



TE TUPU NGĀTAHI
SUPPORTING GROWTH

Warkworth Assessment of Archaeological and Heritage Effects

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Glossary of Defined Terms and Acronyms

Acronym/Term	Description
AEE	Assessment of Effects on the Environment report
AT	Auckland Transport
AUP:OP	Auckland Unitary Plan: Operative in Part
CHI	Cultural Heritage Inventory
HNZPT	Heritage New Zealand Pouhere Taonga
HNZPTA	Heritage New Zealand Pouhere Taonga Act 2014
N/A	Not Applicable
NOR	Notice of Requirement
NOR 1	Northern Public Transport Hub and Western Link - North
NOR 2	Woodcocks Road – West Upgrade
NOR 3	State Highway 1 – South Upgrade
NOR 4	Matakana Road Upgrade
NOR 5	Sandspit Road Upgrade
NOR 6	Western Link - South
NOR 7	Sandspit Link
NOR 8	Wider Western Link – North
NZAA	New Zealand Archaeological Association
RMA	Resource Management Act 1991
SH1	State Highway 1
SRS	Site Recording Scheme
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Alliance
WK	Waka Kotahi New Zealand Transport Agency

1 Executive Summary

Overview

The Warkworth Assessment Package is a network of planned transport infrastructure with the purpose of responding to planned future growth in the Warkworth growth areas. The Warkworth Package is made of eight NORs including new corridors, existing road upgrades, and a public transport interchange with park and ride.

Table 1. Warkworth Assessment Package – NOR and Project Overview

Notice	Project
NOR 1	Northern Public Transport Hub and Western Link - North
NOR 2	Woodcocks Road – West Upgrade
NOR 3	State Highway 1 – South Upgrade
NOR 4	Matakana Road Upgrade
NOR 5	Sandspit Road Upgrade
NOR 6	Western Link - South
NOR 7	Sandspit Link
NOR 8	Wider Western Link – North

Methodology

This assessment included desktop research using a variety of resources as well as a field assessment. The field assessment was undertaken by Hayley Glover of CFG Heritage Ltd on 13 December and was a pedestrian survey largely limited to publicly accessible areas. It was a surface assessment only; invasive techniques like probing or test pitting were not used due to the high likelihood of services being present near the road.

1.1.1 Assessment of effects

1.1.1.1 Overall Warkworth Network

Most of the proposed designations pass through relatively undeveloped pastoral land, often crossing or running beside streams. There is potential for unrecorded pre-European Māori or colonial sites to be present within the proposed designations, in addition to those recorded sites which are discussed below.

1.1.1.2 NOR 1 – Northern Public Transport Hub and Western Link - North

The project proposes a new public transport interchange with associated facilities + Park and Ride and a new section of four lane urban arterial with cycle lanes and footpaths on both sides. No specific archaeological risks have been identified in this NOR.

1.1.1.3 NOR 2 - Woodcocks Road – West Upgrade

The project proposes the upgrade of Woodcocks Road to a two lane urban arterial cross-section with cycle lanes and footpaths on both sides of the corridor. Four archaeological sites and two CHI items are recorded within 200 m of the designation boundary. Three of these are outside of the proposed designation or unlikely to be affected by works. These are R09/2243 (Cherry's Hut), R09/2246 (track and ford) and 17006 (WWII Camp).

There is some potential for archaeological or historic material and features from R09/2244 (Cherry's Bridge), R09/2247 (artefacts), and 17004 (WWII Camp) to be affected by works. The archaeological and heritage values of these sites have been assessed, with sites recorded in the NZAA SRS assessed under the HNZPTA and those recorded in the CHI assessed under the AUP, Chapter B5.

1.1.1.4 NOR 3 – State Highway 1 – South Upgrade

The project proposes the upgrade of State Highway 1 (southern section) to a two lane urban arterial cross-section with cycle lanes and footpaths. No specific archaeological risks have been identified in this NOR.

1.1.1.5 NOR 4 – Matakana Road Upgrade

The project proposes the upgrade of Matakana Road to a two lane urban arterial cross-section with cycle lanes and footpaths. One archaeological site is recorded within 200 m of the proposed works with potential for archaeological material from R09/2253 (domestic) to be affected by works. The archaeological and heritage value of this site has been assessed under the HNZPTA.

1.1.1.6 NOR 5 – Sandspit Road Upgrade

The project proposes the upgrade of Sandspit Road to a two lane urban arterial cross-section with cycle lanes and footpaths. One archaeological site is recorded within 200 m of the proposed works but is unlikely to be affected by works (R09/2263). This site may, however, be affected by long term operational effects. As redeposited midden is visible in small scatters within the road reserve, there is also increased potential for unrecorded in situ midden to be encountered during construction.

1.1.1.7 NOR 6 – Western Link - South

The project proposes a new two lane urban arterial cross-section with cycle lanes and footpaths. One archaeological site is recorded within 200 m of the proposed works with potential for archaeological material from R09/2284 (road) to be affected by works. The archaeological and heritage value of this site has been assessed under the HNZPTA.

1.1.1.8 NOR 7 – Sandspit Link

The project proposes a new two lane urban arterial cross-section with cycle lanes and footpaths. No specific archaeological risks have been identified in this NOR.

1.1.1.9 NOR 8 – Wider Western Link - North

The project proposes a new two lane urban arterial cross-section with cycle lanes and footpaths. One heritage site is listed within 200 m of the proposed works but is unlikely to be affected by works (17006).

1.1.1.10 Summary of Effects and Recommendations

Table 2. Summary of Effects and Recommendations

Effect	Recommendation
Overall network – potential for unrecorded archaeological sites to be encountered and damaged during works	Archaeological authority and monitoring
NOR 2 – potential for damage to archaeological sites R09/2244 (Cherry's Bridge) and R09/2247 (artefact find spot) as well as CHI site 17004 (WWII camp) during works	Archaeological authority and monitoring
NOR 4 – potential for damage to archaeological site R09/2253 (domestic) during works	Archaeological authority and monitoring
NOR 5 – potential for damage to archaeological site R09/2263 (dam) from operational effects	Manage through HHMP
NOR 6 – potential for damage to archaeological site R09/2284 (road) during works	Archaeological authority and monitoring

It is recommended that, prior to works starting, an authority to destroy, damage or modify archaeological sites recorded in the NZAA SRS (R09/2244, R09/2247, R09/2253 and R09/2284) and unrecorded archaeological sites and any other archaeological features that may be encountered within the identified works areas be applied for from HNZPT under Section 44 of the HNZPTA. Archaeological monitoring will take place during works around recorded sites (described below) and in high-risk areas identified in an archaeological works plan in order to mitigate the effects of works. Archaeological material and features will be recorded, sampled and analysed as appropriate following standard archaeological best practice.

Post-1900 CHI items (such as 17004) are not protected by the HNZPTA but may be subject to additional Auckland Council requirements. Archaeological monitoring will take place during works around this site in order to mitigate the effects of works. Any heritage material and features will be recorded, sampled and analysed as appropriate following standard archaeological best practice.

1.1.1.11 Conclusion

Across the project area, there is potential for unrecorded archaeological sites to be encountered during construction, particularly in undeveloped paddocks and alongside any streams or waterways. There are also several recorded archaeological and heritage sites within the proposed designations that may be partly damaged by works, including Cherry's Bridge (R09/2244), an artefact find spot (R09/2247), a historic house site (R09/2253), a historic road bench (R09/2284) and a WWII Camp (17004).

Works should be undertaken under an archaeological authority obtained from HNZPT and should be guided by an archaeological works plan. Where risk of encountering archaeology is increased,

archaeological monitoring will take place. Any archaeological material identified will be recorded, sampled, and analysed as appropriate following archaeological best practice.

While there is a risk of damage to archaeological sites, which is a negative effect, an archaeological authority will be obtained ahead of works and relevant works carried out with an archaeologist on site to record and analyse material. This will partially mitigate the negative effects and provide an opportunity to learn more about the history of Warkworth.

2 Introduction

This archaeological assessment has been prepared for the Supporting Growth Alliance (**Te Tupu Ngātahi**), Warkworth Package of Notices of Requirement (NORs) for Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (WK) as requiring authorities under the Resource Management Act 1991 (RMA). The notices are to designate land for future strategic transport corridors as part of Te Tupu Ngātahi to enable the future construction, operation and maintenance of transport infrastructure in the Warkworth area of Auckland.

2.1 Warkworth Growth Area

Warkworth is located at the northernmost extent of the Auckland Region, approximately 60 km from the Auckland city centre, and 30 km north of Orewa. It is identified as a satellite town in the Auckland Unitary Plan: Operative in Part (AUP:OP) and will act as a rural node that serves both the surrounding rural communities as well as connecting to urban Auckland.

The Warkworth growth area will be less than 5 km north-south and east-west and will make a significant contribution to the future growth of Auckland's population. 1000 ha of currently rural land has been rezoned (Future Urban Zone) to support significant business and residential growth. At full build out it is anticipated to provide for approximately 8,200 new dwellings and employment activities that will contribute to 4,600 new jobs across Warkworth. This growth area will be development ready in the stages outlined below:

- **Stage 1** Warkworth North – Business land is already live zoned and remainder to be development ready by 2022.
- **Stage 2** Warkworth South – To be development ready between 2028 – 2032
- **Stage 3** Warkworth Northeast – To be development ready between 2033 – 2037

Furthermore, the Warkworth Structure Plan was adopted by the Council in 2019 and sets out the framework for transforming Warkworth from a rural environment to an urbanised community over the next 15 - 20 years.

It is noted that parts of these areas are experiencing earlier than anticipated growth pressure, with parts of Warkworth South subject to a lodged Private Plan Change, as well as sections of Warkworth Northeast.¹

The Warkworth Assessment Package will provide route protection for the local arterials, which include walking, cycling and public transport linkages needed to support the expected growth in Warkworth. The Warkworth Package of projects is summarised in Section 2.

This report addresses the archaeological effects of the Warkworth Package (NOR 1 - NOR 8) identified in Figure 1 in section 3.

Refer to the Assessment of Effects on the Environment (AEE) for a more detailed project description.

¹ <https://www.aucklandcouncil.govt.nz/have-your-say/have-your-say-notified-resource-consent/Pages/resource-consent-public-notice.aspx?itemId=194&src=Search>

2.2 Purpose and scope of this Report

This archaeological assessment forms part of the suite of technical reports prepared to support the assessment of effects (AEE) for the Warkworth Package. Its purpose is to inform the AEE that accompanies the eight Warkworth Network NORs sought by AT and WK.

This report considers the actual and potential effects associated with the construction, operation and maintenance of the Warkworth Package on the existing and likely future environment as it relates to archaeological effects and recommends measures that may be implemented to avoid, remedy and/or mitigate these effects.

The key matters addressed in this report are as follows:

- a) Identify and describe the archaeological context of the Warkworth Assessment Package area;
- b) Identify and describe the actual and potential archaeological effects of each Project corridor within the Warkworth Assessment Package;
- c) Recommend measures as appropriate to avoid, remedy or mitigate actual and potential archaeological effects (including any conditions/management plan required) for each Project corridor within the Warkworth Assessment Package; and
- d) Present an overall conclusion of the level of actual and potential effects for each Project corridor within the Warkworth Assessment Package after recommended measures are implemented.

This report should be read alongside the AEE, which contains further details on the history and context of the Warkworth project. The AEE also contains a detailed description of works to be authorised within each NOR, and the typical construction methodologies that will be used to implement this work. These have been reviewed by the author of this report and have been considered as part of this assessment of archaeological effects. As such, they are not repeated here. Where a description of an activity is necessary to understand the potential effects, it has been included in this report for clarity.

2.3 Report Structure

In order to provide a clear assessment of each NOR, this report follows as appropriate, the structure set out in the AEE. That is, the network as a whole as well as the individual corridors and facilities have their own section, and each section contains an assessment of the actual and potential effects. Where appropriate, measures to avoid, remedy or mitigate effects are recommended.

The sections are arranged starting from the overall network, then by project form starting from Public Transport Hubs, then existing road upgrades, and finally new corridors. Table 3 below describes the extent of each corridor, and where the description of effects can be found in this report.

Table 3. Report Structure

Sections	Section number
Description of the Project	3

Sections	Section number
Overview of the methodology used to undertake the assessment and identification of the assessment criteria and any relevant standards or guidelines	4
Identification and description of the existing and likely receiving archaeological environment;	5
Assessment of general archaeological and heritage matters for all Warkworth NORs	6
Assessment of specific archaeological and heritage matters for Warkworth NOR 1	7
Assessment of specific archaeological and heritage matters for Warkworth NOR 2	8
Assessment of specific archaeological and heritage matters for Warkworth NOR 3	9
Assessment of specific archaeological and heritage matters for Warkworth NOR 5	10
Assessment of specific archaeological and heritage matters for Warkworth NOR 6	11
Overall conclusion of the level of potential adverse archaeological effects of the Warkworth Project	12

3 Warkworth Package Overview

The Warkworth package is a network of planned transport infrastructure with the purpose of responding to planned future growth in the Warkworth growth areas. The transport network is made of eight NORs including public transport interchanges, existing road upgrades, and new corridors.

An overview of the Warkworth NOR package is set out in Table 4 and shown in Figure.

Table 4. Warkworth NOR Package

Corridor	NOR	Description	Requiring Authority
Northern Public Transport Hub and Western Link - North	NOR 1	Construction of a public transport hub with associated facilities + park and ride facility (approximately 228 carparks) Construction of a four lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Woodcocks Road – West Upgrade	NOR 2	Upgrade of Woodcocks Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
State Highway 1 – South Upgrade	NOR 3	Upgrade of State Highway 1 to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Matakana Road Upgrade	NOR 4	Upgrade of Matakana Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Sandspit Road Upgrade	NOR 5	Upgrade of Sandspit Road to a two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Western Link South	NOR 6	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Sandspit Link	NOR 7	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport
Wider Western Link - North	NOR 8	Construction of a new two lane urban arterial cross-section with cycle lanes and footpaths	Auckland Transport



Figure 1. Warkworth NOR package Overview

4 Assessment Methodology

4.1 Methodology

The following resources were considered in this assessment:

- All recorded sites in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS) in the general vicinity were accessed from the New Zealand Archaeological Association Site Recording Scheme through ArchSite (<https://archsite.org.nz>, accessed 10 October 2022) and incorporated into the project specific Geographic Information System (GIS) workspace maintained by CFG Heritage.
- The HNZPT digital library (<https://www.heritage.org.nz/protecting-heritage/archaeology/digital-library>, accessed 10 October 2022) was searched for records of archaeological investigations in the area.
- The HNZPT List / Rārangi Kōrero (<https://www.heritage.org.nz/the-list>) was searched 10 October 2022 to see if any listed items were within the proposed NORs.
- Old maps and survey plans held by Land Information New Zealand (LINZ) were accessed on date 2022 using QuickMap software.
- Aerial Photographs held by LINZ (<https://data.linz.govt.nz/>), Auckland Council (<https://geomapspublic.aucklandcouncil.govt.nz/>) and Retrolens (<https://retrolens.co.nz/>) were searched on 07 October 2022.
- Local soil information was searched on the S-Map Online database maintained by Landcare Research (<https://smap.landcareresearch.co.nz/>) accessed on 12 October 2022.
- Potential vegetation based on soil information was obtained from the Land Resource Information Systems database (<https://iris.scinfo.org.nz/>) accessed on 14 October 2022.
- The Auckland Council Cultural Heritage Inventory (CHI) (<https://chi.net.nz/>), the Auckland Council GeoMaps GIS viewer (<https://geomapspublic.aucklandcouncil.govt.nz/>) and Auckland Unitary Plan Viewer (<https://unitaryplanmaps.aucklandcouncil.govt.nz/>) were accessed on 7 October 2022 and searched for any areas of cultural significance.
- Papers Past online database (<https://paperspast.natlib.govt.nz/>) was accessed 13 March 2022 for historic newspaper articles;
- The National Library of New Zealand's DigitalNZ website (<https://digitalnz.org/>) was accessed 10 October 2022 for old drawings, photographs, and plans;
- Several written texts on the history of the area;
- Warkworth Network Technical Specialist AEE briefing pack; and
- A drive by viewing of proposed works areas was undertaken 5 October 2022 alongside other specialists.

A field assessment was undertaken on 13 December 2022 by Hayley Glover of CFG Heritage Ltd. This was a pedestrian survey, though several sections of road were unsafe to walk through and had to be driven through instead. The survey was limited to publicly accessible areas, primarily road reserves, as well as access to one private property (Lot 1 DP 437211). The purpose of this field work was to relocate recorded sites where possible and identify any potential unrecorded sites. It was a surface assessment only, no invasive techniques like probing or test pitting were used due to the high likelihood of services being present.

4.2 Preparation for this Report

Work undertaken for this Report commenced September 2022. In summary, the preparation for this work has included:

- Desktop research of the designations using multiple online and paper resources. These are listed in the methodology section above.
- A site visit / field assessment was undertaken on 13 December 2022 by Hayley Glover of CFG Heritage Ltd.

4.3 Statutory Requirements

4.3.1 Heritage New Zealand Pouhere Taonga Act 2014 (HNZPT Act)

All archaeological sites, whether recorded or not, are protected by the provisions of the Heritage New Zealand Pouhere Taonga Act 2014 (**HNZPT Act**) and may not be destroyed, damaged or modified without an authority issued by Heritage New Zealand Pouhere Taonga (**HNZPT**).

An archaeological site is defined in the HNZPT Act 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 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).

Any HNZPT Act authorities will be applied for at a later date, after detailed design and before any ground disturbance and construction works.

4.3.2 Resource Management Act 1991

The RMA requires District and Regional Councils to manage the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations. The protection of historic heritage from inappropriate subdivision, use, and development is identified as a matter of national importance (Section 6(f)).

Historic heritage is defined in section 2 of the RMA as

Those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from any of the following qualities: archaeological, architectural, cultural, historic, scientific, or technological.

Historic heritage includes:

- *historic sites, structures, places, and areas; and*
- *archaeological sites; and sites of significance to Māori, including wāhi tapu; and*
- *surroundings associated with the natural and physical resources.*

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.

4.3.3 Auckland Unitary Plan: Operative in Part

The Auckland Unitary Plan: Operative in Part (**AUP:OP**) contains several applicable provisions regarding historic heritage. In the AUP:OP, archaeological sites are defined in accordance with the definitions outlined in the HNZPT Act.

A scheduled historic heritage place can be an individual feature, or encompass multiple features and/or properties, and may include public land, land covered by water and any body of water. A historic heritage place may include cultural landscapes, buildings, structures, monuments, gardens and plantings, archaeological sites and features, traditional sites, sacred places, townscapes, streetscapes and settlements. The criteria for the identification and scheduling of these places is discussed in chapter B5 2.2 of the AUP:OP.

Additionally, there are heritage provisions in chapters E26 Infrastructure and E11/E12 land disturbance of the AUP:OP.

4.4 Limitations and accuracy of data

Archaeological sites have been recorded since the 1950s and the quality of site information is variable. Sites were initially recorded on 100 yd grid references, which were converted to 100 m grid references as the map data became metricated in the 1980s. This has led to sites potentially only having a 200 m accuracy.

Since the mid-1990s, sites recorded by hand-held GPS are generally located to ± 5 m. To ensure all archaeological sites that could be impacted by works are assessed, a 200 m buffer was placed around the Project area and all sites contained within that buffer were subject to categorical desktop assessment to see if they were likely to be impacted by the proposed extent of works. Any sites within 200 m of the Project which could not be ruled out by this method will be considered as within the Project corridor until able to be proven otherwise.

5 Existing and likely receiving archaeological environment

The projects encompassed in the Warkworth NOR package are likely to be constructed 15-20 years from now. The implementation timeframe for each project will vary and correspond with future land release in the area. Assessing the effects on the environment solely as it exists today (i.e., at the time of assessment) will not provide an accurate reflection of the environment in which some of the effects will be experienced. Accordingly, the assessment of effects considers both the existing environment, and the likely receiving environment in which the effects will likely occur.

The Warkworth NOR package will be constructed and will operate alongside existing urban environments or planned future environments (i.e., what can be built under the existing Auckland Unitary Plan: Operative in Part (AUP:OP) and what is identified in the Warkworth Structure Plan):

1. **Existing environment:** A number of corridors comprising the Warkworth NOR package are partially located within/alongside existing urban areas.
 - e) Matakana Road Upgrade – residential land uses (single house zone, mixed housing suburban zone, mixed housing urban zone) comprise the western and north-western extents of the corridor.
 - f) Western Link - South – residential land uses are situated to the north and northwest of the corridor and existing industrial land use on the eastern extent of the corridor.
 - g) State Highway 1 (Southern Section) – residential land uses are adjacent to the northwest and southeast of the northern extent of the corridor, additionally there are established business land uses to the northeast of the northern extent of the corridor.
 - h) Woodcocks Road – the eastern extent of the corridor has existing residential land uses to the north and south.
2. **Future environment:** All the corridors in the Warkworth NOR package will partially or wholly be constructed and implemented on land identified for future growth (Future Urban Zone) and as a result are anticipated to change to urban or industrial land uses.

The likelihood and magnitude of land use change regarding the land use planning context has been identified in Table 5 below. This has been used to inform the assumptions made on the likely future environment

Table 5. Likelihood and magnitude of land use change

Existing environment	Current AUP:OP Zoning	Likelihood of Change for the environment ²	Magnitude of potential change	Likely Receiving Environment ³
Residential⁴	Residential (Mixed Housing Suburban)	Low	Low	Residential
	Residential (Mixed Housing Urban)	Low	Low	Residential
	Residential (Single House)	Low	Low	Residential
Business	Business (Mixed Use)	Low	Low	Business (Industrial)
	Business (General Business)			Business (General Business)
	Business (Light Industry)	Low	Low	Business (Industrial)
	Business (Local Centre Zone)	Low	Low	Business (Neighbourhood Centre)
Open Space	Open Space – Conservation Zone	Low	Low	Informal Recreation
Greenfield areas	Future Urban Zone	High	High	Urban
Other	Special Purpose – Quarry Zone	Low	Med	Quarry

² Based on AUP:OP zoning/policy direction

³ Based on Warkworth Structure Plan and AUP:OP zoning/policy direction

5.1.1 History and background

Warkworth, on the east coast of North Auckland, sits at the southern extent of the Mahurangi River where it discharges into the Mahurangi Harbour, which in turn feeds into the Hauraki Gulf. The Mahurangi estuary and river run through a landscape dominated by steep hills, valleys and waterways. The estuary itself has diverse environments, with several small bays, intertidal mudflats and subtidal areas, rocky platforms, and sandy beaches (Sinclair et al. 2013: 95). In addition to free-flowing streams, there are also wetlands to the north and west of Warkworth. Historically the inland areas were heavily forested with podocarp and broadleaf forests, including extensive kauri forests (Sinclair et al. 2013: 78).

Geologically Warkworth and the wider Mahurangi catchment are part of the Pakihi supergroup, with low-lying areas immediately surrounding the estuary featuring alluvial and colluvial gravels, sands, mud, and peats, with volcanic pumice and tephra ignimbrite deposits. This rests within a wider Waitemata Group sedimentary geology, with alternating beds of coarse to medium sandstones and fine siltstones and mudstone (Edbrooke 2001: 23, 26. <https://data.gns.cri.nz/geology/>). The soils within the Warkworth area consist of moderately well-draining alluvial soils along the river and estuary, and clay-rich, poorly draining soils further inland (SMaps).

5.1.2 Pre-European Māori settlement

The name Mahurangi comes from a story of the *Tainui* waka in the Māori ancestral homeland of Hawaiki, and belonged to an older woman whose powers enabled its construction (Farley and Clough 2007). The Tainui explorers of the area then gave the name Mahurangi to a small Island off Waiwera, and its surrounding bay. Later it was applied to the region as a whole. What is now the Mahurangi river was then Waihe (Murdoch 1989; ARC 2005). Mahurangi is part of a wider cultural landscape extending from the Waitematā Harbour in the south, Kaipara Harbour in the west and Te Arai Point in the north, characterised by an interrelated history of migration, occupation and conquest. Settlement patterns were mobile, with movement according to seasonal resource availability in the wider region.

Warkworth and its surrounds provided an abundance of resources, making them ideal areas for pre-European Māori settlement. The Mahurangi River and its associated network of waterways contained freshwater resources, as well as providing transport and communication networks. The Mahurangi estuary and harbour provided marine resources, with both rocky and sandy shores providing a range of shellfish. Marine fish was also plentiful, particularly the much sought-after shark fishing at nearby Matakana (Farley and Clough 2007). Inland, the forests provided birds for hunting, and kauri and totara for waka construction (Murdoch 1989). Pre-European Māori horticulture was also practiced in some areas, with warm, north facing sandy soils along the coasts suitable for kūmara cultivation, and wetlands for taro cultivation (Murdoch 1989).

This occupation sequence of Mahurangi is drawn largely from Murdoch (1989, 1992). The wider area of Mahurangi was initially settled by Ngāi Tāhuhu, with later movement in by Tainui/Arawa peoples from the Waitematā Harbour. Intermarrying with the previous peoples, by 16th century they were known as Ngāoho, occupying the area between the Waikato River and Kaipara harbour entrance, including Mahurangi (Murdoch 1989, 1992; Farley and Clough 2007). In the late 1600s Ngā Ririki, now Ngāti Whatua, migrated south from Hokianga to north Kaipara, led by Haumeowharangi (Murdoch 1989). The seven children of Haumeowharangi settled throughout the Kaipara area and they became the founding ancestors of the hapu groups that occupy the Kaipara district today (Murdoch 1989, 1992). As the influence of Ngāti Whātua grew in the southern Kaipara throughout the

early 18th century the name Te Kawerau was used less often and the name Ngāti Rongo became more commonly used (Murdoch 1989, 1992).

The abundance of resources in the area, including the fertile soils, forests, hot water springs at Waiwera, and the coveted shark fishing areas at the mouth of the Matakana River in Mahurangi, attracted the attention of other tribal groups throughout the region. Fighting between the Marutuahu tribes and the Kawerau people of Mahurangi began in the 1720s and continued throughout the 18th century, with at least one major battle taking place at Waiwera (Murdoch 1989). Land was not what was sought in Mahurangi, but rather the 'tauranga ika' or fishing grounds where thousands of sharks could be caught and dried in summer, and then taken home across the Hauraki Gulf to provide a valuable winter food source.

A peace-making meeting was called between the two tribal groups in the vicinity of Kakaha Pā on Maungatauhoro. However, this agreement disintegrated quickly and warfare between the two groups continued until the 1790s. In the 1820s Kawerau found themselves on the receiving end of a musket armed Ngāpuhi war party but Ngāpuhi were defeated at a battle at Mahurangi in 1820, where the Ngāpuhi leader Koriwhai was killed. In 1822 Ngāpuhi sought to avenge the death of Koriwhai. They attacked Kawerau at Te Kohuroa (Matheson's Bay) and after an initial setback emerged victorious (Murdoch 1992). In 1825 a large and important battle was fought in Auckland between Ngāti Whātua and the musket armed Ngāpuhi. Losses were considerable and the Mahurangi area was largely abandoned after the 1825 battle at Te Ika a Ranganui, but Māori began to return to the area from 1836.

5.1.3 Historic settlement

European influence was felt in the area from the 1820s with the arrival of the missionaries, including Reverend Henry Williams and Fairburn Shepherd of the Church Missionary Society (CMS) (Farley and Clough 2007). Under this influence, many Mahurangi Māori converted to Christianity by the 1840s (Morewood 1975).

The first Europeans to settle the area were sawyers, drawn by Mahurangi's kauri forests. Gordon Davis Browne and Captain Ranulph Dacre operated a spar station as timber traders in the Mahurangi, on the Pukapuka Peninsula by 1832 (Goldsmith 2003: 26). Browne had purchased the rights to cut timber from Hauraki Māori, several of whom were employed at the station (Farley 2007). When missionary Henry Williams visited the area in April 1833 he noted around 30 Māori and Pakeha workers (Goldsmith 2003: 26). Williams also wrote of the importance of school sharks as a resource (Roger 1961: 305). Browne's operation ended in 1834 with the arrival of convict ship HMS *Buffalo* and Captain Sadler (Goldsmith 2003: 27). Captain Sadler had permission from the Ngāpuhi chief Titore to harvest timber for the navy and took over both the operation and the workers (Farley 2007). The *Buffalo* had, according to Browne, 'spoiled' their workforce with their high payment, causing the Browne operation to move to the Coromandel in 1835 / 1836 (Goldsmith 2003: 27). Kauri logging continued as a key industry in Mahurangi until the 1930s, with many subsequent industries based on its timber. Mahurangi's first sawmill, known as 'Brown's Mill,' along with a dam and water-race, was established in 1844 by John Brown in what would become Warkworth, just as Mahurangi was transitioning from a timber camp to a more permanent settlement (ARC 2005; Keys 1954: 33).

In 1840 Surveyor General Felton Mathew, seeking a site for Hobson's new capital, thought Mahurangi Harbour 'admirably adapted for the site of a town', and in April 1841 negotiations for the Mahurangi purchase had begun (Goldsmith 2003: 27). The land from Te Arai Point, north of Warkworth, to Devonport in the south, over 1000 km², was sold by Ngāti Paoa to the crown in 1841. This sale,

however, was negotiated with the resident Hauraki peoples only, without consultation of Ngāti Raupo, Ngāti Rongo and Ngāti Manuhiri, in what Goldsmith calls a “hastily arranged and poorly documented” deal (Goldsmith 2003: 27; Murdoch 1991: 7). In 1853 John Anderson Brown, of Brown’s Mill, would purchase 153 acres from the Crown, establishing a small township named Warkworth for his home in Northumberland (Bioletti 1996: 5; Farley and Clough 2007).

The ample timber provided by inland forests led to a local shipbuilding industry in Mahurangi from 1849. The first ship was launched from a small bay south of Cowans Creek in 1852, with at least 74 further vessels being built in the area by 1880 (Farley and Clough 2007) (ARC 2005). In 1852 Thomas Scott Senior purchased land for a shipyard and Inn at the end of the Te Kapa Peninsula. His son would build the Scott Homestead, which still stands (Bailey 2006: 13). Production of quicklime also took place along the Mahurangi River, with lime kilns established by 1850, and Wilsons Cement Works in 1872 (ARC 2005). The hydraulic lime produced in the kilns of Warkworth would be used for mortar and plaster for the local buildings, bridges, farm roads, and to produce Portland Cement (Bioletti 1996: 6). Over time, as the forests around Warkworth were logged away, the surrounding land was converted to farms (ARC 2005).

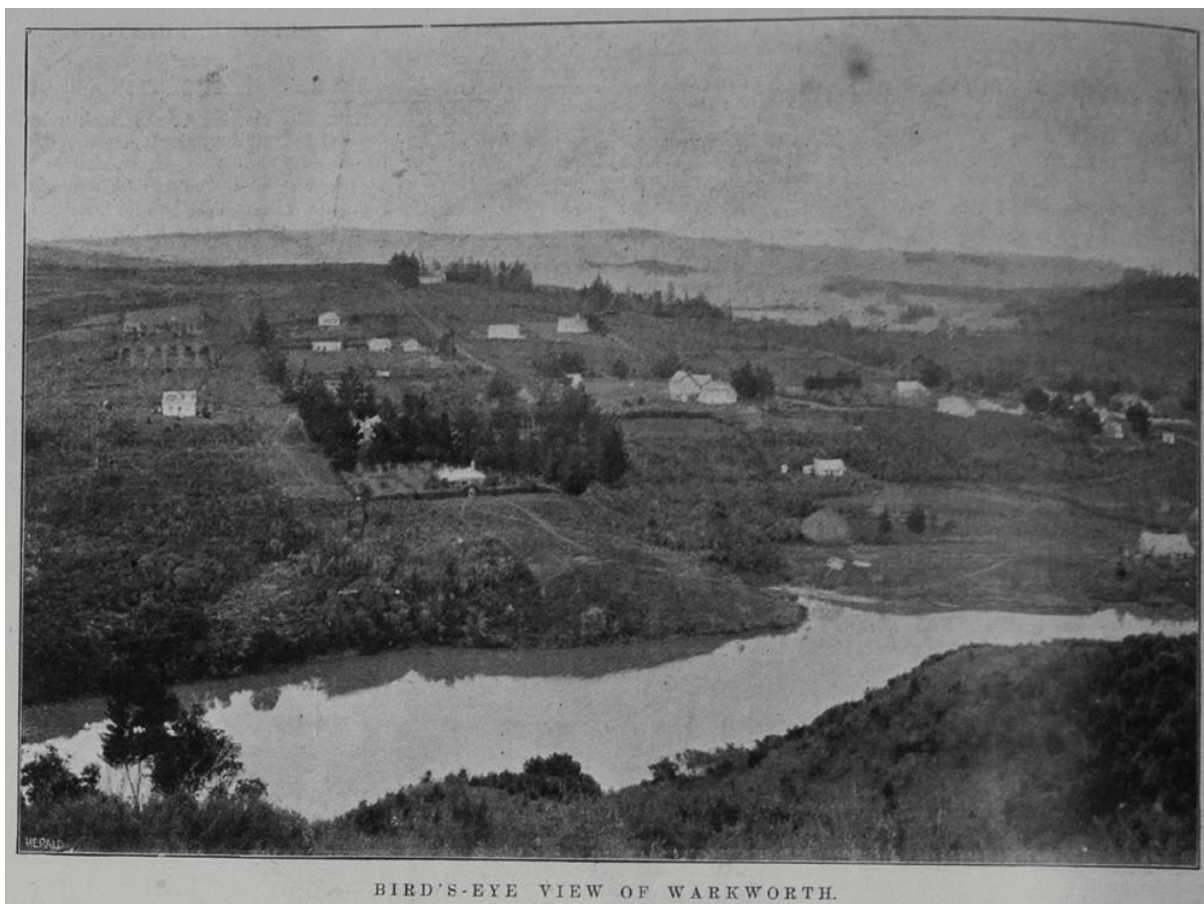


Figure 2. Photo of Warkworth c. 1890 - 1899. <https://digitalnz.org/records/30086951/birds-eye-view-of-warkworth#copyright>



Figure 3. View of the Warkworth Wharf from Auckland Weekly News, c. 1890 – 1899.
<https://digitalnz.org/records/30086952/view-of-the-warkworth-wharf-with-ss-kapanui-at-berth>



Figure 4. Lime chute at Warkworth cement works, c. 1910-1920.
<https://digitalnz.org/records/41746758/lime-chute-at-warkworth-cement-works>

5.1.3.1 WWII

During WWII New Zealand served as a staging post for US forces operating in the Pacific. A number of United States military camps were constructed around Auckland, including a brigade camp of 41 small farm encampments, headquarters and a 30-bed hospital at Warkworth (Brassey 2018: 10).

A number of military divisions were stationed around Warkworth, with many memories of their presence recorded in local histories (Canal 2006; Bioletti 1989). The structures in the camps tended to be prefabricated two or four man huts, constructed of native timber, as well as tents with wooden floors and pot-belly stoves (Bioletti 1989:11). After the war, many of the structures continued to be used around Warkworth. Canal (2006) notes that almost every farm in the district had a hut which could be used for calf sheds, hay storage, general sheds and sleeping quarters for workers on the farm. Much of the concrete flooring from the complexes was broken up and reused to make a retaining wall at the school on Hill Street.

5.1.4 Archaeological background

Despite the SRS showing 138 archaeological sites recorded within 5 km of Warkworth's town centre, very little archaeological investigation has been carried out within the project area. A general review shows a pattern of pre-European Māori sites along waterways, particularly the Mahurangi River, Estuary and Harbour, with historic non-Māori sites inland and throughout the township itself. The pre-European Māori sites are predominantly shell midden, oven and terrace sites, while the historic sites tend to be industrial structures such as the lime kilns or dams and historic homes. The uneven

distribution of investigation in the area has led to large gaps in the archaeological record of Warkworth and Mahurangi.

Investigations were undertaken for the subdivision of McKinney Road in 2008, relatively near the NOR 3. This investigation found no evidence of archaeological sites, and noted that the heavy clays of the hill country south of Warkworth were unsuitable for pre-European Māori horticulture (Hooker 2008). The discovery of a cluster of wooden artefacts, kō, in wetlands along Carran Road (near NOR 2) indicates that previously unrecorded pre-European Māori archaeology may still be present in inland areas. Assessments undertaken for Te Ara Tuhono, the Puhoi to Wellsford extension road, which runs to the west of Warkworth intersecting with Carran Road (near NOR 2), found that the US military camps located in that area were the main heritage site, CHI 17005 and CHI 17006.

In 2018 Robert Brassey of Auckland Council undertook surveys of the historic heritage of Warkworth (Brassey 2018). This included site visits and updates on the condition of many of the historic structures in and around Warkworth, though no further archaeological investigation was reported on.

6 Warkworth NORs – Overall network

This section assesses common or general archaeological and heritage matters across the overall Warkworth Project, i.e., the combination of public transport interchanges, existing road upgrades and new corridors. This section also recommends measures to avoid, remedy or mitigate actual or potential adverse effects for the overall network. Corridor-specific matters, where applicable, are further discussed in the following report sections.



6.1 Assessment of construction effects

The proposed designations run through areas of undeveloped pasture where they do not follow existing roads, and cross or run alongside several free-flowing streams. Where specific archaeological sites are recorded and have potential to be impacted by the proposed works, these are discussed separately below. Across the proposed works areas as a whole, there is a risk for unrecorded archaeological sites to be encountered by works and subsequently damaged or destroyed.

The proposed designations were walked over where possible, though in many areas the rural roads were not safe for pedestrian access and needed to be driven through, and visibility in many areas was poor due to dense vegetation around the existing roads. The field assessment was constrained primarily to publicly accessible areas, with one private property accessed in NOR 2. No unrecorded sites were identified during the survey.

The types of subsurface archaeological sites most likely to be encountered when works begin could be pre-European Māori sites, such as middens or artefact finds, or colonial sites such as rubbish pits and glass or ceramic artefacts, or material related to industrial sites like lime works.

6.2 Recommended measures to avoid, remedy or mitigate construction effects

It is recommended that, prior to works starting, an authority to damage or destroy recorded sites (R09/2244, R09/2247, R09/2253, R09/2284), which are discussed in more detail under specific NORs below, and any unrecorded archaeological sites and any other archaeological features that may be encountered within the identified works areas be applied for from HNZPT under Section 44 of the HNZPTA. No authority should be applied for without consultation with the appropriate tangata whenua authorities; evidence of consultation and views expressed will be required by HNZPT and will be taken into account when making a decision about the granting of the authority.

While any unrecorded post-1900 sites are not protected under the HNZPTA, they can still hold historic heritage values. If such a site is encountered during works, the site should be assessed by the archaeologist and investigated in accordance with a historic heritage management plan, as described below. Auckland Council will be notified if any unrecorded post-1900 sites with heritage values are identified.

During works, archaeological / heritage monitoring will take place in higher-risk areas, which will be identified in a historic heritage management plan. If any unrecorded archaeological / heritage material is encountered, it can be recorded, sampled, and analysed as is appropriate in order to mitigate any damage to archaeology/heritage following standard archaeological best practice. Appropriate tikanga (protocols) should be followed during works – mana whenua may make recommendations outlining these.

In the event of kōiwi (human remains) being uncovered during any future construction, work should cease immediately and the appropriate tangata whenua authorities should be contacted so that suitable arrangements can be made. As archaeological survey cannot always detect sites of traditional significance to Māori, or wāhi tapu, the appropriate tangata whenua authorities should be consulted regarding the possible existence of such sites, and the recommendations in this report.

6.3 Assessment of operational effects

No general operational effects have been identified across the Warkworth Project.

6.4 Summary and Conclusions

Most of the proposed designations pass through relatively undeveloped pastoral land where they do not follow existing roads, often crossing or running beside streams. There is potential for unrecorded pre-European Māori or colonial sites to be present within any of the NORs, in addition to those recorded sites which are discussed below. Maps of the project areas and recorded sites are shown below. As seen in Figures 5 and 6, there are known recorded archaeological and heritage sites near NOR 2, NOR 4, NOR 5, NOR 6 and NOR 8, discussed in detail below. There are no known sites in NOR 1, NOR 3 or NOR 7, and they are not discussed further, though there is potential for unrecorded subsurface archaeology to be present.

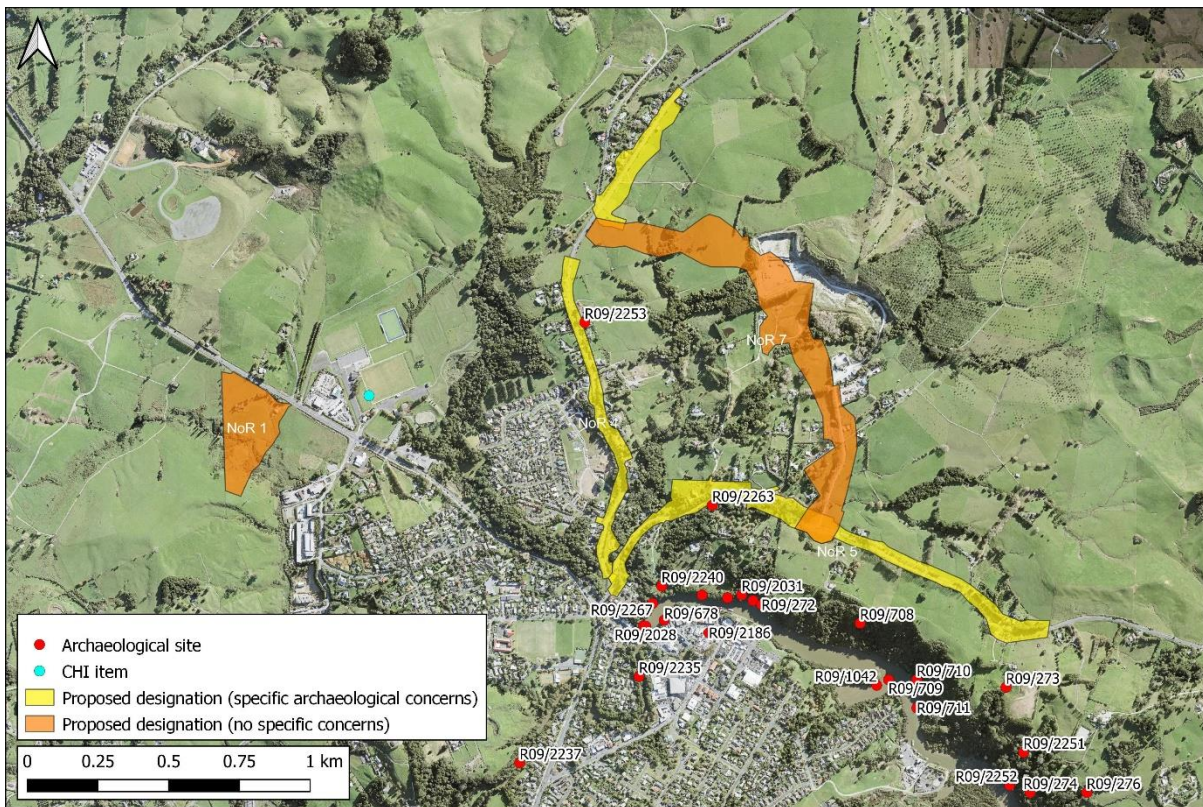


Figure 5. Map of the northern half of the project area showing nearby archaeological sites and those NORs which are discussed in depth below (Proposed designations based on Rev A drawings).

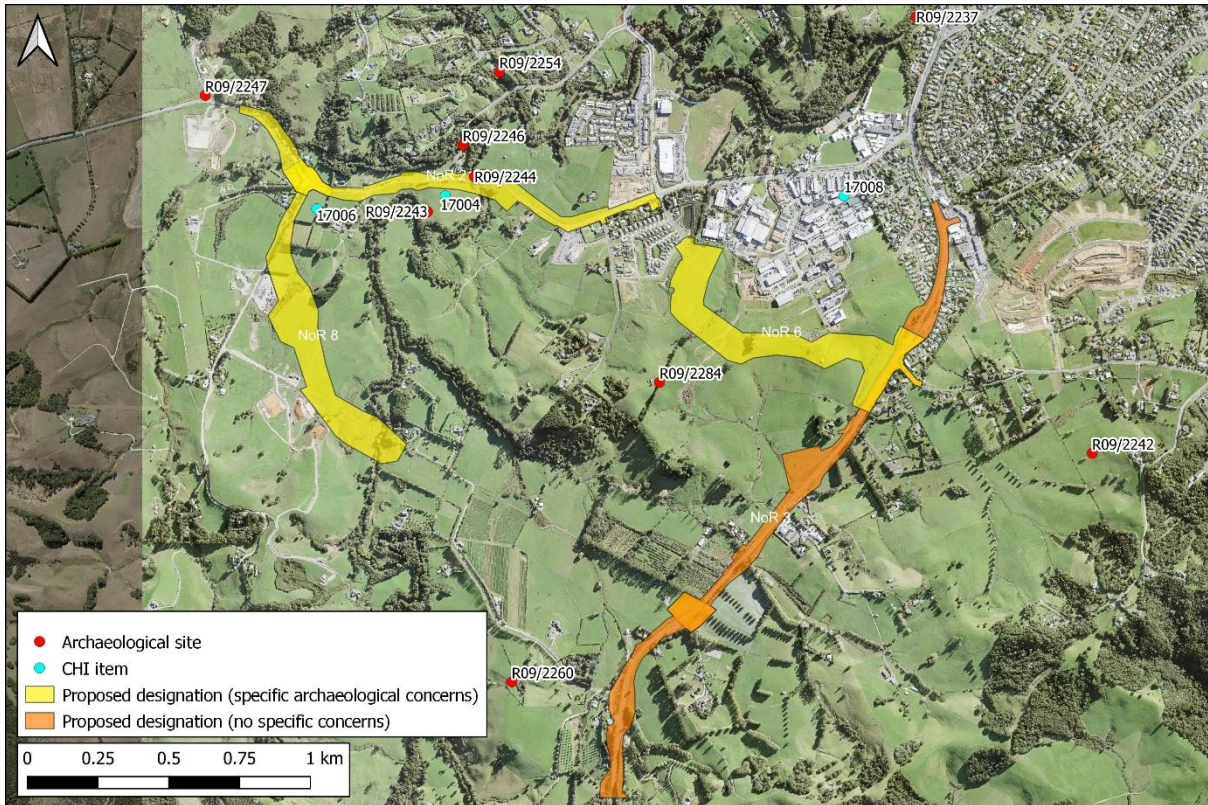


Figure 6. Map of the southern half of the project areas showing nearby archaeological sites and those NORs which are discussed in depth below (Proposed designations based on Rev A drawings).

Table 6. Summary of Assessment of Effects of Recommendations – Overall network

Effect	Assessment	Recommendation
Construction		
Unrecorded sites	Potential damage to sites	Archaeological authority and monitoring
Operational		
No operational effects have been identified	N/A	N/A

7 NOR 2 – Woodcocks Road – West Upgrade

This section assesses specific archaeological and heritage matters relating to NOR 2 – Woodcocks Road.

7.1 Overview and description of works

Refer back to the AEE for a more detailed description of works to be authorised. For the purposes of this report and until detailed earthworks plans are available, it is assumed, unless otherwise described, that anything within the proposed designation has potential for ground disturbance that could impact subsurface archaeological features. The bulk of earthworks will take place within the construction areas set out in Volume 3 of the AEE.

7.2 Assessment Features

Four archaeological sites are recorded in the NZAA SRS within 200 m of the proposed works, as well as two items recorded in the Auckland Council CHI. These sites are described below.

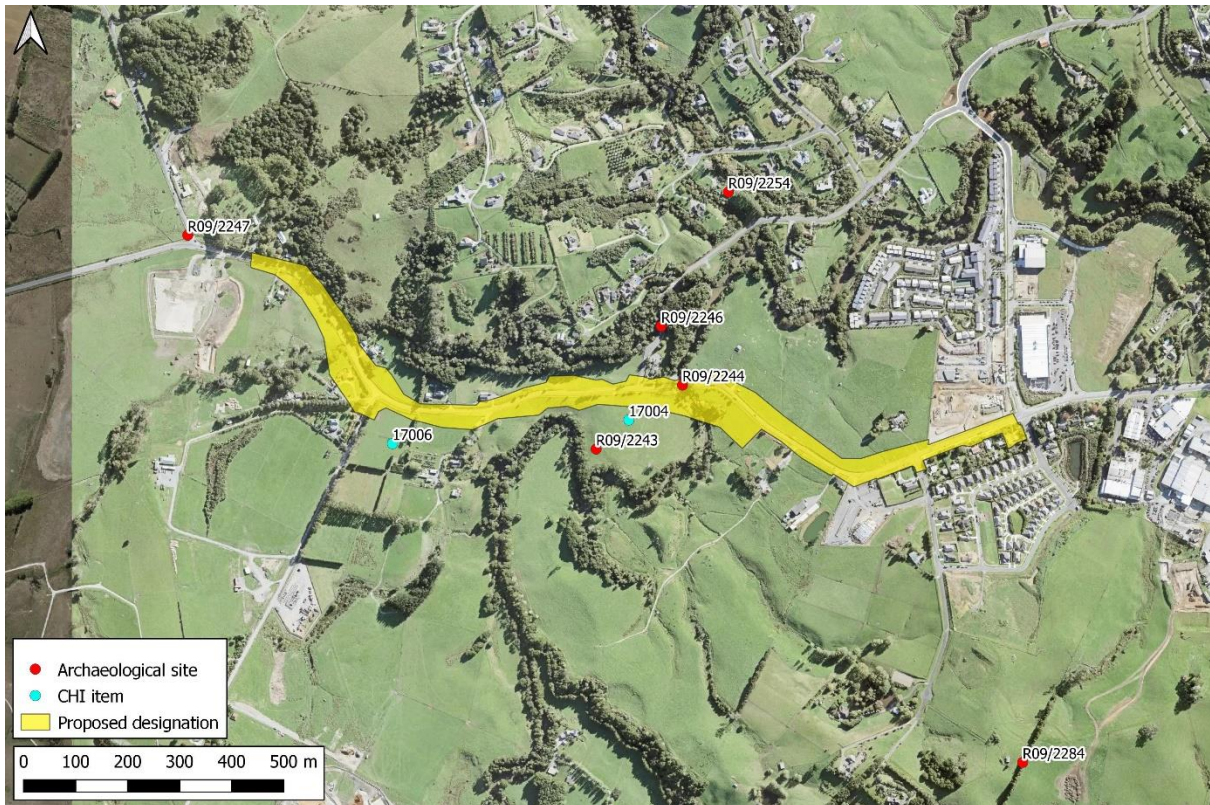


Figure 7. Map of NOR 2, showing nearby archaeological and heritage sites (Proposed designation based on Rev A drawings).

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall Warkworth package.

7.2.1 R09/2243 – Cherry’s Hut

This site was recorded by Robert Brassey in 2018 and is the location of landowner and surveyor Francis Cherry’s hut, identified from old plans (SO 1150K and SO 891E). Though he owned the

property, he primarily resided in Auckland. Brassey's site visit found no surface evidence of the hut, but he noted that subsurface material was likely present.

This site was walked over during a field assessment for this project. It appears largely unchanged since it was recorded; the paddock remains in pasture and has not been subject to any recent building or earthworks. It is likely that subsurface remains are still present, with the landowner mentioning that they had seen all sorts of glass and ceramic fragments in the ground around their property, though they are unlikely to be within the proposed designation.



Figure 8. View towards Cherry's Hut (R09/2243), no surface remains visible.

7.2.2 R09/2244 – Cherry's Bridge

This site was also recorded by Brassey in 2018. Originally known as Junction Bridge or Trethowen's Bridge, the bridge was renamed Cherry's Bridge after some kind of controversy involving the local landowner Francis Cherry. The original bridge was constructed in 1859, and after being washed away in a flood, a second bridge was rebuilt in 1894. The current bridge is a c.1937 construction. During Brassey's 2018 site visit, no surface evidence of the 19th century structures was visible due to vegetation.

An attempt was made to view this site during the field assessment for this project, but the dense vegetation on the eastern river bank meant there was little to no visibility from that point. The current bridge was not safely accessible on foot, being a one-lane bridge with heavy industrial traffic. The landowner briefly mentioned that he may have seen some evidence of where the original bridge was (immediately south of the current bridge) but he did not provide any further detail or state when this was (the family has owned the property for around 80 years).

There is some potential that piles or other structures from a pre-1900 bridge are still present, obscured by the tide or vegetation, and could be affected by works.



Figure 9. View towards the location of Cherry’s Bridge (209/2244), no surface remains visible with the vegetation.

7.2.3 R09/2246 – Track and Ford

This site was recorded by Brassey, who visited the site in 2018. The natural ford over a low waterfall on the left branch of the Mahurangi River was crossed by a historic track to the Puhinui Falls, likely based on an older Māori pathway to the west coast. The road now crossing this ford has evidence of an older gravel road beneath it, and cuttings in a bank north of the crossing. This site is outside of the proposed designation.

7.2.4 R09/2247 – Artefacts

This site was recorded by Rod Clough and Richard Shakles in 2018, during earthworks for construction of the Ara Tuhono. A number of wooden artefacts were encountered in a peat deposit in a former tributary of the Mahurangi River. These included a number of kō (digging sticks), both fragmentary and nearly complete; a pūriri teka (foot piece of a kō); a rātā post with toki markings and; a possible handle of worked Manuka. Shakles notes that these were in a secondary deposition which was likely stream washout, although they may have been part of a cache, as the area is a floodplain suitable for taro horticulture (SRS).

These artefacts have all been removed from the site for conservation, but there is potential for additional subsurface artefact finds to be present nearby, particularly towards the eastern edge of proposed works.

7.2.5 17004 (CHI) – WWII Camp

This item was listed in 2007 by Leah Stevens. It is the site of one of several United States WWII camps around Woodcocks Road. These camps were dismantled following 1944, with many of the structures relocated to other properties in Warkworth. Survey of the area in 2019 noted concrete remains which appeared similar to remains at related camps, including fragments of concrete with water-rolled pebble inclusions, thought to be used within larger structures in the camps such as ablution blocks, kitchens and general foundations (Clough 2019).

This site was walked over during the field assessment for this project and blocks of broken concrete were present across much of the paddock, including directly south of the road, within the extent of the proposed designation. The landowner reported that people fossicking with metal detectors were sometimes present. It is likely that, beyond the concrete blocks, minimal material is present, but there is some potential for material to be present within the proposed designation.

7.2.6 17006 (CHI) – WWII Camp

This item was also listed by Stevens in 2007. It is another United States WWII camp, one of several which were located around Woodcocks Road. These camps were dismantled following 1944, with many of the structures relocated to other properties in Warkworth. Survey of the area in 2019 noted concrete remains which appeared similar to remains at related camps, including fragments of concrete with water-rolled pebble inclusions, thought to be used within larger structures in the camps such as ablution blocks, kitchens and general foundations (Clough 2019).

This site was briefly viewed from the roadside during the field assessment for this project. No evidence related to the camp was visible. There are unlikely to be any effects on this site based on the extent of the proposed designation and condition of the site.

7.3 Assessment of construction effects

Of the four archaeological sites and two CHI items within 200 m of the proposed works, two are outside of the proposed designation. These are R09/2243 (Cherry's Hut), and R09/2246 (track and ford). 17006 (WWII Camp) is likely partially within the proposed NOR but it is unlikely to have any in situ remains present that could be affected by works.

There is some potential for archaeological or historic material and features from R09/2244 (Cherry's Bridge), R09/2247 (artefacts), and 17004 (WWII Camp) to be affected by works. These sites are assessed below, with sites recorded in the SRS assessed under the HNZPTA and those recorded in the CHI assessed under the AUP, Chapter B5. The following assessments of values and significance relate only to archaeological values. Other interested parties, in particular mana whenua, may hold different values regarding the sites.

7.3.1 Assessment under the HNZPTA

The following assessments of archaeological values are based on the criteria set out in the HNZPTA (2019).

7.3.1.1 R09/2244 – Cherry's Bridge

Condition	The pre-1900 bridges have both been destroyed, but remnants of piles or cuttings in the river bank may still be present.
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Rarity	Remains of pre-1900 bridges are not common.
Context	This site has relatively high context value in terms of its relation to the rest of Cherry's properties and land use, and the early European settlement / colonisation of Warkworth.
Information	This site could provide some information on the construction materials and methodologies used in bridge construction and design in the mid to late 1800s.
Amenity	The site is not currently accessible by the general public.
Cultural	This is a colonial period site.

7.3.1.2 R09/2247 – Artefacts

Condition	The known material from this site has been removed but additional deposits of artefacts may be present in the surrounding area.
Rarity	Intact wooden artefacts are not common regionally or nationally.
Context	This site has high contextual values as an indicator of pre-European Māori land use, as it relates to the wider archaeological context in the area and can be used as an indicator of where larger scale archaeological landscapes may exist in an under-recorded area.
Information	This site has potential to inform on pre-European Māori tool construction and use, horticulture and land use.
Amenity	The site is not accessible by the general public.
Cultural	This is a pre-European Māori site.

7.3.2 Assessment under AUP Chapter B5

The following assessment of values follows the Auckland Council Methodology for Evaluating Historic Heritage Significance (2019).

7.3.2.1 17004 – WWII Camp

Historical	The site is part of New Zealand and United States history during WWII. This site has moderate historical value.
Social	This site is not visible to the general public and has no social value.
Mana whenua	Only mana whenua can comment on the value of the site to them.
Knowledge	There is very limited physical evidence remaining on the surface, and likely only small amounts of material remaining subsurface. A little information regarding the use of the camp and materials used for construction may be able to be gained. The site has low knowledge value.
Technology	There is unlikely to be any unique or innovative technological attributes remaining at this site. This site has no technology value.

Physical	There is unlikely to be any notable or representative elements of style and construction remaining at this site. This site has no physical value.
Aesthetic	There is very limited surface remains at this site and what remains is broken and obscured by grass. This site has no aesthetic value.
Context	This site has contextual value in terms of its place within the other WWII com. This site has moderate contextual value.

This site has moderate values based on its highest values, which are its historical and context values. Retention of these values is desirable but it does not warrant any special protections and any loss of heritage values can be mitigated by archaeological monitoring and the recording, sampling, analysis, and reporting of any materials or features encountered.

7.4 Recommended measures to avoid, remedy or mitigate construction effects

Recommended measures to mitigate construction effects are outlined in Section 6.

7.5 Summary and Conclusions

The proposed works have potential to damage two archaeological sites recorded in the NZAA SRS (R09/2244 and R09/2247) and one site scheduled in the Auckland Council CHI (17004). An archaeological authority will need to be obtained from HNZPT to modify any pre-1900 sites (R09/2244 and R09/2247) and works near these sites will need to be monitored to record any archaeological material that may be impacted by works.

Table 7. Summary of Assessment of Effects and Recommendations – Woodcocks Road upgrade

Effect	Assessment	Recommendation
Construction		
R09/2244	Potential damage to site	Archaeological authority and monitoring
R09/2247	Potential for additional artefacts to be found and removed	Archaeological authority and monitoring
17004 (CHI)	Potential damage to site	Archaeological monitoring

8 NOR 4 – Matakana Road Upgrade

This section assesses specific archaeological and heritage matters relating to NOR 4 – Matakana Road.

8.1 Overview and description of works

Refer back to the AEE for a more detailed description of works to be authorised. For the purposes of this report and until detailed earthworks plans are available, it is assumed, unless otherwise described, that anything within the proposed designation has potential for ground disturbance that could impact subsurface archaeological features. The bulk of earthworks will take place within the construction areas set out in Volume 3 of the AEE.

8.2 Assessment Features

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall Warkworth package. One archaeological site is recorded within 200 m of the proposed works area in the NZAA SRS. This is R09/2253, a historic domestic site. This site is described below.

8.2.1 R09/2253 – House

This site was recorded by Robert Brassey in 2018. It is a timber cottage built by George Young in the mid-1870s at 190 Matakana Road. The site is also recorded in the Auckland Council CHI as 2219. He is thought to have built the home for his daughters, but it is unclear if they or any of the Young family ever lived there. The house is typical of the era and is clad in the original timber boards. In the 1970s, it was restored and altered. A new wrap-around verandah was installed as well as a new lean-to and dormers. An outhouse remaining on the property is early, though the exact date is unknown, and the barn was relocated from another part of the farm to its current location. Five oak trees dating to the late 19th century are present on the property. During Brassey's site visit, the owner said that the stream gully west of the house was a bottle dump but had been well fossicked by bottle collectors.

This property was viewed from the roadside and the carpark entrance during the field assessment for this project. Despite fossicking and significant modification to the grounds (i.e., driveway and landscaping), some historic material may still be present beneath the surface within the scope of the proposed works. The proposed designation does extend into the property and includes a later 20th century garage and ancillary buildings constructed adjacent to the house. The 19th century cottage itself lies immediately outside the proposed designation boundary.

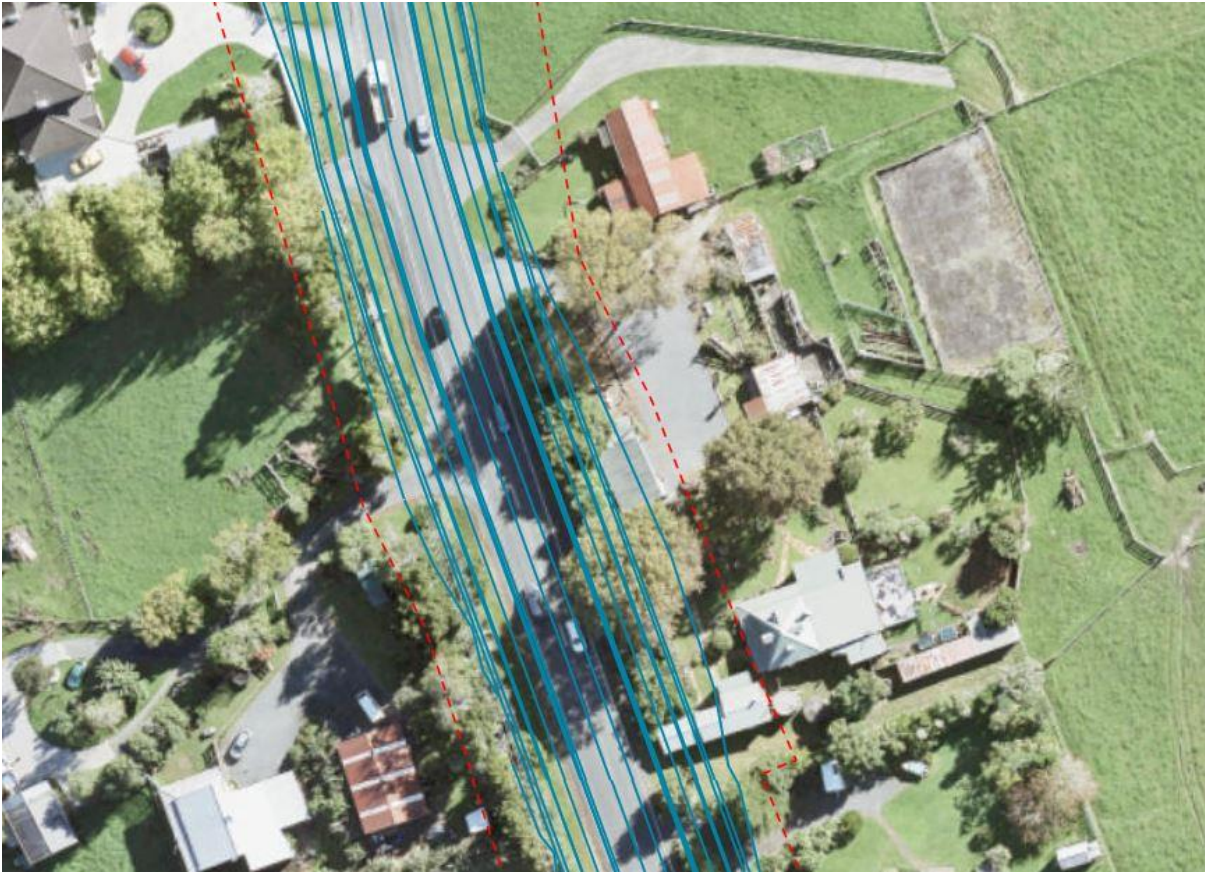


Figure 10. Extent of proposed designation and R09/2253.



Figure 11. View of 19th century cottage from entrance to carpark.

8.3 Assessment of construction effects

There is some potential for subsurface archaeological or historic material from R09/2253 (domestic) to be affected by works. Additionally, construction of the road berm would require removal of the modern (non-archaeological) ancillary buildings and garage (Figure 10 **Error! Reference source not found.**). This does not impact on archaeological or other historical values associated with the cottage itself, though there is potential for the removal of the garage and ancillary buildings to result in accidental damage to the cottage. This risk could be actively managed through the HHMP.

This site is assessed below. The following assessment of values and significance relates only to archaeological values. Other interested parties, in particular mana whenua, may hold different values regarding the sites.

8.3.1 Assessment under the HNZPTA

The following assessments of archaeological values are based on the criteria set out in the HNZPTA (2019).

8.3.1.1 R09/2253 – Domestic

Condition	The property has been fossicked but it is likely that some subsurface material remains. The cottage itself is extant with only minor modifications visible.
Rarity	The cottage is an early surviving example of vernacular Mid-Late Victorian architecture, which is not common in the region.
Context	This site has moderate contextual value being part of the early European settlement / colonisation of Warkworth.
Information	This site could provide some information on the use of homesteads and farms at Warkworth in the colonial period and on construction techniques and materials used throughout this time.
Amenity	The site is on private property. There is little opportunity for amenity values to be enhanced in terms of public access, but the cottage is partially visible from the public realm.
Cultural	This is a colonial period site.

8.4 Recommended measures to avoid, remedy or mitigate construction effects

Recommended measures to mitigate construction effects are outlined in Section 6.

8.5 Summary and Conclusions

The proposed works have potential to damage an archaeological site recorded in the NZAA SRS R09/2253). An archaeological authority will need to be obtained from HNZPT to modify any pre-1900 sites (R09/2253) and works near this site will need to be monitored to record any archaeological material that may be impacted by works.

Table 8. Summary of Assessment of Effects and Recommendations – Matakana Road

Effect	Assessment	Recommendation
Construction		
R09/2253	Damage to site and effects on cottage setting	Archaeological authority and monitoring. HHMP to control construction activity in vicinity of cottage, and replacement planting scheme when works completed.

9 NOR 5 – Sandspit Road Upgrade

This section assesses specific archaeological and heritage matters relating to NOR 5 – Sandspit Road.

9.1 Overview and description of works

Refer back to the AEE for a more detailed description of works to be authorised. For the purposes of this report and until detailed earthworks plans are available, it is assumed, unless otherwise described, that anything within the proposed designation has potential for ground disturbance that could impact subsurface archaeological features. The bulk of earthworks will take place within the construction areas set out in Volume 3 of the AEE.

9.2 Assessment Features

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall Warkworth package.

One archaeological site is recorded within 200 m of the proposed works area in the NZAA SRS. This is R09/2263, a dam. This site is described below.

9.2.1 R09/2263 – Wilsons Portland Cement Company Dam

This site was recorded in 2018 by Robert Brassey. It is the likely site of a dam from the later 1870s or early 1880s used for water supply for steamers in Warkworth and is also recorded in the CHI as 21947. The extant dam is a 1913 concrete gravity arch dam. The 1913 dam was reported to be in good condition, viewed from a distance in 2018, but no evidence of the pre-1900 dam was visible. Brassey notes however that poor access and dense vegetation means visibility was poor.

An attempt to view this site was made during the field assessment for this project, but the site was not visible from the road, and access from further downstream was unsuccessful. Brassey (2020) mapped the area of the dam itself and identified an area surrounding the dam that had potential for encountering material related to the historic dam (Figure 12). While the proposed designation does intersect with the edge of this wider area, the proposed works area avoids the physical location of R09/2263. Indirectly, there is potential for upstream changes to influence the flow of water to the dam, which could introduce long-term changes that affect the dam over time.

As part of Plan Change 81, the 1913 Wilson Portland Cement Company Concrete Dam has been proposed for inclusion as a Category B place into Schedule 14.1 of the Auckland Unitary Plan (Brassey 2020). It is recommended for inclusion on the following basis:

Significance Criteria (A-H)	Value	Geographic context
Historical	Moderate	Local
Social	Little / None	N/A
Mana Whenua	N/A	N/A

Significance Criteria (A-H)	Value	Geographic context
Knowledge	Moderate	Local
Technology	Moderate	Regional
Physical	Considerable	Regional
Aesthetic	Little	Local
Context	Considerable	Local



Figure 12. Map of proposed designation and works in relation to extent of R09/2263 as identified by Brassey (2020).



Figure 13. Bank from roadside drops very steeply to the right in this image, dam (R09/2263) is located below in the bush.



Figure 14. Image from Auckland Council Plan Change 81 Historic Heritage Evaluation report: Wilson Portland Cement Company Dam Appendix 2 (Auckland Council 2020) showing downstream face of dam.

9.3 Assessment of construction effects

As works around R09/2263 are confined to the upper bank at the edge of the current Sandspit Road, there are not likely to be any construction effects on this site. However, during the site walkover, several very sparse scatters of highly fragmented redeposited shell were visible beside the current road. These scatters of shell were near the western end of the road. One scatter was immediately east of the Matakana Road junction, with another at the first crossing of a Mahurangi River tributary heading east. This shell was likely redeposited from a midden at some stage during construction of the road or bridge, indicating an increased likelihood that an unrecorded in situ midden could be present within the proposed designation. The approximate location of these scatters are shown in Figure 15 below.

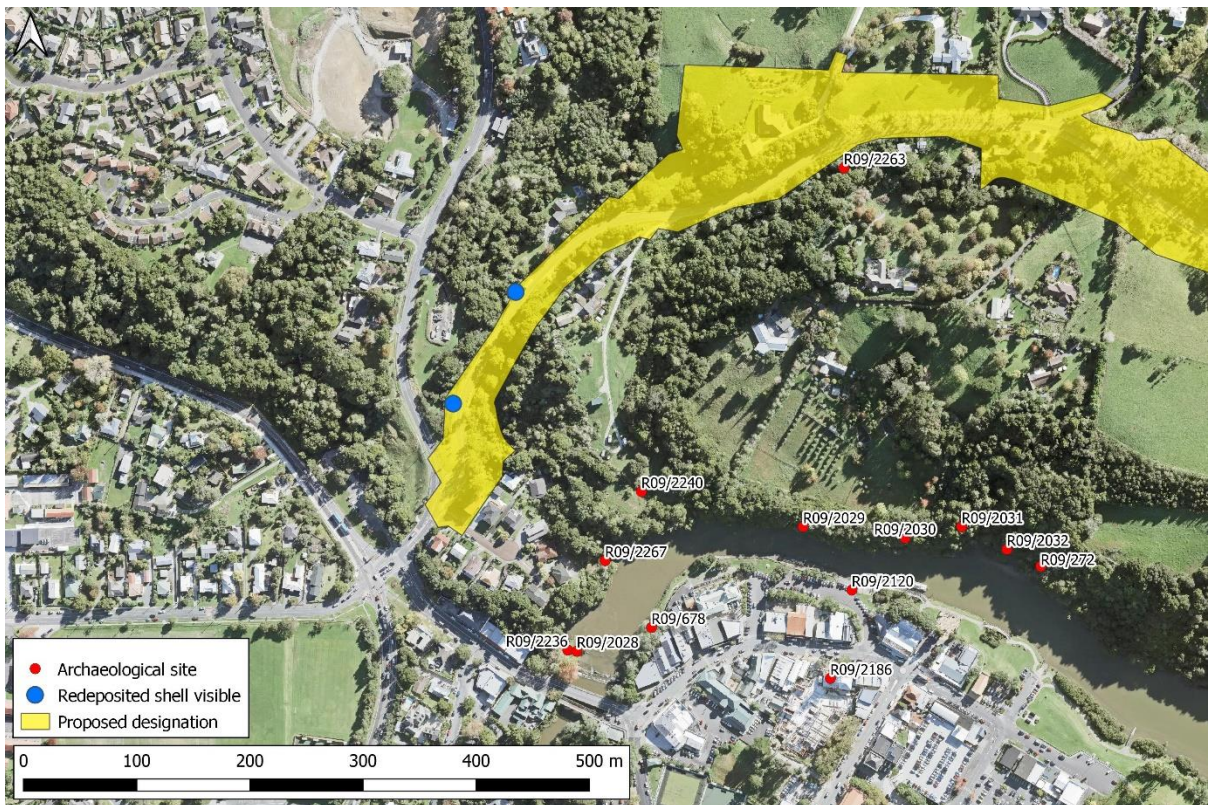


Figure 15. Areas along Sandspit Road where traces of redeposited midden were visible, marked in blue.



Figure 16. Tributary crossed by Sandspit Road beside which small scatters of shell were visible.

9.4 Recommended measures to avoid, remedy or mitigate construction effects

Recommended measures to mitigate construction effects are outlined in Section 6.

9.5 Assessment of operational effects

Upstream works to R09/2263 / CHI 21947 will affect the flow of water and potentially this will influence the effect of water abrasion on the Wilson Portland Cement Company Dam over time. Given the material and solid nature of the dam the potential for cumulative change as a result of operational effects is assessed as limited, when considering that similar weathering effects are already generated in the existing environment. There is potential to manage this change through the provisions of the HHMP. This can include structural assessment of the dam, modelling of upstream design to determine change of flow rates, and design of any requirements to manage those flows further downstream. in the vicinity of the historic dam.

9.6 Summary and Conclusions

There is a recorded archaeological site within 200 m of the proposed works and designation but the current plans indicate that this site will not be impacted by works. There are small scatters of redeposited shell within the proposed designation meaning that in situ midden may be present within the designation as well. An archaeological authority will need to be obtained from HNZPT to modify any potential unrecorded sites (such as potential midden deposits) and works in the areas with increased potential of encountering archaeology will need to be monitored by an archaeologist.

Table 9. Summary of Assessment of Effects and Recommendations – Sandspit Road

Effect	Assessment	Recommendation
Construction		
Potential unrecorded midden.	Potential damage to site.	Archaeological authority and monitoring.
Operational		
R09/2263 – Dam	Potential increased weathering/ water scour on structure over time because of changing water flow	Manage through HHMP, taking structural condition and flow rates into account.

10 NOR 6 – Western Link - South

This section assesses specific archaeological and heritage matters relating to NOR 6 – Western Link South.

10.1 Overview and description of works

Refer back to the AEE for a more detailed description of works to be authorised. For the purposes of this report and until detailed earthworks plans are available, it is assumed, unless otherwise described, that anything within the proposed designation has potential for ground disturbance that could impact subsurface archaeological features. The bulk of earthworks will take place within the construction areas set out in Volume 3 of the AEE.

10.2 Assessment Features

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall Warkworth package. There is one archaeological site recorded in the NZAA SRS within 200 m of the proposed works. This site is described below.

10.2.1 R09/2284 – Road

This site was recorded by Glen Farley and Aaron Apfel in 2021. It is a road bench described on a survey plan from 1855 (SO 1150E), with several sections still visible and being used as farm tracks.

During the field assessment for this project an attempt to view this site from SH1 was made, but the road bench was not visible.

10.3 Assessment of construction effects

Based on LiDAR imagery, parts of R09/2284 (road) are evident within the proposed designation (Figure 17) and will be affected and partially destroyed by works. However, recently consented earthworks associated with the subdivision to the north were undertaken in 2019 and 2020 prior to identification of the site. These have impacted on the remains of the roadway within the property boundary of 25 Gumfield Drive. The site condition was assessed by Plan Heritage Ltd in January 2023 as part of an unrelated subdivision application (Plan Heritage 2023). This included visual assessment, test pitting and probing. The area was found to be modified within the extent of the subdivision earthworks, with surviving elements discernible in the neighbouring property to the east, and further west. Much of the road bench within the proposed designation has been destroyed by these works (Figure 18). The following assessment of values and significance relates only to archaeological values. Other interested parties, in particular mana whenua, may hold different values regarding the sites.

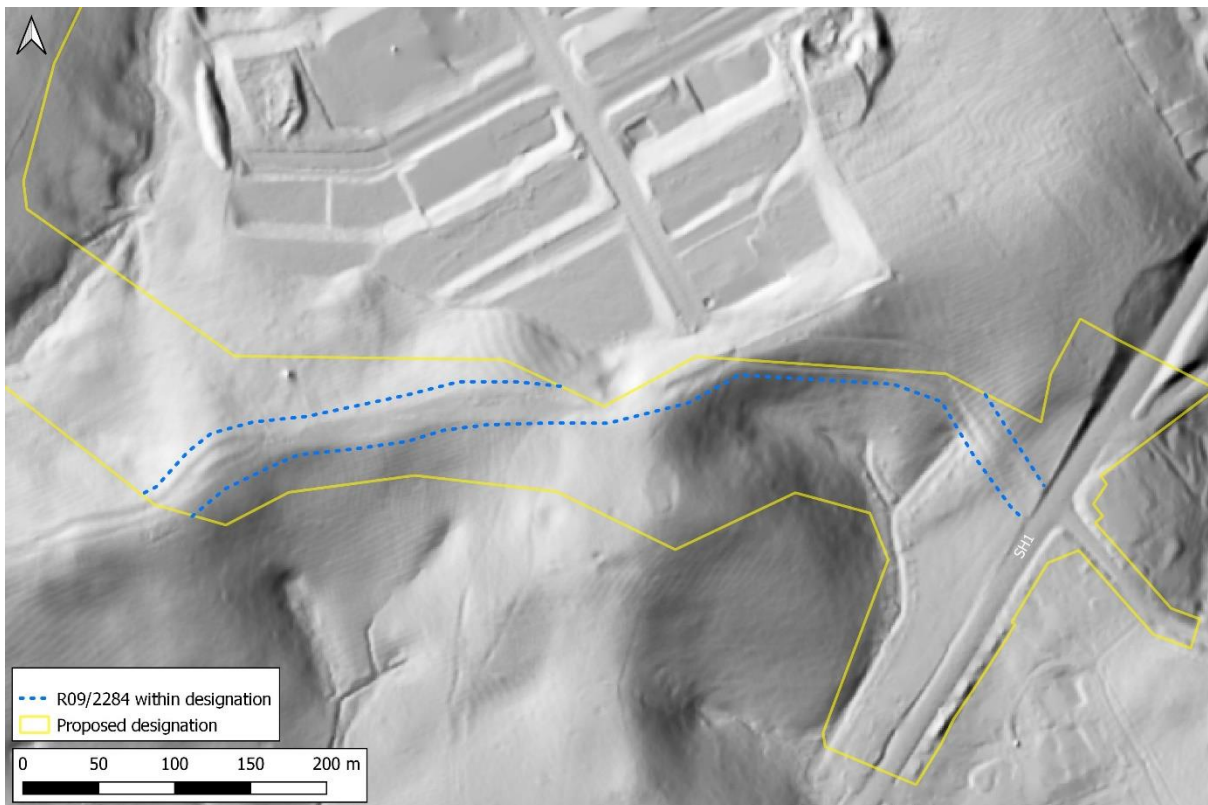


Figure 17. Hillshade derived from LiDAR (2013) showing route of R09/2284 within designation.



Figure 18. Aerial photography (Google Earth, 2019) showing extent of earthworks and R09/2284.

10.3.1 Assessment under the HNZPTA

The following assessments of archaeological values are based on the criteria set out in the HNZPTA (2019).

10.3.1.1 R09/2284 – Road

Condition	While parts of this site have been destroyed by development and roading, segments still remain in reportedly good condition, many now used as farm tracks.
Rarity	Surviving pre-1900 road benches are not commonly seen.
Context	This site has some contextual value being part of the early European settlement / colonisation of Warkworth.
Information	This site could provide some information on the growth and development around Warkworth in the mid to late 1800s.
Amenity	The site is on private property.
Cultural	This is a colonial period site.

10.4 Recommended measures to avoid, remedy or mitigate construction effects

Recommended measures to mitigate construction effects are outlined in Section 6.

10.5 Summary and Conclusions

The proposed works have potential to damage an archaeological site recorded in the NZAA SRS R09/2284). An archaeological authority will need to be obtained from HNZPT to modify any pre-1900 sites (R09/2284) and works near this site will need to be monitored to record any archaeological material that may be impacted by works.

Table 10. Summary of Assessment of Effects and Recommendations Western Link - South

Effect	Assessment	Recommendation
Construction		
R09/2284	Damage to site	Archaeological authority and monitoring

11 NOR 8 – Wider Western Link - North

This section assesses specific archaeological and heritage matters relating to NOR 8 – Wider Western Link.

11.1 Overview and description of works

Refer back to the AEE for a more detailed description of works to be authorised. For the purposes of this report and until detailed earthworks plans are available, it is assumed, unless otherwise described, that anything within the proposed designation has potential for ground disturbance that could impact subsurface archaeological features. The bulk of earthworks will take place within the construction areas set out in Volume 3 of the AEE.

11.2 Assessment Features

Refer back to the AEE in Volume 2 for a detailed description of the existing and likely receiving environment for the overall Warkworth package. One item recorded in the Auckland Council CHI is present within 200 m of the proposed designation. This site is described below.

11.2.1 17006 (CHI) – WWII Camp

This site was recorded by Leah Stevens in 2007. This is one of several United States WWII camps around Woodcocks Road. These camps were dismantled following 1944, with many of the structures relocated to other properties in Warkworth. Survey of the area in 2019 noted concrete remains which appeared similar to remains at related camps, including fragments of concrete with water-rolled pebble inclusions, thought to be used within larger structures in the camps such as ablution blocks, kitchens and general foundations (Clough 2019).

This site was briefly viewed from the roadside during the field assessment for this project. No evidence related to the camp was visible. There are unlikely to be any effects on this site based on the extent of the proposed designation and condition of the site.

11.3 Assessment of construction effects

Works around 17006 are largely confined to the current extent of the road and there are not likely to be any effects on this site.

11.4 Summary and Conclusions

Though there is an item recorded in the Auckland Council CHI within 200 m of the proposed works and designation (17006), the current plans indicate that this site will not be impacted by works. As such, there are no site-specific archaeological effects in addition to those discussed in section 6.

Table 11. Summary of Assessment of Effects and Recommendations Wider Western Link

Effect	Assessment	Recommendation
Construction		
No specific construction effects identified.	N/A	N/A

12 Conclusions

Across the project area, there is potential for unrecorded archaeological and heritage sites to be encountered during construction, particularly in undeveloped paddocks and alongside streams and waterways. There are also several recorded archaeological and heritage sites within the proposed NOR areas that have potential to be partly damaged by works, including Cherry's Bridge (R09/2244), an artefact find spot (R09/2247), a historic house site (R09/2253), a historic road bench (R09/2284) and a WWII Camp (17004). One site may be at risk of damage from operational effects (R09/2263).

All works should be undertaken under an archaeological authority obtained from HNZPT and should be guided by a Historic Heritage Management Plan. Where there is heightened risk of encountering archaeology or post-1900 heritage, archaeological monitoring should take place. Any archaeological or heritage material identified during works will be investigated, recorded, sampled and analysed as relevant, following archaeological best practice.

While there is a risk of damage to archaeological/heritage sites, which is a negative effect, by having an archaeologist on site and available to record and analyse material there will be potential to learn more about the history of Warkworth.

Effect	Assessment	Recommendation
R09/2244 (NOR 2)	Potential damage to archaeological site	Archaeological authority and monitoring
R09/2247 (NOR 2)	Potential damage to archaeological site	Archaeological authority and monitoring
R09/2253 (NOR 4)	Potential damage to archaeological site	Archaeological authority and monitoring
R09/2263 (NOR 5)	Potential long term weathering from upstream changes	Manage through HHMP
R09/2284 (NOR 6)	Potential damage to archaeological site	Archaeological authority and monitoring
17004 (NOR 2)	Potential damage to historic site	Archaeological Monitoring

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