was occupied and utilised by Māori prior to 1900. This is attested to in the recorded sites in the wider project vicinity. The known sites are recorded along the edge of the lake environments as a Rotokauri (lake), and the Waikato River and their tributaries. There are no known archaeological sites within 1km of the proposal.

European farming and settlement are not known to have started within the wider project footprint until the late 1800s, and it is likely that extensive farming was not started until the early 1900s and following large scale draining.

The NIMT railway line is the only pre-1900 development known. Currently it is considered unlikely that this will hold any archaeological values within the proposed designation. This is based on the current modern road (Te Kowhai East Road) which passes across it, and because the line was extended into a double track in the 20<sup>th</sup> century. Both activities are highly likely to have removed pre-1900 fabric of the line.

### 11.2. RECOMMENDATIONS

It is recommended that:

- No alterations to the current project footprint are made based on archaeological values.
- Earthworks associated with the construction of the Rotokauri Arterials should operate under the provisions of an Accidental Discovery Protocol. In the unlikely event that pre-1900 evidence is uncovered, works within the vicinity of the find should cease pending an application to HNZPT for an archaeological authority.

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