

APPENDIX E

Waitarere Beach Road Curves Project Archaeological and Heritage Assessment Report

Prepared for The New Zealand Transport Agency

November 2015



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BUILDING A BETTER WORLD



**An Archaeological Survey and Assessment of Effects for the Waitarere
Beach Road Curves Project, State Highway 1, North of Levin**



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EXECUTIVE SUMMARY

- This assessment has been prepared for the purposes of a Notice of Requirement under the Resource Management Act 1991.
- The New Zealand Transport Agency has proposed a realignment of State Highway 1 at the Waitarere Beach Road Curves to the north of Levin. This also includes a new connection from SH1 to Paeroa Road.
- There is a long history of Māori occupation in the wider landscape with an emphasis on faunal and floral resource exploitation (eels, birds and flax, among others), though the affected area is particularly associated with horticultural activities. Prior to the 1830s this area was occupied by members of the Muaūpoko iwi. Following the conquest of the majority of the Muaūpoko lands by Te Rauparaha and his allies the Ngāti Raukawa settled in the Horowhenua region at the invitation of their relative, Waitohi, over the course of several migrations during the 1830s. Māori Land Court records and other sources indicate there is a high probability of encountering unrecorded archaeological sites in the project area related to the 19th Century occupation of this land by hapū of Ngāti Raukawa, the descendants of which are represented today by the two marae, Huia and Matau
- There are some historic European links in the area that are of a secondary importance and value to the more developed Māori history. The two most prominent 19th century historic sites associated with Europeans in this area are the mill and Catholic church, established by Fathers Comte and Melu, respectively. The mill site will not be affected by the proposed alignment and earthworks related to the existing highway are likely to have destroyed any trace of the former church.
- The chosen alignment has avoided the known sites of most significance in the wider area and late (November 2015) design changes removing the link road between Paeroa Road and Waitarere Beach Road have substantially reduced potential adverse archaeological effects to high value and culturally sensitive archaeological sites along Tauheke Ridge, including: Nga Haere pā, Te Paiaka no te Waiariki pā, an unnamed kāinga and the MK7D2D Sec. 15 urupā.
- Potential external features (if present) related to one recorded archaeological site (S25/60) may be affected by the proposed works. There is also potential for other sites connected to the 19th century residential and horticultural occupation by Ngāti Huia and Ngāti Huia ki Matau to be affected, but their location and extents have not been accurately defined.
- There is a high likelihood of encountering unknown archaeological sites

relating to the earlier Muaūpoko occupation of this area, though this risk is poorly defined due to a lack of information.

- There is a known, but not surveyed, urupā reserve in a general proximity to the proposed earthworks. It is unclear if this urupā was used, or designated as a reserve but remained unused. This urupā will not be affected.
- There is high likelihood of disturbance to unknown archaeological materials during the construction of the proposed realignment.
- There is the potential for moderate effects on the former 19th century Ngāti Raukawa settlement at Waitarere Sec. 8 (currently, Lot 2 DP 88263), though such effects can be mitigated and managed through the archaeological authorities that will be required. Any archaeological investigations will contribute to a better understanding of the history of the area and its past occupation and use.
- An authority from Heritage New Zealand to modify, damage or destroy archaeological sites will be required prior to the onset of construction or any enabling works. Any authority is expected to require further research to be undertaken and is likely to impose a number of specific conditions relating to the manner in which site works are undertaken and archaeological materials are handled. This is the primary basis for the management of unavoidable effects. However, it is recommended that:
 - Earthworks undertaken in medium or high value areas are undertaken with an archaeologist present unless the area has been surveyed by an archaeologist in advance.
 - Sites of known archaeological value outside the earthworks areas are protected from accidental damage during earthworks and vehicle movements, through education of contractors, taping, signage, or fencing.
 - A formal briefing is provided by an archaeologist to all contractors involved in earthwork activities before commencement of works. The briefing will cover information on known archaeological sites, what to look out for when undertaking earthworks, how to protect the site until authorities and iwi can investigate, and how any archaeological management plan required by an archaeological authority from Heritage NZ will operate.
 - A robust archaeological management response is provided in the event that an archaeological site, wāhi tapu or koiwi is discovered or disturbed. The management response shall include as a minimum:
 - that works in the location of any discovery immediately cease;

- that Heritage New Zealand, local iwi, the consultant archaeologist, and if koiwi are discovered the New Zealand Police, are immediately informed;
 - work at the site be suspended for a reasonable time to enable iwi to carry out procedures for the removal of taonga and any archaeological investigations; and
 - that Heritage NZ and the Horowhenua District Council will advise the Permit Holder when work can resume.
- Upon the conclusion of the archaeological investigation further research will be required as part of the interpretation and presentation of any archaeological materials recovered.
- Overall, based on the research undertaken, including site visits and discussion with iwi (but no provision of a cultural impact assessment), the proposed realignment will have a relatively minor impact on the known heritage landscape. While there are potential risks to archaeological and heritage values in the area, most of the potential effects are expected to be at the low or insignificant end of the scale. I consider the project's effects on archaeology to have been appropriately avoided, remedied or mitigated.

Table 1: Summary of potential effects for archaeological sites located within, or in close proximity to, the project area.

ASSESSMENT AREA	ARCHAEOLOGICAL VALUE	POTENTIAL EFFECT	MITIGATED EFFECT	ZONE
Former Matau Marae	High	Negligible	Negligible	
Waka construction site (MK7D2D Sec. 60)	Low	Low	Negligible	
Hohaia te Pahau's residence (MK7D2D Sec. 56?)	Medium	Negligible	Negligible	
Hohaia te Pahau's residence (MK7D2D Sec. 57B)	Medium	Negligible	Negligible	2
Kapa te Karaha's residence (MK7D2D Sec. 57D)	Medium	Minor	Negligible	
Paiaka and Kireona Paratawa's residence (MK7D2D Sec. 57B?)	Medium	Negligible	Negligible	
Nga Haere pā (S25/60)	High	Negligible	Negligible	3
MK7D2D Sec. 15 urupā	High	Negligible	Negligible	
Huia's residence (MK7D2D Sec. 17)	Medium	Significant	Minor	
Te Paiaka no te Waitariki pā and unnamed kāinga (MK7D2D Sec. 16)	High	Minor	Negligible	
Waitarere Sec. 7A, 8 and Ngawhakahiamoe settlement	High	Moderate	Moderate	
St Michael's Catholic Church	High	Negligible	Negligible	
Poroutawhao Mill	High	Negligible	Negligible	

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GLOSSARY

Table 2: List of Māori or archaeological terms that may be referenced in text.

C14	Dating method using the deterioration of Carbon 14 isotopes in living organisms
Firescoop	Fireplace used for various reasons (cooking, warming, etc.)
Hāngī	Subterranean cooking oven using heated stones
Hapū	Māori sub-tribe, part of a larger tribal federation (iwi)
Iwi	Māori tribe, composed of smaller hapū sub-units
Kai moana	Seafood exploited by Māori, including fish, shell fish and crustaceans
Kāinga	Māori undefended open settlement
Kaumātua	Male elder(s) of a hapū
Koiwi	Human remains
Kuia	Female elder(s) of a hapū
Midden	Refuse from a settlement, mainly shell fish
Noa	Ordinary or profane. The opposite of tapu
Pā	A site fortified with earthworks and palisade defences. Historic meaning differs from the archaeological use of the word.
Pit	Rectangular excavated pit used to store crops by Māori
Posthole	Archaeological remains of a post used for various reasons
Rohe	Settlement area of a Māori hapū
Rua	A subterranean pit used to store crops by Māori
Terrace	A platform cut into the hill slop used for habitation or cultivation
Tapu	To be sacred, prohibited, restricted or set apart. The opposite of noa
Urupā	Burial ground
Wāhi tapu	Sites of spiritual significance to Māori
Waka	A traditionally built dugout Māori canoe
Whare	Traditionally built Māori sleeping house

INTRODUCTION

The Waitarere Beach Road Curves Project (the Project) is part of the Otaki to north of Levin section of the Wellington Northern Corridor Roads of National Significance (RoNS) programme. The Project area is approximately 7 km north of the centre of Levin. The objectives of the Project are:

In relation to State Highway 1 north of Levin to:

- enhance inter-regional and national economic growth and productivity;
- improve journey times on the state highway network;
- enhance safety of travel on the state highway network;
- appropriately balance the needs of both interregional traffic and local road users; and
- to achieve the above objectives in a cost effective manner

It is proposed to improve this section of State Highway 1 (SH1) by:

- Replacing the three existing curves with two curves;
- Increasing the radii of the curves to improve the alignment of the road;
- Widening the highway cross section to provide a median strip and wider shoulders (tapering in to connect to the sections of highway outside the project area);
- Providing a wire rope median barrier within the median strip;
- Providing wire rope barriers on the outer edge of the hard shoulder (this does not include across private accessways);
- Improving the layout of, and visibility at, the Waitarere Beach Road/SH1 intersection;
- Improving the layout of, and visibility at, the Clay Road/SH1 intersection; and
- Closing the Paeroa Road intersection with SH1, and connecting Paeroa Road by a parallel road to a new intersection with SH1 further to the south, at the curve north of the Huia Marae access.
- New dedicated right-turning lane at Poroutawhao School

The project will require significant earthworks due to the undulating topography. Improvements to the stormwater management will also be made with roadside swales and stormwater retention ponds at key locations and the installation of new culverts for the realigned sections and the upgrade of existing culverts where the existing SH1 alignment will be retained.



Figure 1: Regional map showing the main town of Levin and the existing roads and highways. The proposed realignment is overlaid in black approximately 7km to the north of Levin.

MWH New Zealand Limited, on behalf of the New Zealand Transport Agency (the Transport Agency), requested inSite Archaeology Limited to undertake an assessment of the archaeological values that may be affected by the project. An assessment was undertaken to identify any known and previously unknown archaeological materials in the vicinity of the proposed works and to define what effect the project will have on their heritage values. This report presents the results of this assessment for the Notice of Requirement.

Archaeology is a discipline rooted in the Western philosophical traditions of Naturalism and Materialism. As such this report makes no attempt to engage with the cultural and/or spiritual aspects of the Māori worldview that may extend beyond the natural material world. This is not a claim of epistemic privilege for the material world, but merely an acknowledgement that there are elements of Māori thought and knowledge that are beyond the purview of this report.

Location and Legal Description of Land Affected

Aside from the existing road parcels, 32 land parcels will be directly affected by the project (Figure 2, Table 2). Further information in regards to land parcels, addresses and ownership is provided in the assessment of effects accompanying the Notice of Requirement.

Previous Work Within The Affected Area

No archaeological authorities have been issued for prior works in the areas that will be affected.



Figure 2: Detail of the proposed highway realignment showing divergence from current SH1 alignment, connections to existing roads and affected land parcels. Poroutawhao School turning lane not shown.

Table 3: List of affected properties.

LEGAL DESCRIPTION	LEGAL DESCRIPTION
Lot 1 DP 427692	Lot 6 DP 88867
Lot 2 DP 427692	Lot 7 DP 88867
Lot 1 DP 68002	Lot 1 DP 40353
Lot 2 DP 68002	Lot 3 DP 58154
Lot 4 DP 68002	Lot 4 DP 58154
Lot 2 DP 61632	Lot 3 DP 431661
Lot 1 DP 304414	Manawatu-Kukutauaki 7D2D36A Block
Lot 2 DP 304414	Manawatu-Kukutauaki 7D2D36B Block
Lot 1 DP 88263	Lot 2 DP 73874
Lot 2 DP 88263	Lot 4 DP 61399
Lot 5 DP 61399	Lot 1 DP 16204
Lot 1 DP 73873	Part Manawatu-Kukutauaki 7D2D56A1 Block
Sec 3 SO 28705	Manawatu-Kukutauaki 7D2D56A2 Block

LEGAL DESCRIPTION	LEGAL DESCRIPTION
Sec 4 SO 28705	Part Manawatu-Kukutauaki 7D2D56B Block
Manawatu-Kukutauaki 7D2D60C Block	Manawatu-Kukutauaki 7D2D57D2A Block
Part Manawatu-Kukutauaki 7D1,2 Block	Part Manawatu-Kukutauaki 7D1,3 Block

STATUTORY REQUIREMENTS

The Notice of Requirement is being sought in terms of the Resource Management Act 1991 (RMA) and this report addresses part of one of the matters of national importance identified in Section 6 of the Act. Specifically, the need to protect historic heritage from inappropriate subdivision, use, and development.

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 Maori, 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 Maori. There is also separate legislation which deals directly with historic heritage, including archaeological sites¹.

¹ Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA)

METHODOLOGY

Initial iwi consultation with Ngāti Raukawa directed consultation towards local hapū. The first meeting to present and discuss the project with local hapū took place in November 2014 at Huia Marae, and representatives of Ngāti Huia and Ngāti Huia ki Matau escorted staff from the Transport Agency, MWH, and the author on a walkover of the project area. Not all sections of the project area were able to be visited on this occasion. At this meeting concern was raised about the location of an urupā within the project area. Māori Land Court records were extensively reviewed at this time in a search for more information about this urupā (results presented below). A second informal site visit was undertaken with a local informant, who wished to remain anonymous, in January 2015 to determine the location of kōiwi uncovered by earthworks in the vicinity of the proposed works during the mid-20th century. A final site visit was made on the 20th of July 2015 to inspect archaeological surface features on the Tauheke dune ridge.

A meeting was held with Heritage New Zealand (HNZ) in late March to discuss the objectives and effects on archaeology of the project, as well as the type of archaeological authorities that will be required to enable the work.

A third site visit and more detailed landscape survey with MWH and selected technical experts, was undertaken on the 23rd of April 2015. The entire project area was not able to be visited on this occasion. On the 28th of April a workshop to discuss mitigation for potential effects was held with representatives from the Transport Agency, MWH and the projects technical advisors. A summary of the key archaeological issues was presented at this meeting.

Drafts of this report were provided to the representative bodies of Ngāti Huia, Ngāti Huia ki Matau and Muaūpoko for review and comment. Following their review of these drafts follow-up meetings were held. Muaūpoko Tribal Authority Taiao advisers Kerehi Wi Warena and Robert Warrington provided comment on an early draft in May. Neville Heihei and Wayne Kiriona provided feedback on behalf of Ngāti Huia ki Matau at meetings on the 15th and 22nd of July. Hiramā Tamihana, based in Australia, provided feedback on behalf of Ngāti Huia over a series of emails and phone conversations extending from June to July.

A range of historic and secondary sources have been reviewed for this work. The primary sources used were three 19th century Māori Land Court plans of the Manawatu-Kukutauaki claims and four individual block plans (Table 3). Minutes of the proceedings of the Māori Land Court were the main texts studied, particularly those relating to the initial Manawatu Kukutauaki, Manawatu Kukutauaki 7D (MK7D), Manawatu Kukutauaki 7D2D (MK7D2D), Waitarere and Ngawhakahiamoe block claims and subdivisions². The historic digital newsprint collections of the National Library at PapersPast were searched using the keywords ‘Poroutawhao’ and ‘Waitarere’.

² Due to multiple witnesses involved in the cases before the Court, references to Māori Land Court proceedings are provided in the following format, [Court] MB[volume]: [pages]. For example, (Otaki MB24: 246) = Otaki Court, Minute Book vol. 24, page 246. A list of the main claims and subdivision cases referred to in text are provided with the bibliographic references.

Table 4: List of survey plans examined.

PLAN REFERENCE	DESCRIPTION	DATE
SO11013	Plan of Native Land situated between the Manawatu River and the North Boundary of the Wainui and Whareroa Purchased Blocks	1872
SO11038	Compilation Map shewing Native Claims situated between the Manawatu River and the Wainui and Whareroa Purchased Block	1872
SO11039	Plan of Native Land situated between the Manawatu River and the North Boundary of the Wainui and Whareroa Purchased Blocks	1872
ML363A	Manawatu Kukutauaki No.7D	1897
ML363B	Manawatu Kukutauaki No.7D	1882
ML959	Subdivisions 2A, 2A1 in Manawatu Kukutauaki No.7D	1889
ML1243	Plan of Subdivisions 5, 6, 7 & 8 Waitarere Block	1893
ML1862	Subdivisions of Section 2D of Manawatu Kukutauaki No.7D	1904

Secondary photographic sources were early 20th century photographs of the Horowhenua held by the Alexander Turnbull Library and a 1942 New Zealand Government aerial photo coverage supplied by Opus International Consultants Ltd. G. L. Adkin's (1948) text on the place names and history of the Horowhenua provided a general historic framework. Archaeological records were sourced in the form of assessments and reports from Heritage New Zealand, with individual site records sourced from the New Zealand Archaeological Association data server, ArchSite (Appendix 1).

PHYSICAL ENVIRONMENT

The broad environmental diversity of the Horowhenua region is matched by the diversity of its geology, though the proposed developments discussed in this report fall within just two of these distinct geological contexts. Understanding the background geology is essential to the analysis of the archaeological record of this region, because the geological context not only informs the potential age and preservation of the archaeological record, but also its vertical distribution. In particular, understanding the phasing and dynamic nature of the Horowhenua dune belt is important for establishing a guide to the depth at which earthworks may no longer be exposed to the risk of archaeological discovery. For example, it is possible that archaeological materials relating to early Māori occupation of the region could be deeply buried underneath sand deposits belonging to a more recent dune phase. In this case the archaeological material would not be immediately visible after the stripping of the surface topsoil, but only after potentially substantial excavation and removal of overburden. However, localised erosion or deposition events may also result in the discovery of archaeological sequences outside of the expected geological order.

The proposed realignment crosses three different geological contexts: Late Pleistocene beach deposits, Holocene river deposits and Holocene dune deposits. All three were stabilised prior to Māori occupation of New Zealand and it can be expected that any archaeological materials present will be apparent in the upper soil horizons. Deeply buried archaeological materials are unlikely to be encountered. However, it is possible that localised erosion or deposition events within the Foxton phase dunes (Cowie, 1963: 275), as well earthworks associated with earlier stages of the SH1 development, could have resulted in buried archaeological materials. The Research Results presented below include a description of the context in which kōiwi were found along Tauheke Ridge in the mid-20th century. It suggests that there may have been at least one localised deposition event subsequent to the parent geological phase. Tauheke Ridge is the dominant geological feature in the area and is of considerable archaeological interest (Figure 3).

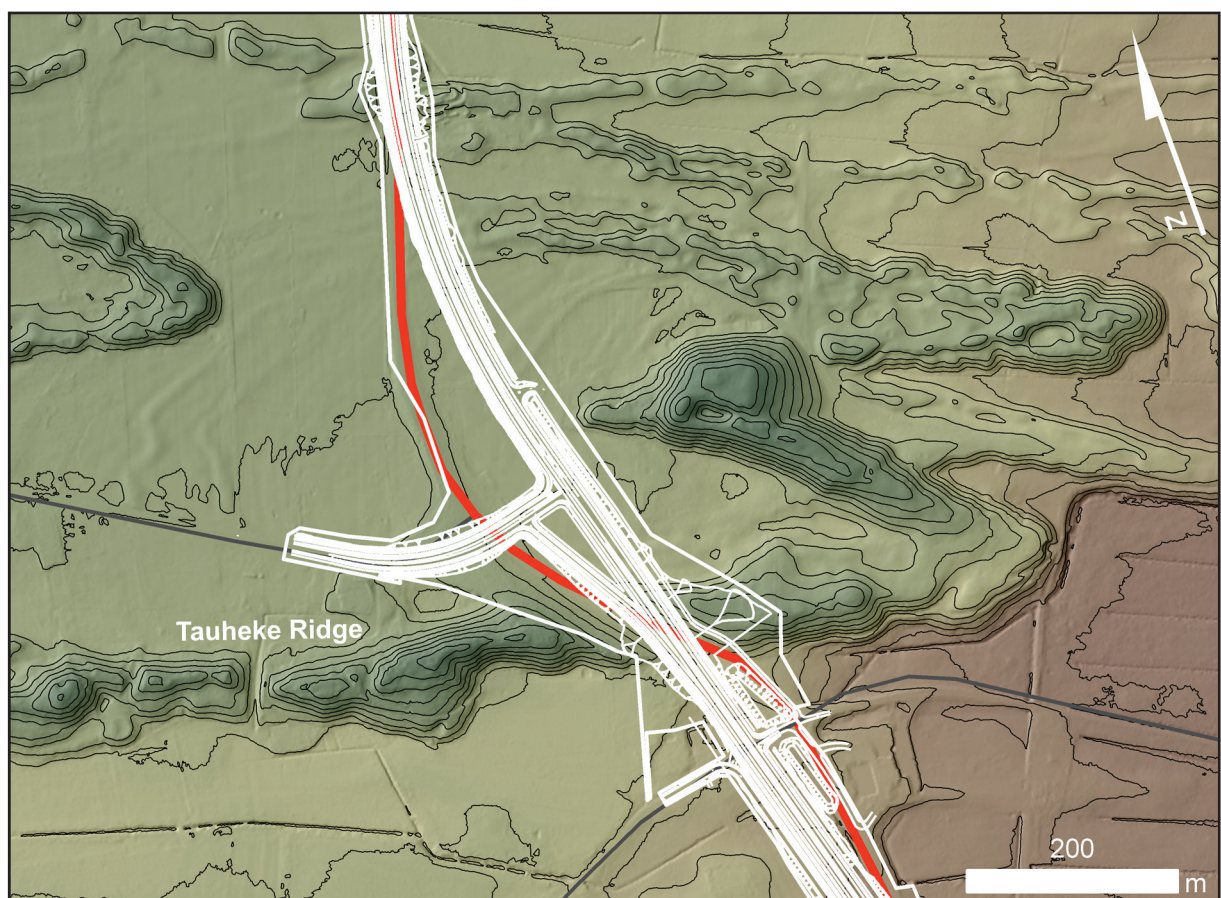


Figure 3: Detail of Tauheke Ridge, showing the existing highway cut and extent of proposed earthworks. Contours at 2 m intervals.

HISTORICAL BACKGROUND

The bountiful natural resources of the Horowhenua coast have attracted many occupants, from the first Māori who arrived almost one thousand years ago, through to the 19th century settlers of largely British extraction. In general the history of settlement in this region, both Māori and

European, can be divided into two broad phases. The first covers all settlement that predates the completion of the Wellington-Manawatu railway in 1886, where both Maori and European long term occupation was concentrated along the coastal dune belt with a general proximity to the sea or the small inter-dune lakes. The second covers the period of settlement that post-dates the completion of the Wellington Manawatu railway, located inland of the coastal dune belt, and the rapid clearance of the surrounding bush by the incoming settlers in order to fulfil their obligations to the government that the land be 'improved' (Dreaver, 1984b:167). With improvement to goods transport provided by the railway and vast new tracts of land opened through felling of the bush, the focus of settlement gravitated inland. For settlers of European origin this was a relatively quick transition, but a more drawn out and gradual process for Māori.

The first Europeans to settle on the Horowhenua coast were predominantly whalers or traders who arrived in the early decades of the 19th century (Bevan sen., 1907:18; O'Donnell, 1929). These hardy settlers lived in or nearby the Māori settlements among the coastal dune belt and with whom they traded for raw materials that could be on sold in the Wakefield settlements or exported to the booming markets in Sydney (Bevan sen., 1907:24; Dreaver, 1984b:34). In contrast to other parts of the country, for example, Taranaki (see Adamson, 2012), the relationship between settler and Māori was relatively harmonious – barring occasional minor incidences (Bevan sen., 1907). With the establishment of the Wellington-Manawatu railway these settlers moved inland to be nearer the primary trade route, along with an influx of new settlers attracted by the vast tracts of land made available by the government along the railways extent. These new inland settlements are the present day townships of Levin, Ohau and Manakau.

Arriving at Rangiuru, Otaki, in 1832, Hector McDonald was the first European settler to the Horowhenua. He later moved north to the mouth of the Hokio Stream where he established an accommodation house and leased substantial tracts of land from local Māori. While the pace of European settlement increased after the signing of the Treaty in 1840 few held land outside the main Māori or colonial settlements. By the early 1870s just six men held leases, from local Māori, for the whole of the coastal land from Otaki to the Manawatu (O'Donnell, 1929: 22). Thomas Cook held the first lease at Poroutawhao in the 1850s, which was transferred to Albert Nicholson the following decade. In 1872 the lease was transferred once more, this time to John Davis. While the leases and livestock were held by the settlers, their management was a collaborative effort as it was local Māori that provided the labour that kept the runs functional.

Although there are some historic European links in the area, for the most part these links are of a secondary importance and value to the more developed Māori history that may be impacted by any earthworks. The two most prominent 19th century historic sites associated with Europeans in this area are the mill and Catholic church, established by Fathers Comte and Melu, respectively. The mill site will not be affected by the proposed alignment and earthworks related to the existing highway are likely to have destroyed any trace of the former church. For these reasons this report focuses on defining the nature and potential impacts on sites related to the Māori occupation of this area, though the Catholic church will feature briefly in the report.

Radiocarbon (C14) determinations from coastal sites to the north and south show that Māori have occupied this part of the New Zealand for more than 700 years³. Māori were drawn by the

3 See reference dates WK1757 and NZ0682 from the NZ Radiocarbon Database, at www.radiocarbon dating.

diverse environmental range within a relatively compressed landscape between the coast and the Tararua Ranges that held an equally diverse mix of faunal and floral resources (Bevan sen., 1907:10-11; O'Donnell, 1929:5). Archaeological evidence and Māori oral histories indicate multiple migrations into the region – either by conquest or assimilation – in the period before colonisation by the British Crown (Adkin, 1948:108-29), though the evidence for this has not yet been given a serious academic treatment. The most recent of these Māori migrations dates to the 1830s. The Ngāti Toa had arrived in the previous decade and gained through conquest much of the land previously occupied by the Muaupoko and their related allies. Te Rauparaha, the Ngāti Toa chief, invited Ngāti Raukawa to established settlements in the land. However, it was only upon receiving an invitation from Te Rauparaha's sister, Waitohi, that they agreed to come and settled in the Horowhenua.

Although Muaupoko were the original occupiers of the Horowhenua region, in its decision regarding the Manawatu Kukutauaki claim the Maori Land Court ultimately determined that Muaupoko had ceded their authority over much of their original territory. Eventually the Court vested the land in question here, part of the MK7D Block, into the custody of four hapū: Ngati Hapahapai, Ngāti Huia, Ngati Manea, and Ngati Tuwhakahewa. Today the responsibilities of mana whenua and kaitiakitanga (guardianship) along the entire proposed realignment are held the descendants of these four hapū, represented by the two marae Huia and Matau.

Court records contain detailed historical debates relating to the 19th century occupation by Ngāti Raukawa, though there are some oblique references to earlier Muaupoko occupation. However, the detail in these 19th century occupation records can be ambiguous. Most hearings into the subdivision of the MK7D Block between hapū and whānau were contested, with some of the information presented to the Court as either conflicting or contradictory. Unfortunately, the records to date do not present a single unified account of the 19th century occupation in this region. For the purposes of this assessment it is assumed that all claims contested or contradicted elsewhere, are either true or contain an element of real risk for the project.

Background to the Historic Heritage Landscape

While the historic heritage landscape is the primary focus of any archaeological enquiry, for RMA and HNZPTA purposes consideration should also be given to the natural landscape that has had a significant influence on its formation. This is particularly important in regions such as the Horowhenua where there are few records and a limited understanding the historic cultural landscape . Where the heritage landscape is poorly defined archaeologists must undertake either substantial field surveys or look to define patterns in the known heritage that can be extended into the unknown using the natural landscape as a common referent. The latter approach is taken here as it provides the best overview of the landscape without the need for substantial field research.

Understanding how Māori defined and structured the natural landscape, particularly through the naming of landmarks or regions, has significance for archaeologists. A substantial portion of the natural landscape was memorialised through the assignment of place names by Māori. At its most basic the very act of naming a location infers an elevated significance, but the place com.

name itself often points to archaeologically significant behaviours or material traces that were associated with the natural landscape at that location (Tables 4 and 5). For example, Te Kumete o Whatuira, trans. ‘the food bowl [figurative] of Whatuira’, or Paraparaumu, trans. ‘scraps from an earth oven’.

Defining the heritage landscape is more straightforward. Gaps in the heritage record can be filled with inferences about the probable character and distribution of the unknown heritage by extrapolating from the patterns observed in the known natural-cultural landscape. As elaborated below, heritage sites in the Horowhenua occupied during the 19th century, or large socially significant sites that have been memorialised in social memory from earlier occupation phases are better recorded. Where these heritage sites are recorded there are also likely to be supporting sites in the surrounding landscape that have not been similarly recorded or memorialised.

The Natural Landscape

Two features stand out in Figure 4 of the natural landscape; its substantial swamp and bush lands. The Waitarere Curves project is located in an area that crossed the boundary between the scrub country of the dunes and the dense bush of the inland Pleistocene river and beach deposits. This characteristic of the historic landscape is aptly retained in the Māori name for the area, Poroutawhao, a descriptive name that translates to ‘the edge of the bush’. The bush line had been in a constant state of flux since the arrival of the first Māori, with various patches being opened and allowed to regenerate against a general pattern of retreat. However, after the arrival of Europeans and the introduction of steel tools the general trend was one of permanent clearance. In Figure 4 the bush line is drawn from a Manawatu Kukutauaki Native Land Claims plan SO11039 (Table 3). Smaller remnants of bush to the west of SH1 were not surveyed on this plan, but the general locations of these stands were known and recorded in the early 20th century (Adkin 1948). Aside from being sources of timber for construction and firewood, the abundant bird life of the bush was a valuable food resource. The discovery of small camps associated with birding activities is a possibility in former bush areas, though court records state there were no Ngāti Huia or Ngāti Huia ki Matau bird snaring places west of the Kouranui Stream by 1880 (Otaki MB4: 254).

The contrasting Māori and European perspectives of what constitutes ‘productive’ land can be seen in the history of the region’s swamps. Of the more than 700 hectares of swamp and wetlands that were present in the late 19th century only a small fraction remains today, the vast majority having been drained and converted to pastoral land. Prior to their drainage these swamps were a valued and multifaceted resource. Abundant bird and marine life was a valuable food source and the faunal resources, particularly flax, provided materials and fibres for fabrics, construction and, at a later time, commercial trade (Dreaver, 1984a: 141-158). The swamps also served a protective purpose for both people and items. An elevated piece of ground in the Kouranui Swamp was a refuge for women and children during periods of conflict, while the peat bogs provided hiding places for valuables or wet storage for utilitarian tools (Allen et al., 2002: 318).

The water courses and streams that feed and traversed the swamps were important transport

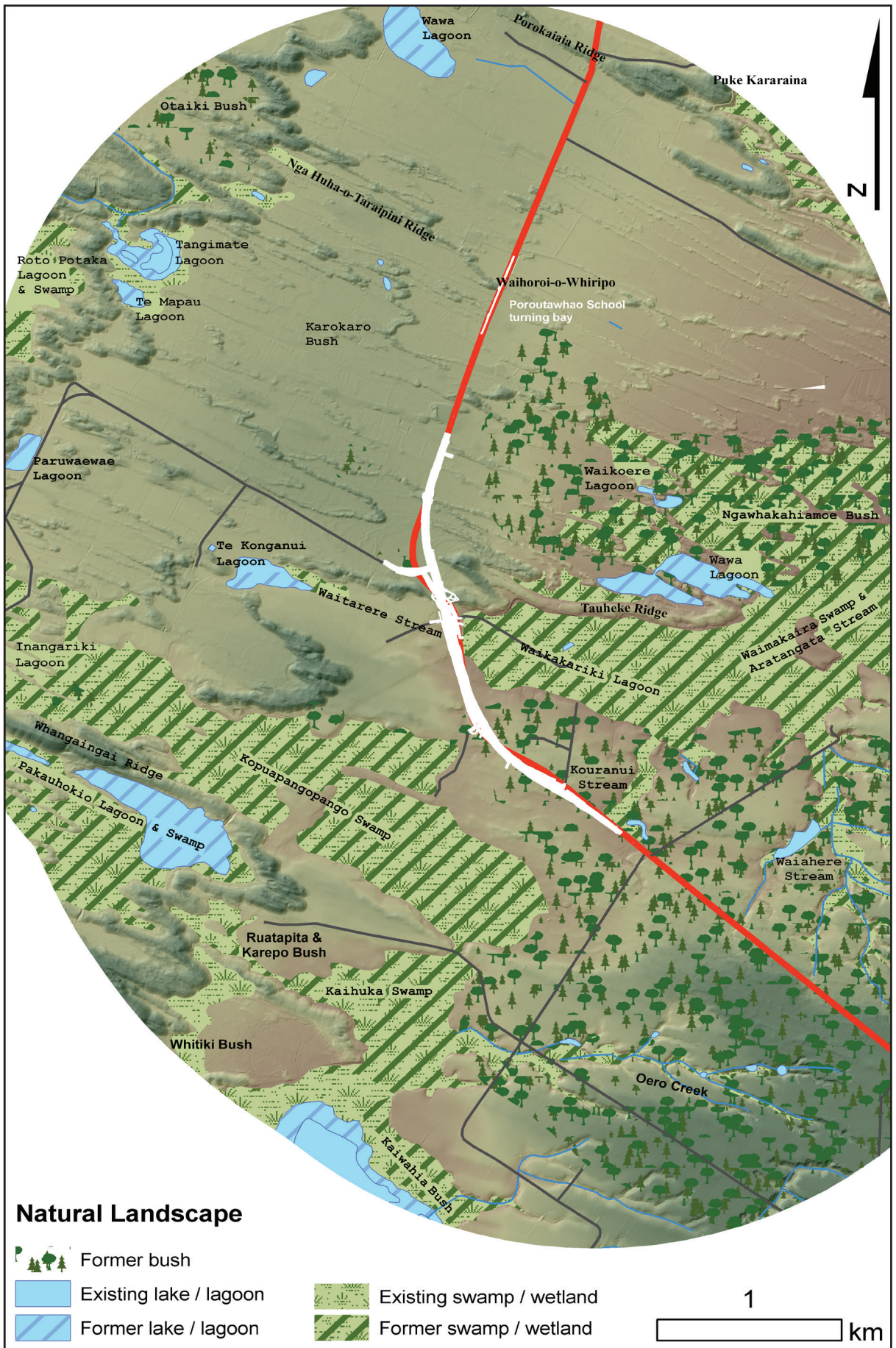


Figure 4: Selected named features of the natural landscape (Adkin 1948). Swamps and lagoons defined from historic aerial photos and LIDAR. The bush line is copied from the 1872 plan, SO11039.

Table 5: Translations of Maori natural landscape place names shown in Figure 4. Place names include figurative descriptions of the physical landscape, and literal descriptions of activities or historic events.

LOCATION TYPE	NAME	TRANSLATION
Bush Stands	Karepo	Sea grass [a marine plant]
	Karokaro	To avoid or dodge [an ambush?]
	Kaiwahia	To burn firewood
	Ngawhakahiamoe	The place of rest
	(alt.) Ngawakahiamoe*	The place where the canoes sleep
	Otaiki	A snare [for birds]
	Whitiki	A belt
Dune Ridges	Nga Huha-o-taraipini	The thighs of Taraipini
	Porokaiiaia	A bush hawk necklace
	Tauheke	The end of the journey
		(alt.) The moving ridge [a geological description]
Whangaingai	Food sent to meet visitors on their way	
Lagoons	Inangariki	The small Inanga [a type of fish]
	Pakauhokio	The wings of the Hokioi [a mythological bird]
	Paruwaewae	The dirty legs [from retrieving eels]
	Roto Potaka	The swirling currents
	Tangimate	The Waters of Remembrance
	Te Mapau	The Mapau [a type of tree]
	Te Konganui	The big embers/coals
	Waikakariki	The emerald waters
	Waikoere	The waters where elvers [baby eels] were collected
	Wawa	[a] Fence or palisade
(alt.) Loud [perhaps referring to bird life]		
Streams and Creeks	Aratangata	The peoples path
	Kouranui	The big crayfish
	Oero	Putrid
	Waiahere	A place to fix bird snares
Swamps	Kaihuka	Consumed by the cold
	Kopuapangopango	Very dark and deep water
	Waimakaira	The shimmering waters
Other	Puke Kararaina	Kararaina's hill
	Ruatapita	The storage pit of Tapita
	Waihoroi-o-Whiripo	The bathing pool of Whiripo

* It is generally accepted by local Māori that the name for this stand of bush is Ngawakahiamoe. However for both the Māori Land Court records and the associated land block the name is exclusively written as Ngawhakahiamoe. The second spelling has been used throughout this report for consistency with the written and survey records cited.

routes. The Aratangata Stream within the Waimakaira Swamp was one of the major routes north to the Manawatu River and the coastal highway. The Waitarere Stream (trans. as 'copious flowing water' or 'falling water'), that flowed from the Te Konganui Lagoon to the Waimakaira swamp, powered the mill previously described and also gave its name to a Māori Land Block

in the northern half of the project area. When the Māori settlement on this block (described below) shifted to the coast the Waitarere name was transferred with it. There is an increased chance of encountering archaeological sites around the periphery of the streams and former swamps, and in some instances within the swamps.

Like the swamps, little remains of the coastal lagoons that were scattered amongst the dunes which likely disappeared at the same time as the swamps. Frequent reference is made to the lagoons in Māori Land Court records, where their ownership was highly contested due to them being an abundant source of eels. Court records indicate that a number of individuals had their own houses or small settlements in the lands surrounding these lagoons, away from the main hapū or iwi settlements.

There are four known named-dune ridges crossing the landscape on a northwest to southeast axis. As stretches of elevated ground in a mostly swampy and broken landscape these are likely to have been used as routes between the inland and the coast. As such there is a high probability that archaeological materials are located on these landforms. Four dune ridges will be affected by the project, two of which are named: Tauheke and Nga Huha-o-taraipini. Of the four ridges, Tauheke will be the most affected and there is a moderate risk of archaeological materials being uncovered at this location. Earthworks planned for the remaining three ridges are less extensive and have a lower risk of uncovering archaeological materials.

Historic Heritage Landscape

The distribution of sites in Figure 5, when grouped by iwi affiliation, reflects the boundaries drawn by the Māori Land Court in the 19th century. North of the Kopuapangopango Swamp and in the general vicinity of the proposed realignment are sites connected to the hapū of Ngāti Raukawa, who occupied the land post-1830, and to the south are sites connected to continuous Muaūpoko occupation. Though prior to the 19th century they too would have occupied the land now held by the hapū of Ngāti Raukawa. The recorded sites generally fall into three broad classes: pā sites, mixed use and cultivation grounds, and specific activity areas.

Only one of the four pā sites in the area, Nga Haere (located on the western half of Tauheke Ridge), is at any risk of potential damage⁴. Close study of historic aerial photographs and detailed topographic plans (derived from LIDAR data) suggest the main pā site is unlikely to be affected by the realignment earthworks, though it is possible that unknown ancillary supporting structures or features outside the pā could be impacted. Of the remaining three pā sites, two, Purutaua and Paeroa, were established by the Ngāti Toa chief Te Rangihaeata, with the latter occupied by Ngāti Huia and Ngāti Huia ki Matau and eventually converted to use as an urupa. Mangaroa has previously been connected to earlier occupation by the ancestors of the Muaūpoko (Adkin 1948:220-230).

Outside of the main settlements much of the land was occupied by a mixture of low density residential dwellings and attached horticultural plots, illustrated as 'Mixed use' areas on Figure 5. Though in some cases, such as at Piha Flat, 'Mixed use' also incorporates other activities such as horse racing or various military activities. Of Mairua clearing and pā, Adkin (1948:206)

4 See later discussion on Zone 3.

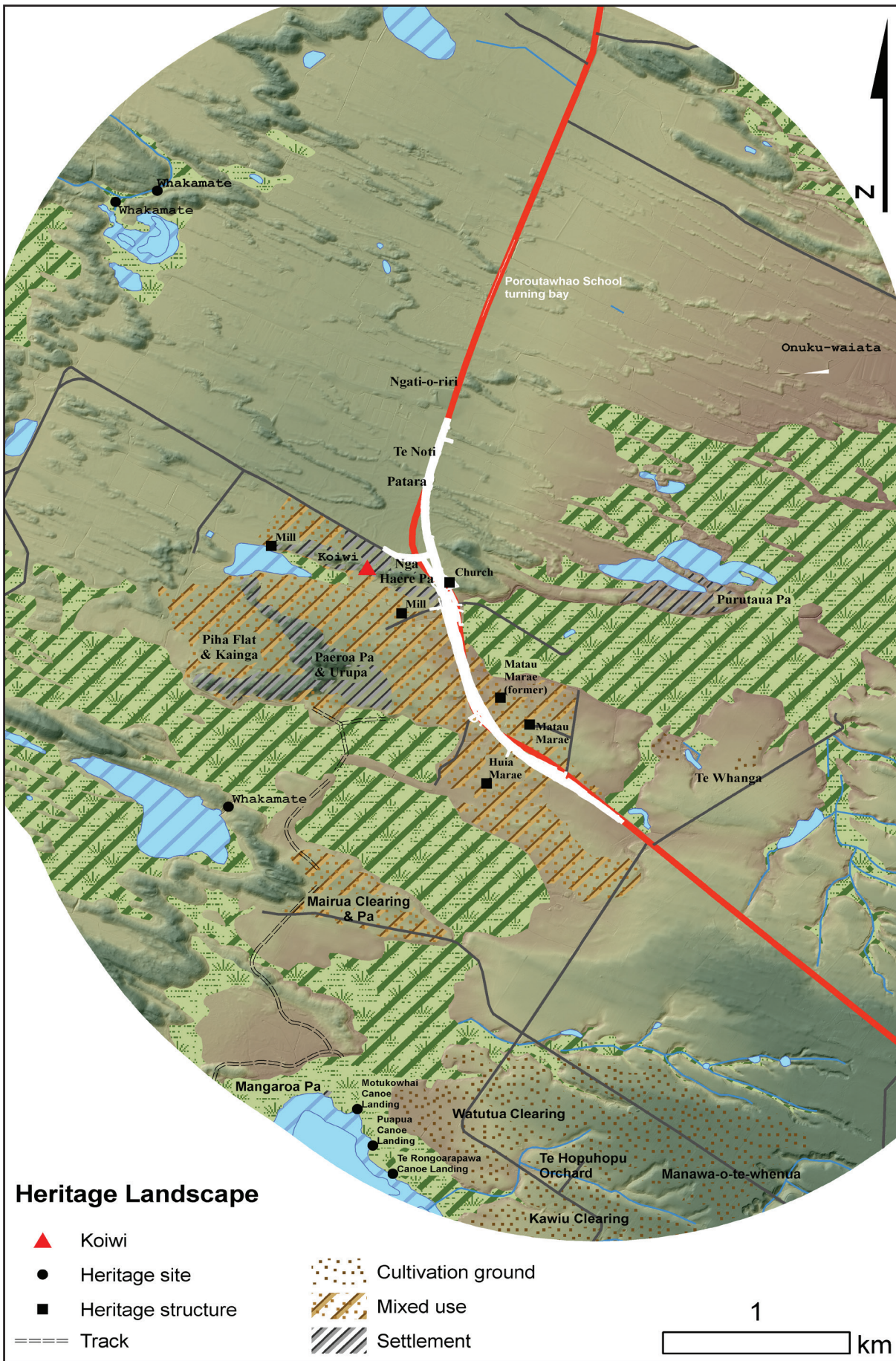


Figure 5: Selected named features of the historic heritage landscape (Adkin 1948). Mixed use areas correspond to land cleared of bush in the 1904 plan, Subdivisions of Section 2D of Manawatu Kuketauaki No.7D (ML1862).

Table 6: Translations of Maori heritage landscape place names shown in Figure 5. Place names include figurative descriptions of the physical landscape, and literal descriptions of activities or historic events.

LOCATION TYPE	NAME	TRANSLATION
Canoe Landings	Motukowhai	A grove of Kowhai trees
	Puapua	The breaking waves
	Te Rongoarapawa	The path of smoke
Clearings and Cultivation Grounds	Kawiu	To be shrunk
	Mairua	[the path] To the storage pits
	Manawa-o-te-whenua	The heart of the land
	Onuku-waiata	Song of the Earth
	Ruatapita	A pit used as an earth oven
	Te Whanga	The bay
	Te Whanga-iti	The little bay
Dune Cuttings	Watutua	[gardens used in a] Time of slavery
	Ngāti-o-riri	[the place where] People argued/fought
	Patara	A bottle [buried as a boundary marker]
Kainga and Pā	Te Noti	Te Noti [a person]
	Mangaroa	The long stream
	Nga Haere	The journeys
	Paeroa	The long ridge
	Piha	The ripple at the bow of a moving canoe [a geological description]
Other	Purutaua	A cork of war
	Te Hopuhopu	The bountiful orchard
	Waituhi	A pool of water where bird snares are set

states that while generally referred to as a pā, in practice the settlement was more in the form of a kāinga with cultivations, hence the classification used here. To the northwest of Lake Horowhenua are the Muaūpoko clearings and cultivation grounds of Watututa, Kawiu and Manawa-o-te-whenua, while to the south of the Waimakaira Swamp are the two 19th century Ngāti Raukawa Te Whanga/Te Whanga-iti cultivation grounds. The Muaūpoko clearings and cultivation grounds to the north and east of Lake Horowhenua are derived from Adkin’s plans (1948). However, the bulk of the mixed use land traversed by the proposed realignment is the cleared land included in the 1904 plan of the MK7D2D Block (ML1862). Māori Land Court records show this area to have been widely inhabited, with a number of residences and cultivation grounds belonging to individuals of the five Ngāti Raukawa hapū distributed across this area.

The mixed use and cultivation areas shown in Figure 5 are not the only areas of such occupation in this landscape. Rather, they are simply the areas defined through researching of archival sources within a limited timeframe. Court records allude to earlier Muaūpoko clearings, likely for cultivation, in the MK7D Block and describe 19th century mixed use occupation to the north of Waitare Beach Road in the Waitare and Ngawhakahiamoe Blocks by individuals related to the five hapū of Ngāti Raukawa that settled in the area.

With regard to sites of a more limited extent, the whakamate, or artificially constructed eel trapping channels, are the most numerous and impressive. Whakamate were constructed by Māori as a means of managing freshwater eel resources, and consisted of narrow channels excavated between two bodies of water in which eels attempting to move between the two were trapped. Three specific whakamate locations are known in the region, though there are likely to be more. Of the known whakamate in the Horowhenua region, those at the Pakauhokio and Tangimate lagoons are the most impressive in terms of their size and number. There are no whakamate recorded in the project area.

Three other named locations are identified along the northern portion of the existing and proposed realignment: Ngāti-o-riri, Te Noti, and Patara. Adkin (1948) links these names to cuts made in the dune system during the original construction of the road, but notes that they more likely referred to sites in close proximity to the cuts than to the cuts themselves. A small adze was found on the sand dunes to the west of Patara and donated to the Poroutawhao School in the early 20th century. The name Patara (trans. 'bottle') most likely refers to the placement or burial of a bottle somewhere in this location as a boundary marker (cf. Otaki MB9: 240) on the dune ridge that abuts the Ngawhakahiamoe-Waitarere land block boundary. Te Noti was the sister of Tamihana te Hoia's father and it is likely she had a residence or some other association at the place that bears her name. No details have been uncovered about the quarrel that gave name to Ngāti-o-riri.

Three sites with known European associations can be located among the heritage features in the project area. Māori Land Court records state that the missionary Samuel Williams, son of the better known Henry Williams, used to attend a church at Paeroa while Te Rangihaeata was alive (Otaki MB25: 267). This indicates there was a church, most probably at the base of Paeroa hill, in the area prior to 1855. Land Court records suggest that both Anglican and Catholic services were held here, though there appears to have been a more pronounced Catholic influence in the area. The French Catholic Priest, Father Jean Baptiste Comte arrived in New Zealand in 1839 and before his return to France in 1854 established several Catholic missions and churches throughout the wider Horowhenua. In particular, he supervised the construction of a flour mill at Poroutawhao by local Māori for their own use. This is generally accepted as being in the vicinity of Paeroa Road. However, two conflicting mill locations are shown on a late 19th century and mid-20th century plan. Carkeek's 1889 plan of the MK7D Block Subsections 2A and 2A1 shows a mill, house and another structure on the north western bank of the Te Konganui Lagoon. In contrast, Adkin's 1948 plan of the same lagoon locates the mill further to the east along the course of the Waitarere Stream (less than 200m from the northern extent of the Paeroa link road, but not affected). It is possible that both plans are correct and that the mill was shifted at a later date, or that Carkeek's plan refers to a timber 'mill' of which there are several references to mills being present in the court records of the wider block.

Saint Michael's Catholic Church at Poroutawhao was also built by local Māori, this time under the direction of Father Melu in 1888. Although the church is known to have been situated on Tauheke Ridge, the exact location remains unknown. Archivists at the Society of Mary have established that the church was still in use in 1911 and it is possible that the building shown on Sec. 8 of ML1862 is the church. If correct, this would place the former church directly on both the present and proposed highway alignment (Figure 6). However, archaeological evidence

for the church would not be expected to be encountered owing to the total removal of the dune in this location. Two other candidates for the church's site are visible in the 1942 aerial photo coverage of the area, but these are located some distance to the east along the Tauheke Ridge and would not be affected by the proposed works.

Māori Land Court records allude to there being a small number of other sites with European associations in the area, with the homestead of the early settler John Davis (Otaki MB24: 100, 107) being one of notable significance. However, historic plans show a number of possible candidate sites and identifying the specific location of these sites is not possible at the present time. Overall the court records indicate only a minor European influence in this area prior to 1900.

Finally, two Ngāti Raukawa urupā reserves are located within the region on the Manawatu Kukuatauki Paeroa Block and MK7D2D Sec. 15, but only the Paeroa hill urupā appears to have been used (the Sec. 15 urupā will be discussed later). However, kōiwi have been uncovered at multiple locations along the Tauheke dune ridge to the west of SH1 outside of the MK7D2D Sec. 15 urupā reserve⁵. The context in which the kōiwi were found suggests both Muaūpoko (early) and Ngāti Raukawa (late) associations, but this cannot be confirmed. During consultation Muaūpoko advisers indicated that kōiwi could be uncovered on any of the sand dunes, which were historically used as burial grounds. None of the known urupā reserves will be affected

5 Some sources for this information have request to remain anonymous.

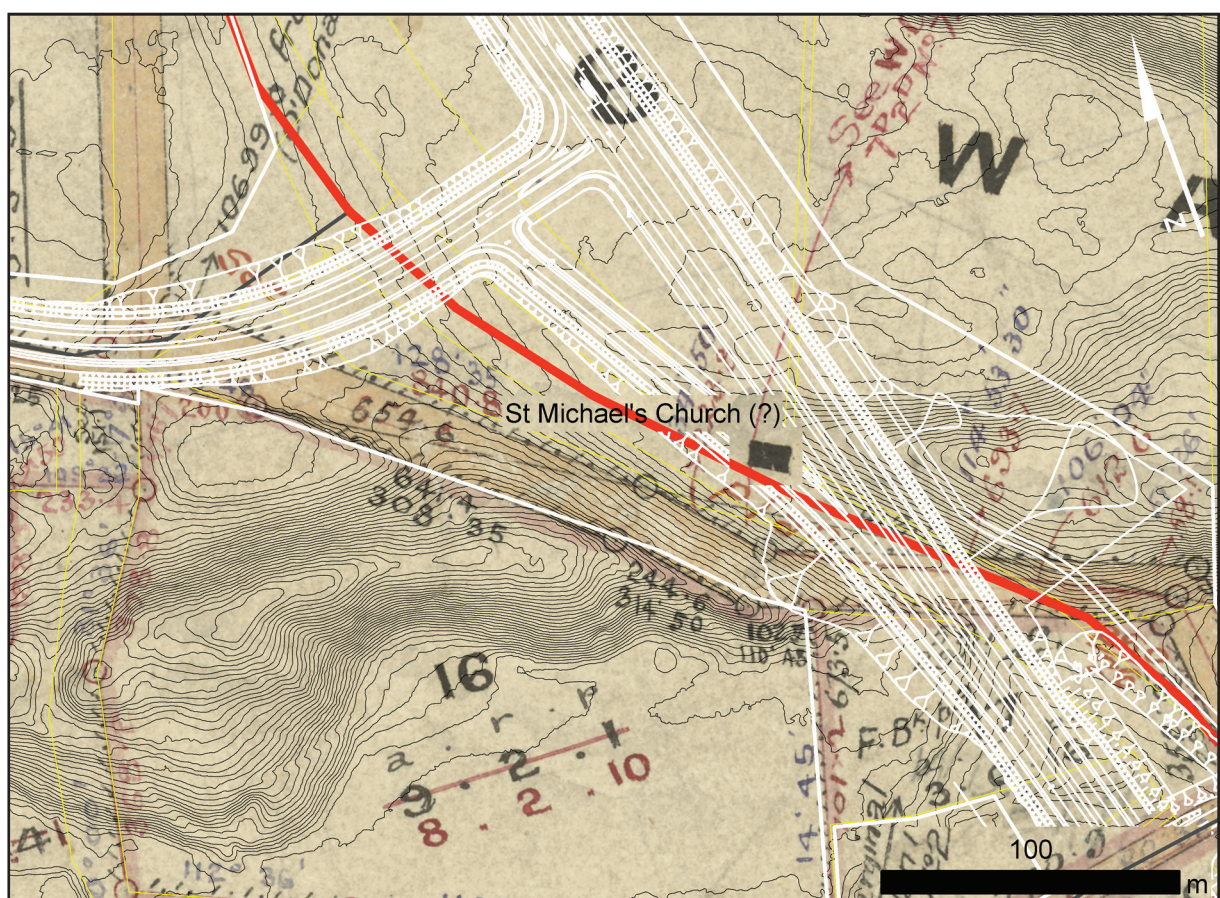


Figure 6: Detail of Māori Land plan 1862, overlaid with LIDAR derived 0.5 m contours and proposed project design, showing the possible former location of Saint Michael's church. The contours show the cut of the existing SH1 through Tauheke Ridge.

by the proposed works, but there is some risk of kōiwi being uncovered where dune ridges are disturbed.

Analysis of Landscape Effects

Overall the proposed realignment will have a relatively minor impact on the known heritage landscape. The vast majority of the realignment, and existing highway in this area, passes through land that was cleared in the latter half of the 19th century and was of mixed use with relatively light residential occupation. There is no impact on three of the four recorded pā sites in the area. Any effects on the fourth are expected to be no more than minor and restricted to ancillary structures outside the main pā boundary. Both of the recorded kāinga in the area are also avoided. Neither of the two locations recorded for the historic flour mill, nor the church at Paeroa will be affected. The site of the Catholic Church on Tauheke Ridge may be affected, but earthworks connected with earlier realignments to SH1 are likely to have already destroyed any archaeological traces.

There is no or little impact on the remaining portions of the historically significant swamp and lagoon landforms, though there is some risk of encountering sites connected with the exploitation of wetland habitats where the realignment approaches the western edge of the Waimakaira Swamps (such as small midden associated with eeling or birding activities). However, any such sites are unlikely to be unique within this landscape. The proposed design also minimises damage associated with cut-and-fill earthworks to prominent sand dune ridges that are likely to have been important tracks or pathways in an otherwise often inaccessible, swampy landscape. There is a low risk of uncovering kōiwi with the proposed earthworks along Tauheke Ridge.

However, while the overall landscape effect of the proposed realignment can be considered minor, the existing highway runs through three Māori land blocks – MK7D2D, Waitarere and Ngawhakahiamoe – that were the focal points of 19th century Ngāti Huia and Ngāti Huia ki Matau mixed residential and horticultural occupation. North of Waitarere Beach Road the existing SH1 follows the path of the historic inland ‘Dray Road’ to Foxton (cf. ML363A). To the south of SH1-Waitarere Beach Road intersection the existing SH1, Paeroa and Waitarere Beach roads follow alignments set in the late 1880s or earlier (Otaki MB24: 203). The court records indicate that much of the Māori residential occupation in this area was clustered near these roads. While the court records suggest that some horticultural land was taken up by the construction of the road, there is no indication of any houses or other residential structures being affected. It is not known what kinds of impacts subsequent alterations to the SH1 alignment during the 20th century have had on the survival of archaeological features in this area. The proposed changes to the existing SH1 alignment and connections to Paeroa and Waitarere Beach roads will increase the chances of further impacts. The detail of these potential effects is explored in the sections below.

PREVIOUS ARCHAEOLOGICAL WORK

Background to Prior Research

There is an absence of formal archaeological studies in the Horowhenua which is of concern given the increasing speed and scale of development in the dune lands and around the margins of the main lakes. Aside from George Leslie Adkin's (1948) early work, there have been no surveys of this area which have used modern archaeological methods. As a consequence few archaeological sites are recorded. This is not a reliable indicator of their absence. The assumption for any archaeological assessment should be that Māori have occupied the entire landscape, though the intensity and concentration of occupation at any one place in the landscape may vary significantly.

Site visibility is a vexing problem for archaeologists as it has significant implications for the estimation of archaeological risk – that is, the probability that a proposed project will damage or destroy archaeological materials, outside of known sites. However, from substantial recorded evidence it is possible to extrapolate patterns that provide a reasonable estimate of the potential archaeological risks in areas where there are no known sites or visible surface features. Unfortunately, at present there is not enough collated archaeological evidence to enable such an estimation in the Horowhenua region outside of the known sites⁶.

With respect to the proposed realignment, the following briefly discusses its relationship to known archaeological sites that have been recorded with the New Zealand Archaeological Association Site Recording Scheme. Only one recorded archaeological site is in the immediate vicinity of the proposed realignment, but there are other recorded sites and unknown, but potential, archaeological risks associated with the works.

Prior Research

There are seven archaeological sites recorded in the New Zealand Archaeological Association Site Recording Scheme within 2.5km of the proposed alignment (Table 6, Figure 7). Of these, three are pā sites. The two northernmost pā, S25/60 and S25/61, are located at some distance to the west of the existing highway.

Paeroa pā, S25/61, was built in 1846 by the Ngāti Toa chief Te Rangihaeata after his abandonment of the nearby Purutaua pā and was located at a strategic bottleneck on the crest of a high dune (Figure 5; Otaki MB24: 101; Otaki MB26: 280). The pā overlooked the southern inland access route to Foxton between the expansive Kopuapangopango and Waimakaira swamps. In later years the land to the east of Paeroa pā at the base of the dune was occupied by members of the Ngāti Huia and Ngāti Huia ki Matau hapū. Adkin (1948: 278-9, 320-1) suggests that this latter occupation was known as Puketawhiwhi pā, though today the area in general is known as

⁶ Recent work by Taylor (2002; Taylor and Sutton, 2007; Taylor, Sutton, and Parker, 2004) gives some hint as to the variability that may be encountered in the wider landscape between known sites.

Table 7: New Zealand Archaeological Association recorded sites with NZTM coordinates.

SITE ID	SITE TYPE	SITE NAME	EASTING	NORTHING
S24/25	Eel weir		1790136	5508858
S25/43	Pa	Mangaroa	1791284	5503588
S25/60	Pa	Nga Haere	1791609	5506771
S25/61	Pa	Puketawhiwhi	1791275	5506311
S25/64	Pit/Terrace	Mairua	1791274	5505069
S25/65	Track		1790784	5504488
S25/66	Midden/Oven	Whitiki	1790865	5503971

Paeroa pā. The crest of the original Paeroa pā dune has been used as an urupā since the 19th century, with Te Rangihaeata being among its more notable occupants.

Nga Haere pā, S25/60, located on the dune ridge directly to the north of Paeroa pā approximately 600 metres distant, was established in 1872 in response to the construction of Pipiriki pā and the anticipated aggression of Meiha Keepa Rangihwinui (Major Kemp) of Muaūpoko. With the Māori Land Court in the process of weighing up the conflicting claims between the Manawatu River and Kuketauaki Stream, Keepa’s agitation was a forceful attempt to push the merits of the Muaūpoko case and to manipulate the Court through the threat of conflict. Living along the northern boundary of the Muaūpoko claim, the various hapū of Ngāti Raukawa living in the vicinity of Paeroa pā undertook defensive measures in preparation for any eventual attack. Hakaraia te Wera stated before the court that “Ngatimania and Ngatimatau erected a pā there to protect themselves against the Muaūpoko” and that “Ngahaeere [sic] was the name of the large house in it” (Otaki MB24: 191). Other testimony by Hakaria te Wera indicates there may also be other 19th century settlements in this area (this will be discussed in more detail in the following sections). It seems likely that the reason for the location of Nga Haere pā is that the original Paeroa pā was already in use as an urupā.

The exact boundaries of the Nga Haere pā have not been established with any accuracy, but the general location described by Adkin (1948: 246) and Walton (NZAA site record, see Appendix 1) suggest the highway realignment is unlikely to affect S25/60. This site will be discussed in more detail in the following section.

Of the three recorded pā, Mangaroa pā (S25/43) is the oldest and most unique for its lakeside/swamp edge position on the margins of Lake Horowhenua and the Kaihuka Swamp. On the basis of the material culture recovered during amateur excavations (Rolston, 1944, 1947, 1948), and the fact that his Muaūpoko informants had no recollection of the pā being occupied, Adkin (1948: 222) suggested the Mangaroa pā belonged to an ancient ‘Waitaha’ people. Current archaeological theory would likely explain the differences between the Mangaroa pā and known Muaūpoko material culture by an evolution and adaptation from a yet to be defined common origin, rather than by the presence of discrete people groups.

Located on a terrace of Pleistocene beach deposits between the Kaihuka and Kopuapangopango swamp, Mairua (S25/64) is the site of a Muaūpoko cultivation ground and pā (also, Figure 5). In 1873 Te Kiri Totara described “Maerua” [sic] to the Māori Land Court as a large farm with fences (Otaki MB1A:266), thought its occupation dates to before the 19th century. This site is



Figure 7: Location, site number and site type of archaeological sites recorded by the New Zealand Archaeological Association.

crossed by the track recorded as S25/65, which leads from Te Rae-o-te-karaka pā on the western shore of Lake Horowhenua and proceeds north through the bush, cultivation and swamp lands to a fork at the base of Paeroa pā (Figure 5). Numerous references in the minutes of the Māori Land Court to the fork in the track indicate this was likely to have been an important and well-travelled pathway.

The mixed deposit of midden and oven refuse recorded at S25/66, in the vicinity of the former Whitiki Bush, is indicative of a site type that can reasonably be expected to be encountered anywhere along the proposed realignment route. However, any chance encounters outside of the known 19th century settlements are more likely to be along the eastern portions of the proposed route in areas that are known to have been targeted for birding activities over many centuries.

The final site, S24/25, is an eel weir located in the former swamp to the north of Tangimate Lagoon. A number of Ngāti Raukawa individuals are named as working for eels in the MK7D subdivision claim, including: Tamihana te Hoia, Epiha, Hohua, and Wiriti among others. As discussed above, these eel weirs were originally places of Muaūpoko occupation (Otaki MB4: 234-6).

While recorded archaeological sites in the area are few in number, those that are cover a substantial portion of the range of site types in the cultural landscape described in the Background History. Apart from the amateur excavations of Richard Rolston (1944, 1947, 1948) there have been no substantial archaeological investigations of these sites. In contrasting the number of recorded archaeological sites with the number of cultural and natural landmarks discussed in the Background History, it is apparent that surface visibility issues have affected the recording of sites in the region. Five of the seven recorded sites are associated with substantial landscape modification/earthworks, with the remaining two sites (S25/65 and S25/66) identified through the chance exposure of subsurface remains.

Sections of the proposed alignment along Waitarere Beach Road will be within 200 metres of the pā site S25/60, Nga Haere, but are unlikely affect any archaeological materials associated with this site, discussed in more detail in the following section. The remaining recorded sites will not be affected, though given that the proposed realignment passes through an area of intensive Māori occupation over many hundreds of years it is highly likely that construction will uncover previously unidentified archaeological materials. This risk will now be examined using other sources to identify possible or probable archaeological sites in the vicinity of the proposed alignment (which are not known or currently recorded with the New Zealand Archaeological Association).

RESEARCH RESULTS

The New Zealand Archaeological Association Site Recording Scheme is not a complete and perfect register of known sites and many of them are as yet unrecorded for a number of reasons. Additionally, there is significant variation in scope of what may qualify as a ‘known’ site. Knowledge of these sites may be widespread in published books or maps, overtly or obliquely referenced in archival records and court documents, or even as oral histories passed down between individuals, among others. In the following pages these varied sources will be used to further develop an understanding of the occupational history in the vicinity of the alignment and the potential archaeological risks involved.

With regard to the presence of previously unknown archaeological sites, this report relies on a detailed understanding of the known archaeology in toto to infer a qualitative probabilistic estimate of the unknown archaeological risk. This archaeological risk, which may be graded as High, Medium, Low, or Nil, is an estimate of the likelihood that the proposed earthworks will result in the modification, damage, or destruction of archaeological sites. Aside from the desktop and textual analysis presented here there have been no field or geophysical surveys to identify potential unknown archaeological risks. At the present time sufficient information has been gathered from historic sources to define the broad archaeological risks without the need for detailed in-the-field investigations.

Due to the more detailed Māori Land Court records for the 19th century occupation of this area the archaeological risks associated with the later Ngāti Raukawa occupation are discussed in greater detail below. The archaeological risk is not uniform across the entire alignment. This section divides the alignment into three separate zones (Figure 8) and evaluates the specific risks for each. However, due to the limited information available, a general risk assessment is provided first for the entire alignment with regard to the pre-1830s occupation of this landscape.

All Zones: Muaūpoko Occupation, pre-1830 High Risk

Little detail is recorded of the Muaūpoko occupation of this area prior to the arrival of Ngāti Toa, their subsequent conquest of Muaūpoko territory with the assistance of Nga Puhī, and the eventual occupation of this land by the hapū of Ngāti Raukawa at the invitation of Ngāti Toa. The testimony of Ngāti Toa and Ngāti Raukawa witnesses during the first Manawatu Kukutauaki hearing, to determine the respective land rights of the competing iwi, emphasised their right by virtue of conquest, the extinguishment of Muaūpoko mana whenua, and the unchallenged exercise of their own mana whenua (Otaki MB1A). In turn, the Muaūpoko testimony emphasised their retention of mana whenua and that land held by the new occupiers was either gifted or under dispute and actively contested. This report makes no attempt to evaluate the truth of these competing claims. However, the claim that land in the MK7D Block was gifted to Ngāti Raukawa by Muaūpoko is addressed below as it introduces two Muaūpoko names in association with this land.



Figure 8: Boundaries of risk assessment zones referred to in text.

Testifying during the original Manawatu Kukutauaki claim in 1872, Hakaraia Rangipouri – a member of the five tribes deposed by Ngāti Toa and Ngāti Raukawa – stated that Poroutawhao was “given by Tauhaki [sic] a Muaūpoko chief to Ngatihua... the owners of the land gave land on account of their having kept to the terms of the peace making” (Otaki MB1A: 109). Later, during the partition of the MK7D2D Block in 1894, Mihipeka Tatana of Ngāti Te Manea states that the land was gifted to the descendants of Ngarangiorhua by Muaūpoko on account of his releasing Hengahenga, a Muaūpoko chieftainess captured during the earlier conflicts (Otaki MB22: 32). In the same case Tamihana te Hoia, of Ngāti Huia, stated that Hengahenga was the former owner of the land at Poroutawhao (Otaki MB22: 94). Of the two Muaūpoko names above, it is Hengahenga’s that appears most frequently in the minutes of the Court, though only ever in the context of her role in the gift of this land to Ngarangiorhua. While this provides little indication for determining archaeological risk it does provide two names linked with the area that may at some stage be connected to other written or oral histories, which may in turn be relevant to the archaeology here.

During the subdivision claims for the MK7D, MK7D2D, Waitarere and Ngawhakahiamoe blocks only two general statements of likely archaeological correlation are made with regard to the earlier Muaūpoko occupation of the land. The first set of statements refers to the existence of earlier clearings, identified as patches of secondary regrowth amongst the virgin bush. Referring to land claimed by Te Koau, Metera te Karaha stated it “was covered with scrub, koromiko and other small growth... [and] had been an old clearing by former occupants” (Otaki MB24: 108). This “overgrown” clearing indicates the likely presence of Muaūpoko cultivation grounds and residences in this area (Otaki MB24:107). The second reference is to the eel weirs of the region having been first used by Muaūpoko and later by members of Ngāti Huia and Ngāti Huia ki Matau, with Te Hutana and Hiringi te Pahau stating that the “Muaūpoko pointed out the weirs” to the new occupiers who then “worked openly... on Muaūpoko weirs” (Otaki MB4:234-6). A third isolated reference, discussed below in Zone 1, indicates inland bush occupation by Muaupoko in connection with birding activities.

All three references indicate that the subsequent occupation of the landscape by the hapū of Ngāti Raukawa, discussed below, shared a number of commonalities with the earlier Muaūpoko occupation. This in itself is not surprising. Tamihana te Hoia stated that, “[t]he reason why Ngatihua cultivated at Poroutawhao was through its suitability for purpose” and certainly the original Muaūpoko occupants would have recognised this too (Otaki MB24: 249-50). Although there is little written record for Muaūpoko occupation in this area, those records that exist indicate it is likely to have been of a similar nature to the better known 19th century occupation by the hapū of Ngāti Raukawa: birding snaring in the bush, eeling around the lakes and swamps, but predominantly horticulture mixed with residential occupation where the soil was suitable.

A substantial number of artefacts of a pre-19th century origin have been found on farm land formerly owned by the Tait family in the former Ngawhakahiamoe Block, adjacent to the northernmost portions of the alignment. This suggests the presence of an as yet unknown settlement or some other intensive landscape use by early Māori at this location. However the exact details of the locations where these artefacts were recovered is unknown. Additionally, during consultation, Muaūpoko Taiiao advisers indicated that kōiwi could be uncovered on any of the sand dunes, which were historically used as burial grounds, and that there was a high

potential for artefacts of historic interest to be recovered.

Zone 1: Southern Extent to Clay Road Low Risk

Zone 1 is located at the south eastern extremity of the proposed realignment in an area that was formerly within the 1872 bush line (Table 7, Figure 9). By 1904 this land had been partially cleared along the margins of the Levin-Foxton road, now known as SH1. Directly to the east is the Kouranui Stream and swamp. Speaking before the court in 1880, Tamihana te Hoia stated that, “Kouranui is a swamp[,] my ancestors caught eels there[,] [M]y weirs are there now” (Otaki MB4: 243). Speaking at a later date in 1894, [Hakaraia?] Te Wera states that the, “branch of the Kouranui was a snaring stream” and that “it was Hohaia and others who snared there” (Otaki MB24: 271-2). The likelihood that the activities described here repeat the patterns of earlier Muaūpoko occupation is indicated by the testimony of Tatana in 1880. Referring to Te Whanga, located on the east bank of the Kouranui adjacent to the Waimakaira Swamp, Tatana [te Whataupoko?] stated that, “we got birds at Whanga... Tipene and Te Koru got birds there. Mata and Hoani... they found a Muaūpoko house there” (Otaki MB4: 253). While the above testimony points to a less intensive occupation of the land in this zone, in contrast to the following zones, it does indicate that a number of individuals had interests in the area.

In 1896 the Māori Land Court vested the title for Sec. 68 in the name of Nepia te Rau, of Ngāti Manea. While it is highly likely that horticultural activities were undertaken on this section after the clearance of the land the narrow and limited extent of the proposed earthworks in this area restricts the potential scope of any detailed investigation of former horticultural practices. Archaeological materials connected with fishing or birding activities located on the margins of the Kouranui swamp and stream may be encountered. There is also a possibility of organic materials being preserved in peat deposits that have retained sufficient soil moisture to preserve anaerobic conditions.

On the south side of SH1 in Zone 1, Sec. 60 was vested in the name of eight individuals by the Court. These were:

Tamihana te Hoia
Nepia te Rau
Te Ati te Hoia
Popo te Hoia
Henare Karouaputa
Arete te Popo
Makarini te Popo
Kerehoma Paratawa

As shown in Figure 9, the bush line for Sec. 60 in Zone 1, as surveyed in 1904, runs to the edge

Table 8: List of affected properties in Zone 1.

HISTORIC LEGAL DESCRIPTION	PRESENT LEGAL DESCRIPTION
Manawatu-Kukutauaki 7D2D Sec. 60	Manawatu-Kukutauaki 7D2D60C Block

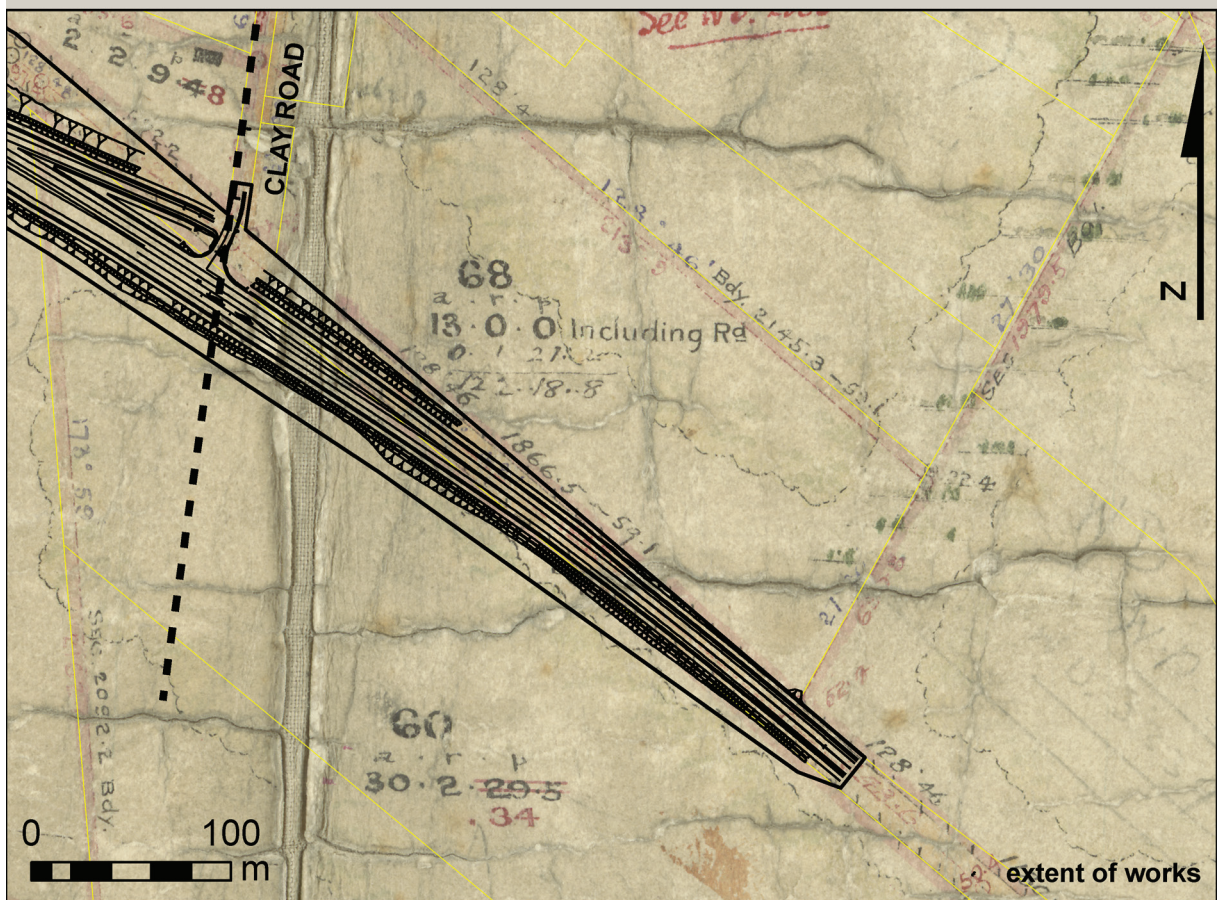


Figure 9: Detail of the current and historic landscape in Zone 1. Proposed design overlaid 2010-11 aerial photographs sourced from LINZ (top) and historic survey plan, ML1862 (bottom). Note the position of the bush line south of SH1 in the historic plan.

of the existing SH1 alignment. There is little risk of encountering horticultural or residential features here. Rather, it is more likely that small features associated with forest based birding activities may be uncovered.

Zone 2: Clay Road to Paeroa Road, Including SH1-Paeroa Road Link Road Medium Risk

Zone 2 extends to the west of Clay Road and follows SH1 north to the existing intersection of SH1 with Paeroa Road and follows the centreline along the latter. This Zone includes the new SH1-Paeroa Road link road. Aside from the northern margins of Sec. 71 and 57A, all sections in this zone had been cleared of any native bush by 1904 (Table 8, Figure 10). Sections 62 and 71 also included small portions the Waimakaira Swamp. A number of structures of various sizes are shown on the 1904 MK7D2D plan of this zone. Aside from the former Matau Marae complex on Sec. 57B it is assumed that these indicate small homesteads or whare. There are nine buildings located on historic sections crossed by the proposed realignment. Two buildings on Sec. 57D are outside the alignment and are unlikely to be affected. However, external features related to the buildings, such as rubbish pits, may be at some risk. A third building on Sec. 35 is also located nearby, but sufficiently removed to be considered a lower risk. Māori Land Court records describe a range of buildings and structures on this block, though it is likely that most of the buildings indicated on the plan are houses or whare. Many more buildings and structures were present on this land block during the 19th century that were either no longer present or were not depicted at the time the ML1862 plan was produced. For the sake of caution it is assumed here that, although it was produced in 1904, all buildings or structures marked on the MK7D2D plan ML1862 pre-date 1900.

Zone 2 includes a narrow neck of land separating the Waimakaira and Kopuapangopango Swamps that was within the former 1872 bush line, but which was cleared by 1904. As the only dry-land north-south access route between the two swamps for some distance it is likely that this was an area of high traffic over many centuries. This brings an increased risk of encountering temporary occupation sites (small midden, ovens and fires etc.). By the late 19th century this land had been cleared and was under a mixed use occupation by members of the Ngāti Huia and Ngāti Huia ki Matau hapū.

At the south eastern extent of Zone 2, a small portion of Sec. 60 had been cleared by 1904. Ownership of this land was disputed between Tamihana te Hoia and Tatana Whataupoko, though there is no mention of any buildings or structures on the section in the court records. It seems likely that this cleared land was cultivated. Additionally, while the testimony is imprecise, it appears that one or more waka were either built on or in the vicinity of Sec. 60. Under examination by the Court, Nepia te Rau stated that he was aware of Hapi te Rangitewhata constructing a waka named Te Mahiwahine near the roadside (i.e., the present SH1) and that the waka was made to carry the produce raised at Poroutawhao. However, he could not confirm that either Te Mahiwahine, or a second waka named Te Ruamiari, were made on Sec. 60. In any case, it appears likely that one or more waka were built near the roadside along the southern portion of Zone 2.



Figure 10: Detail of the current and historic landscape in Zone 2. Proposed design overlaid 2010-11 aerial photographs sourced from LINZ (left) and historic survey plan, ML1862 (right).

Table 9: List of affected properties in Zone 2.

HISTORIC LEGAL DESCRIPTION	PRESENT LEGAL DESCRIPTION
Manawatu-Kukutauaki 7D2D Sec. 20	Lot 3 DP 58154
Manawatu-Kukutauaki 7D2D Sec. 21	
Manawatu-Kukutauaki 7D2D Sec. 23	
Manawatu-Kukutauaki 7D2D Sec. 30	Lot 4 DP 58154
Manawatu-Kukutauaki 7D2D Sec. 32	
Manawatu-Kukutauaki 7D2D Sec. 33	Lot 3 DP 431661
Manawatu-Kukutauaki 7D2D Sec. 35	
Manawatu-Kukutauaki 7D2D Sec. 36	Manawatu-Kukutauaki 7D2D36A Block
	Manawatu-Kukutauaki 7D2D36B Block
Manawatu-Kukutauaki 7D2D Sec. 56	Part Manawatu-Kukutauaki 7D2D56A1 Block
	Manawatu-Kukutauaki 7D2D56A2 Block
	Part Manawatu-Kukutauaki 7D2D56B Block
Manawatu-Kukutauaki 7D2D Sec. 57B	Lot 4 DP 61399
Manawatu-Kukutauaki 7D2D Sec. 57C	
Manawatu-Kukutauaki 7D2D Sec. 57D	Manawatu-Kukutauaki 7D2D57D2A Block
	Lot 1 DP 16204
	Lot 4 DP 61399
Manawatu-Kukutauaki 7D2D Sec. 57F	
Manawatu-Kukutauaki 7D2D Sec. 60	Manawatu-Kukutauaki 7D2D60C Block
Manawatu-Kukutauaki 7D2D Sec. 62	Lot 1 DP 73873
Manawatu-Kukutauaki 7D2D Sec. 71	Lot 4 DP 61399
	Lot 2 DP 73873

Directly to the west of Sec. 60, Sec. 56 appears to have been cleared in two phases. Tamihana te Hoia states that the land to the south of the road abutting Sec. 56 was cleared in 1858, while Hakaraia te Wera stated that the land on Sections 56 and 57 was cleared in 1874 and that Sec. 56 included land purchased from the Muaūpoko (Otaki MB24: 202, 206). According to Nepia te Rau, the first clearing on Sec. 56 was made by the slaves of Te Hoia in an area later occupied by the sheep pens of Tamihana te Hoia (Otaki MB24: 202, 227). The location of Te Hoia's clearing was known by the name, Hinaupiopio (the Hinau [a tree] where the Piopio [an extinct native bird] reside), and after the bush was cleared and burnt the land was cultivated (Otaki MB24: 241). According to Hakaria te Wera Hinaupiopio was of a small extent and not widely known (Otaki MB24: 274). His testimony also suggests that it straddled the road between Sec. 56 and 57 (Otaki MB24: 279), and that Hohaia had a house at Hinaupiopio, but it is unclear if this on the Sec. 56 or 57 portion of the clearing. The location of residences and other structures on the 1904 plan ML1862 suggest Hohaia's house is more likely to have been located on Sec. 57, but he is known to have had two houses and it is possible that one of these was located on Sec. 56.

In 1895 Sections 57B and 57C were vested in the name of Hohaia te Pahau, the former on behalf of himself, Hoana Teimana and Rakera Huia, and the latter on behalf of his brother,

Hirini te Pahau. Sections 57D and 57E were vested in the name of Kapa te Karaha on behalf of Hoana Teimana and Sec. 57F in the name of Hamareta Menehira. Later court orders may have added further names to the certificates or completely changed the list of owners for some sections. These sections are now within a larger title and are already affected in part by the existing highway. The proposed alignment will encroach further into these areas, with the historic Sec. 57F entirely within the designated area.

Court records indicate that Kapa te Karaha had a clearing and cultivation on Sec. 57D alongside the road, with Tamihana te Hoia's testimony suggesting that his cultivations covered an area of approximately four acres (Otaki MB24: 226, 244). Details from the Māori Land plan 1862 (Figure 10) suggest that the extent of works for the proposed realignment in this section will be adjacent to the home of Kapa te Karaha (or his descendants) and at some risk of uncovering archaeological features connected with this residence. It is also likely that horticultural features will be uncovered in this section.

Beyond the vestment of Sec. 57F in the name of Hamareta Menehira in 1895, no other information has been identified about this section. No structures are shown on this land in the 1904 plan. A substantial portion of this section has already been heavily modified through earlier changes to the road alignment, but there is some risk of encountering archaeological materials from residential structures or horticultural features.

As stated above, Sec. 57C was vested in the name of Hohaia te Pahau on behalf of his brother, Hirini te Pahau, who was not named in the original Certificate of Title for Sec. 57. In the Māori Land Court minutes that have been reviewed to date there is no mention of any activity by Hirini in this area. Directly to the north in Sec. 57B, Hohaia te Pahau's home may be one of the buildings identified among the former Matau Marae complex or, if not surveyed, located in the general vicinity (Figure 10). Another house is located in this general area, though the exact location is unknown at present. According to Nepia te Rau, Tomuri asked Te Rau for permission for his daughter, Paiaka, and her husband Kireona Paratawa [sic], to "occupy a part of the land about where Hohaia's house stands" (Otaki MB24: 226).

A number of other people and the activities they undertook are mentioned in connection with Sec. 57 in general, though they or their descendants may not have received a title to this land. Tatana Whataupoko, Karepa Kapukai, Hakaria te Wera, Te Rau, Te Whawharua, Matenga, Kereoma [sic?] and Huia are all recorded as having clearings and cultivations on the land later designated Sec. 57⁷. While the records reviewed thus far do not mention any houses connected with these people on this land, it is likely that at least some of them had houses or other structures on the land.

North of Sec. 57B and extending to southwest bank of the former Waimakaira Swamp and Waikakariki Lagoon is Sec. 71. In 1904 the northern and eastern portions of this section were still swamp and bush land, respectively. However, the rest of the land was a cultivation ground during the 19th century. In describing the cultivations of Te Kōpi on Sec. 30, which is adjacent to Sec. 71 but separated by the road, Tatana te Whataupoko states that, "the part Te Koopi [sic] cultivated was on the north side from the road to the hillock. Te Koopi did not cultivate the

⁷ There are multiple individuals named Huia that lived, or may have lived, in the Poroutawhao/MK7D area during the 19th century. At this stage it is not possible to determine which Huia is being referred to.

southern end of No. 30” (Otaki MB24: 124). That Te Kōpi’s cultivations crossed over into Sec. 71 is indicated by a further statement of Tatana’s that, “Te Karaha turned Te Koopi off the narrow strip to the east of the road abutting the southern end of No. 30” (Otaki MB24: 126). It is likely that the reason te Karaha ‘turned’ Te Kōpi off the land is because he was himself cultivating this land, though references to this are yet to be identified in the court records.

To the west of the existing and Sec. 57 and 71, the new alignment crosses eight additional historic sections before reaching the end of Zone 2 at Paeroa Road. While the records reviewed to date are silent on Sec. 32 and 35, they indicate that the remaining sections (20, 21, 23, 30, 33 and 36) were all cultivated. Nepia te Rau’s statement that there was a house on Sec. 30 is the only evidence of residential occupation on these sections in the court records, though three structures are shown on Sec. 33 and 35 that appear to be two houses and a shed. However, these are located some distance from the proposed works.

Section 30 appears to have the most complex occupation sequence, with at least the following 14 individuals associated with the section:

Te Kōpi
Te Konawaau [?]
Te Rau
Nepia te Rau
Metera te Karaha
Kapa te Karaha
Kaiponu
Te Kahu
Hepiri
Hamuera
Pia te Wakaraki
Pita
Namana
Hakaria te Weraamahuta

According to Tamihana te Hoia, the section was cleared in 1842 and divided between three groups of owners: Metera te Karaha having the southern part; Pita and Namana the western part; Te Kōpi and Te Konawaau, his brother, the northern part (Otaki MB24: 137). Nepia te Rau states that Te Kōpi’s land “extended to the place where Matiu Manumoewaka’s pataka stood i.e. a framework to dry corn on”, but it is unclear if Matiu’s pataka was located to the north or the west (Otaki MB24: 127). Court records from 1910 indicate that Sec. 30 was eventually vested in the name of Metera te Karaha and Kapa te Karaha.

To the north of Sec. 30, Sections 20, 21 and 23 were cultivated by the following individuals:

Te Rau
Hakaria te Weraamahuta
Manahi te Humu
Nikorima te Haunga

Hapine
Kaiponu
Riria Hapi

These sections were also cleared in 1842. Of particular note amongst the cultivations in this area is the statement by Tamihana te Hoia that Te Karaha had planted Taro along the banks of the stream separating Sec. 21 and 23 (Otaki MB24: 103). In 1895 Section 20 was vested in the name of Manahi te Humu, Sec. 21 in the name of Nikorima te Haunga, and Sec. 23 in the name of Hakaria te Weraamahuta to hold in trust for Riria Hapi.

While there is only the one reference to a residence west of the existing SH1 on Sec. 30, and three other structures shown on Sec. 32 and 35 in the ML1862 plan, it is likely that other houses or structures were present amongst the horticultural features (cf. Bader, 2014). However, given the lack of description of residential features in this area it is likely that any such structures were more informal and temporary occupancies. The main residences in this area are more likely to have been located further to the west or north, near the Paeroa and Nga Haere pā, respectively.

While there are a number of houses located within Zone 2, Māori Land Court records indicate the main archaeological risk in this area relates to a range of horticultural activities taking place after the bush clearance. The greatest risk of encountering houses and associated residential features (such as rubbish pits or wells) lies with those portions of the alignment that cross parts of Sec. 57. In particular, the location of Kapa te Karaha's home on Sec. 57D near the eastern edge of the alignment's cut, though there are also a small number of other residences in the area that cannot be definitively located.

Zone 3: Paeroa Road to Northern Extent, Including Poroutawhao School Right-turning Lane
High Risk

Zone 3 extends from Paeroa Road to the northern extent of the proposed works and includes the new SH1-Waitarere Beach Road connection and the Poroutawhao School right-turning lane. By 1872 all the affected land in this zone was cleared, except for a small patch of bush located at the current SH1-Waitarere Beach Road intersection that was cleared before 1904. Initially all of the land in this zone was part of the MK7D Block, but it was later subdivided into three separate blocks. The MK7D2D Block extends south of Waitarere Beach Road; to the north and running parallel to Waitarere Beach Road is the Waitarere Block (Table 9, Figure 11). Approximately 500 metres to the north of Waitarere Beach Road is the Ngawhakahiamoe Block.

One building is shown in Zone 3 on Sec. 8 of the Waitarere Block on plan ML1862 (see Figure 6). It is unclear if this building is the former Saint Michael's Catholic Church or connected to the Māori residences discussed below. It is possible that the building shown on Sec. 8 of ML1862 is the church, and this would place it directly on the alignment of the present highway. Archaeological evidence for the church would not be expected to be encountered in this area where the dune has been substantially cut away.

At the northern extent of the project, the proximity of the new Poroutawhao School turning

lane to an historic water source, the former Waihoru-o-Whiripo pool, suggests there is a high likelihood that archaeological materials are present in this area. However, the limited extent of earthworks here that require only minor modifications to existing batters at two dunes mean there is a low risk of archaeological materials being uncovered.

There are four notable risk factors associated with Zone 3. Three of these can be tied to specific sections: MK7D2D Sec. 16 and 17. The fourth covers a more substantial but less well defined area that may extend across the Waitarere and Ngawhakahiamoe blocks.

Manawatu-Kukutauaki 7D2D Sec. 17: Huia’s Residence

According to the testimony of Nepia te Rau, Sec. 17 and 29 of the MK7D2D block were cultivated by Pia and his father, Te Rau (Otaki MB24: 132). On its own the potential disturbance of Māori cultivation grounds would be of a low concern. However, court records also indicate that Huia resided somewhere on Sec. 17 (see Figure 11). According to Hakaraia te Wera, “Huia went to live near the pā [Nga Haere, S25/60] for protection⁸. When the Muaūpoko trouble was over Huia returned to his old place on No. 17” (Otaki MB24: 191).

While the eastern third of Sec. 17 is now within the present SH1 alignment and unlikely to have any surviving archaeological materials the proposed realignment is at a high risk of encountering this site on the remaining section. There are two houses and associated structures

8 See note page 43.

Table 10: List of affected properties in Zone 3.

HISTORIC LEGAL DESCRIPTION	PRESENT LEGAL DESCRIPTION
Manawatu-Kukutauaki 7D2D Sec. 16	Lot 7 DP 88867
Manawatu-Kukutauaki 7D2D Sec. 17	Lot 1 DP 40353
	Lot 5 DP 61399
	Lot 6 DP 88867
Waitarere Sec. 4	Lot 2 DP 61632
Waitarere Sec. 7A2	Lot 1 DP 304414
	Lot 2 DP 304414
	Lot 2 DP 88263
	Lot 2 DP 61632
Waitarere Sec. 8	Lot 1 DP 88263
	Lot 2 DP 88263
	Section 3 SO 28705
	Section 4 SO 28705
Ngawhakahiamoe [Sec. unknown]	Lot 1 DP 427692
	Lot 2 DP 427692
	Lot 1 DP 68002
	Lot 2 DP 68002
	Lot 4 DP 68002
Manawatu-Kukutauaki 7D1	Part Manawatu-Kukutauaki 7D1,2 Block
	Part Manawatu-Kukutauaki 7D1,3 Block

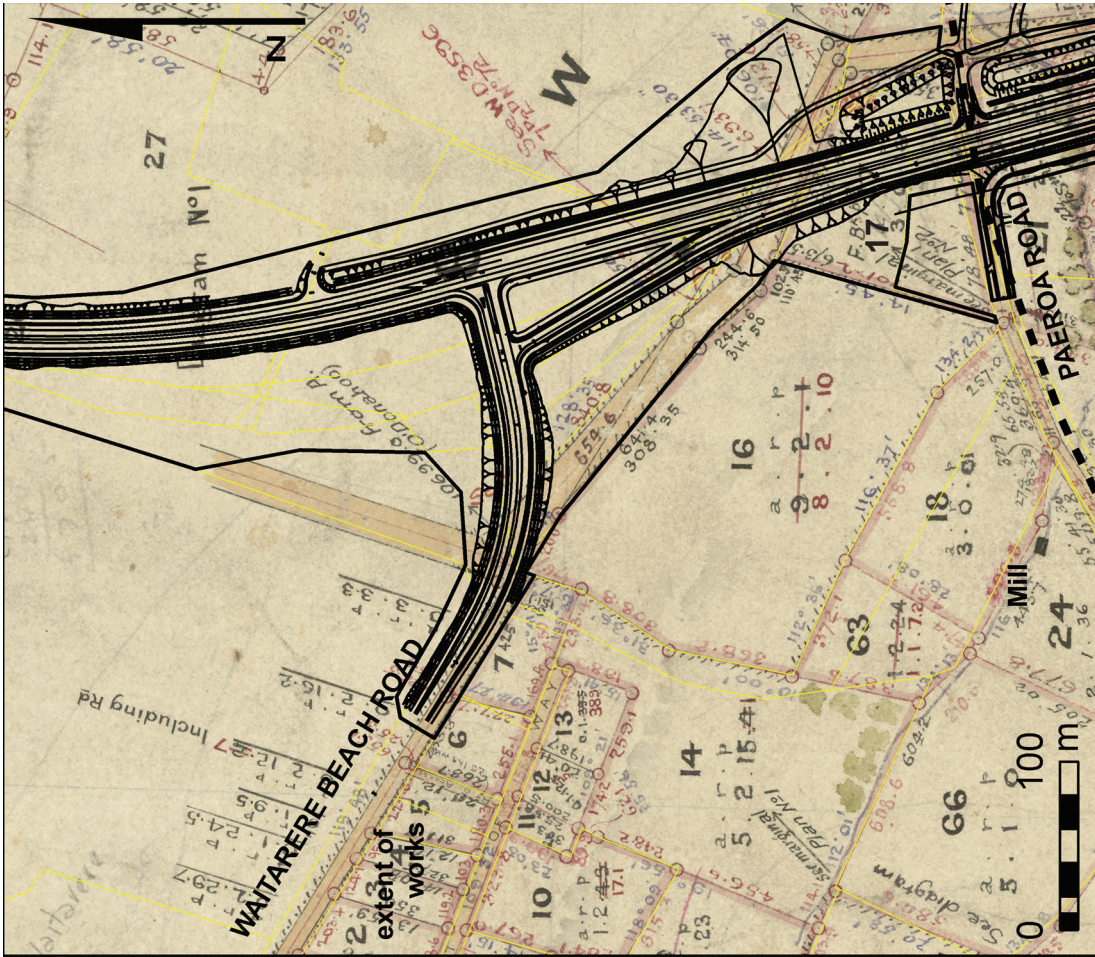


Figure 11: Detail of the current and historic landscape in Zone 3. Proposed design overlaid 2010-11 aerial photographs sourced from LINZ (left) and historic survey plan, ML.1862 (right).

currently located on this section and archaeological materials may be encountered underneath these structures, should these buildings be removed.

Manawatu-Kukutauaki 7D2D Sec. 16: Nga Haere and Te Paiaka no te Waiariki Pā

As mentioned above, during a period of conflict between Muaūpoko and the local Ngāti Raukawa hapū, Huia moved from his home on the MK7D2D Sec. 17 to live near Nga Haere pā. This pā was located on the Tauheke dune ridge, directly adjacent to the Sec. 17, within and to the west of the MK7D2D Sec. 16.

As described above in the Prior Research, Nga Haere was established in 1872 in anticipation of conflict following from the construction of Pipiriki pā at Lake Horowhenua by Muaūpoko. Remembering the pā he had seen as a young child, Rod McDonald described Nga Haere as “a pa on the hill... where the Catholic church now stands. As far construction went it was very inferior to Kemp’s, being merely of upright logs, set in the ground, and not even loopholed” (O’Donnell, 1929: 138). Adkin (1948: 246) recorded the outline of a palisaded enclosure on the dune ridge, with the largest terrace covering an area of approximately 80 x 20 metres terminated by ditches at either end. Both historic aerial photographs and LIDAR derived topographic data suggest this terrace lies to the west of Sec. 16., on Lot 2 DP 88867 (Figure 12). The exact extent of the pā is unknown, though Adkin mentions that features and midden identified on the main terrace are also found further to the east along the dune ridge extending into Sec. 16. Faint outlines of these features are also visible in the LIDAR topography.

While it appears that the main settlement area of Nga Haere pā was located outside Sec. 16, considerable care should be exercised around any earthworks within the bounds, or around the margins, of Sec. 16. Court records indicate a number of other settlements in this area, though it is unclear if these are independent references to a single settlement, or a number of discrete settlements. Hakaria te Wera told the Court that Karanama “had a pā there on No.16 called Te Paiaka no te Waiariki [named after] a woman of Muaūpoko” (Otaki MB24: 188-9). Later in the proceedings, Karepa Kapukai stated that he and others “returned to our kainga at No.16” after being forced off another block of land (Otaki MB24: 213). Finally, according to Tatana te Whataupoko, Hakaria te Wera had a kāinga on Sec. 7 adjacent to Sec. 16. While there are some similarities between pā and kāinga type settlements, the two terms are generally not used interchangeably. Therefore the above suggests the presence of at least three distinct settlements on, overlapping or in close proximity to Sec. 16. This includes Nga Haere pā. No statements have been found that indicate whether these settlements pre or post-date the Nga Haere pā. A site visit identified a number of surface features consistent with a pā or kāinga type settlement along the entire length of the dune on Sec. 16 (see terraces, Figure 12). In addition to terraces, paths, and probable storage pits a number of smaller depressions that might be individual graves were noted along the length of the dune⁹. Given the nearby presence of the Sec. 15 urupā and a history of kōiwi being found along the ridge there is a high risk that these small depressions are unmarked graves. It is unclear how much of the site has already been destroyed by prior earthworks associated with the existing SH1 alignment. Minor features related to these settlements may be uncovered north of the ridge in the vicinity of the new SH1-Waitarere Beach Road intersection.

⁹ These smaller depressions may also be a product of tree stump removal.



Figure 12: LIDAR derived contours (0.5 m interval) and digital elevation model of Tauheke Ridge to the west of SH1, overlaid with the proposed realignment design. A terrace corresponding to the dimensions of Nga Haere pā, recorded by Adkin (1948:246), can be seen to the west of MK7D2D Sec. 16. Other terraces are also visible in the topographic model. Koiwi have been found at multiple places along the dune ridge, but only one location has been recorded with any accuracy.

Twelve individuals have been identified as living on or in the vicinity of Sec. 16 (Otaki MB24: 167, 174, 184):

Wiripo
Poniwahio
Hakiaha Pakitiri (?)
Mawhita
Poawa
Hope
Nikorima
Maihi te Ngaru
Te Wera
Hakaria Te Wera
Nikorima
Hinekou

This may not indicate twelve distinct households, as it is likely that some of the above have a spousal relationship. It is also likely that most of these households were associated with one of or more of the above pā or kāinga settlements. Unfortunately, there is not enough information at present to provide a more detailed guide to the archaeological risks in Sec. 16. However, the material reviewed thus far indicates the presence of multiple individuals living in a number of distinct settlements that present a high archaeological risk. Further research is recommended here, potentially including geophysical survey.

A further fourteen individuals are associated with Sections 5, 6 and 7 adjacent to Waitarere Beach Road and running to the west of Sec. 16. The proposed earthworks are expected to have only minor effects on these former sections. However, given the intensive 19th century occupation here there remains a low risk of encountering archaeological materials. Additionally, historic aerial photography and LIDAR topography suggest the presence of a large L-shaped ditch feature at the extent of works on Waitarere Beach Road (Figure 13). No information has been identified about this feature in the court records. While this feature lies beyond the extent of works and will not be affected, there may be related but unknown risks that extend beyond its visible bounds.

Manawatu-Kukutauaki 7D2D Sec. 15: Urupa

In 1894 an order was made by Judge Mackay for an “urupa cemetery” of 24 perches (approximately 600m²) in the name of Hakaria te Weraamahuta, designated Sec. 15 (Otaki MB24: 89). Concern was raised by local hapū during consultation over the possibility this urupā was in the vicinity of the existing Paeroa Road/SH1 intersection. However, analysis of Māori Land Court records indicated that this concern was likely to have been the result of a mistake or misspelling in the minutes of the Court from 1895 relating to the allocation of Sec. 20 and 21 of the MK7D2D Block (Otaki MB27: 103). This was confirmed by a subsequent court order from 1910 that indicates the urupā reserve was centrally located within Sec. 16 of the MK7D2D Block (Otaki MB51: 187).

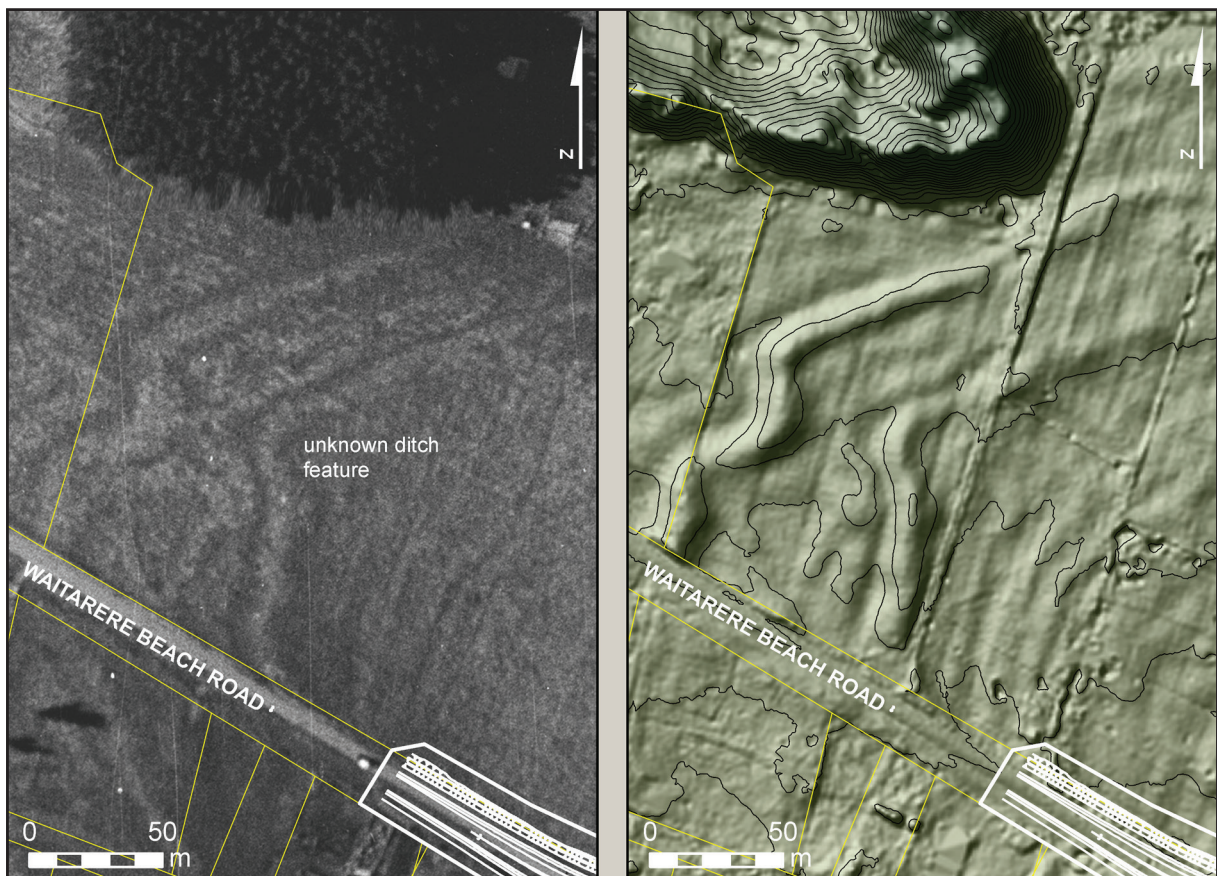


Figure 13: Possible unidentified archaeological feature located to the west of the Waitarere Beach Road extent of works. A large ditch (and bank?) feature is visible in the historic 1942 aerial photograph (left). LIDAR derived contours (0.5 m intervals) and digital elevation model (right) indicate the ditch profile remains, though it now appears to be shallower.

Court records paint a conflicting picture of the Sec. 15 urupā. The 1910 court order detailing the amalgamation of Sec. 15 and 16 suggests the urupā was unused, with the Court noting that no one “seemed to know or care anything about the cemetery” (Otaki MB51: 187). However, earlier testimony suggests there was a functioning urupā at Sec. 15. Tatana te Whataupoko lists a number of people living on Sec. 16 to the east and west of the urupā (Otaki MB24: 167), with Tamihana te Hoia noting that, “the people who are living [on Sec. 16] are encroaching on the part that belonged to the dead” (Otaki MB24: 141). If Sec. 15 was a functioning urupā it seems unlikely that no one would “know or care anything about the cemetery”, but by the same token Tamihana te Hoia’s concern that the living were encroaching on the dead would be unusual if it were not being used. Nevertheless, in the absence of more information specifying the exact location of the potential urupā any works affecting Sec. 16 should be considered high risk.

Additionally, as discussed above, kōiwi (human remains) have been uncovered along the Tauheke ridge (Figure 12). The context in which one substantial cache of kōiwi were found, as described by the bulldozer driver who uncovered them, suggests a likely Muaūpoko association. However, the location places the kōiwi at the western margin of Nga Haere pā, suggesting a possible Ngāti Raukawa association. Other finds of kōiwi at shallow depths along the dune suggest a later Ngāti Raukawa association. Without further information about the context and where the kōiwi were discovered it is difficult to determine if this represents an isolated find or an urupā related to either Muaūpoko or Ngāti Raukawa occupation. However, given the earthworks proposed there is a low risk that kōiwi may be encountered in this zone independent

of the Sec. 15 urupā.

Waitarere Sec. 7A and 8, and Ngawhakahiamoe [unknown]: Unnamed settlement

Waitarere Beach Road marks the boundary line that separates the MK7D2D Block from the Waitarere Block, with the boundary continuing on this alignment across SH1 to the far side of the Waimakaira Swamp. As a smaller block with fewer claimants and disputes the Māori Land Court minutes for the Waitarere Block are not as substantial or detailed as those pertaining to the MK7D2D Block. However, from the little detail that is provided in the Waitarere claim the evidence indicates there is a high risk of encountering archaeological materials associated with 19th century occupation in this area.

Two separate pieces of information presented to the Māori Land Court are crucial to the identification of this archaeological risk. The first is a note dating from 1892 stating that:

Poni Hakaraia wanted to locate all the land that had been allotted to himself and [his] wife (Iwi Akuhata) in the vicinity of his house on the eastern side of the road, but Karepa objected to this as it would include too large a proportion of the good land and leave his party with too large a preponderance of swamp. Another matter was that Kapa te Karaha wanted to have the part of the land allotted where his father's houses formerly stood....

After some discussion Poni Hakaraia consented to take a portion of his land about his house and the remainder in the part marked E on the plan with Hakaraia and others. (Otaki MB19: 392)

On the Waitarere Subdivision schedule of Orders presented on pages 399A and 399B of Otaki MB19, 'E' corresponds to Sec. 5 of the Waitarere Block, with 'H', Sec. 8, being granted to Poni Hakaraia and his wife.

The second crucial piece of evidence was provided to the Court in the previous year, when Tatana te Whataupoko stated that:

Hakaria's [sic] cultivation was next [to] the gate. Hohaia te Pahau came next. Namana and Pita te Rakumia. Karaha's came next. Nikorima's mother cultivated the inner part beyond Te Karaha's. These were the parts they cultivated before the Waitarere Block was set apart and the same persons continued to occupy the land in the same order as before. (Otaki MB17: 201)

Taken together the two pieces of information indicate a house and cultivation ground, belonging to Poni Hakaraia and Iwi Akuhata, to the east of the location where the Manawatu-Kukutauaki/Waitarere boundary intersects SH1; the place where Te Rangihaeata had erected a toll gate in the mid-19th century. This area is the historic Waitarere Block Sec. 8. In the areas beyond the gate at Poni Hakaraia's residence there were additional cultivation grounds belonging to at least five other people. Further statements made before the Court indicate there were also whare at some of these cultivation grounds (Otaki MB17: 165). The extent of these cultivation

complexes (mahinga kai) is variable and again Tatana te Whataupoko provides some useful detail, stating that “Metara [sic] te Karaha had a mahinga at Waitarere... [it] would probably not exceed ½ an acre, but Te Karaha’s was about five acres” (Otaki MB17: 200).

Two buildings, probably houses, fenced within larger (horticultural?) plots are shown on Sec. 8 in the plan ML1243 of the Waitarere Block dated 1893 (Figure 14). The calculated areas of the two fenced plots do not correspond to either of the two cultivation complexes with a known area, described above. While it is not possible to link either of these two building and plots to known individuals, it is highly likely that they are in some way linked to the individuals named above, their descendants or close relatives. Additionally, two probable houses and associated structures are visible on Waitarere Sec. 8 land in the 1942 aerial photograph (Figure 15). Two probable houses and associated structures are visible on Waitarere Sec. 8 land in the 1942 aerial photograph (Figure 14). At this point it is not clear if these are remnants of this Māori settlement or later 20th century features.

Further north, in the Ngawhakahiamoe Block the records are even less detailed than those of the Waitarere Block due to the claimants coming to an agreement over the apportionment of this block outside of court (Otaki MB20: 356). No survey plans have been located that provide any detail about the specific location and extent of likely archaeological sites. However, the court records suggest that occupation in this block is of a similar nature and risk profile as that noted at Waitarere Sec. 8 (Otaki MB17: 205). It is unclear whether the settlement described at

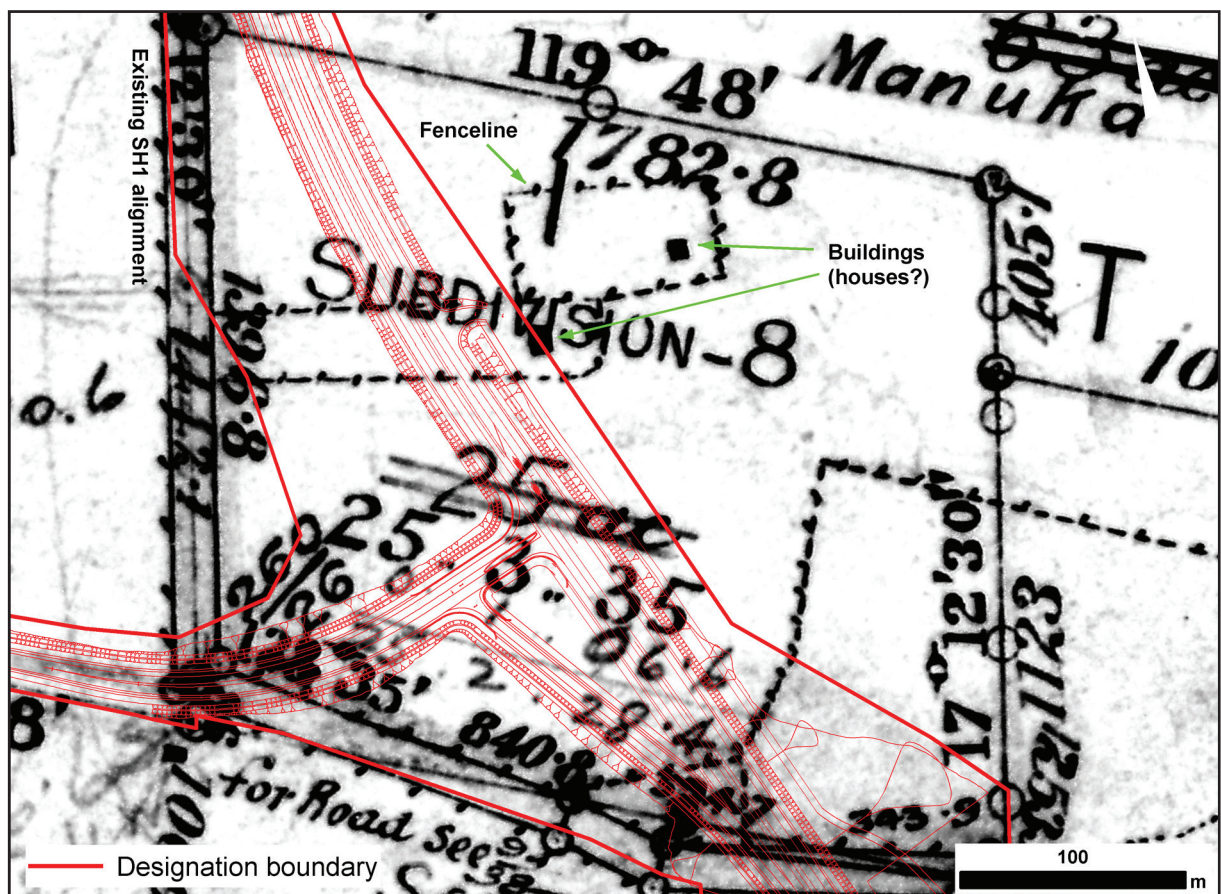


Figure 14: Detail of Māori Land plan 1243, overlaid with the proposed project design. Two structures, probably houses, are shown in the northern half of Waitarere Sec. 8 with one cut by the designated extent. Horticultural grounds of one plot are likely to be affected.

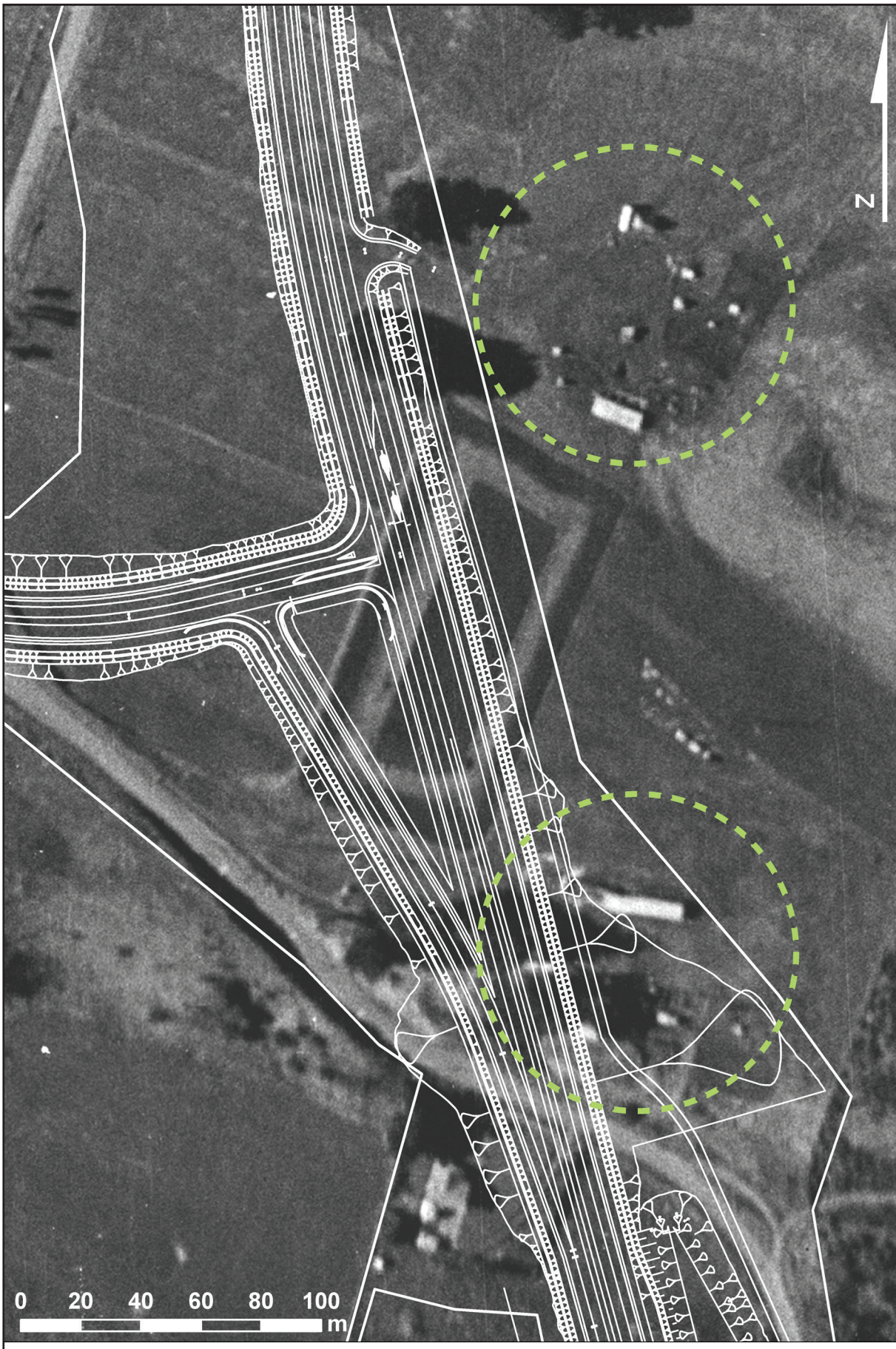


Figure 15: Detail of historic 1942 aerial photograph showing two houses (?) and other structures located on the former Waitarere Sec. 8. It is not known if these structures are related to the Māori occupation described in the Land Court records.

Waitarere Sec. 8 extends into the Ngawhakahiamoe block or not. Given the number of cultivation complexes identified north of Waitarere Beach Road, and their potentially substantial size, it is highly likely that archaeological materials will be encountered here. Investigations here will be complicated by the fact that the occupation of Waitarere Sec. 8 extended into the early 20th century. Separation of pre-1900 archaeological materials, protected under the HNZPTA, from those post-dating 1900 is unlikely to be immediately possible.

Summary of Risk

In all three zones discussed above there are known identified and unidentified archaeological sites. Zone 1 is of a low risk, with the clearing of the bush here being both late in date and of a limited extent prior to 1900. The greatest archaeological risk here is likely to be located within and adjacent to the Kouranui Stream and Swamp, where it is possible that soil conditions may have preserved organic materials. Small scale horticultural features may be encountered outside the swamp.

Zone 2 has an elevated but uncertain risk profile. Court records and the earliest available survey plan (ML1862) of buildings in this zone suggest a medium level of risk associated with the wide spread presence of horticultural features. However, a number of recorded houses on parts of the MK7D2D Sec. 57 are possibly located within the zone, but cannot be accurately located at this time. Further research is recommended to confirm the presence or absence of these residences or connected features. If other houses are identified within the construction footprint in Zone 2 this would become a high risk area.

There is a high risk of encountering archaeological materials throughout Zone 3, particularly in the vicinity of the SH1-Waitarere Beach Road intersection, as well as along and adjacent to the Tauheke dune ridge. A number of significant archaeological sites are located in this zone. Huia had a residence on MK7D2D Sec. 17. Nga Haere pā and at least two other settlements are thought to be located on MK7D2D Sec. 16. The exact location of the MK7D2D Sec. 15 urupā is unknown and kōiwi have been found in multiple places outside of the urupā on the dune. Finally, a number house and garden complexes are known to be located within the Waitarere Sec. 8, possibly extending into the Ngawhakahiamoe Block. There is also artefactual evidence to suggest an intensive occupation of the Ngawhakahiamoe Block by Muaūpoko or an earlier iwi identity prior to the 19th century.

The proposed alignment and link road are located within, or in the general proximity of, known cultivation grounds. Appropriate horticultural soil samples may be recovered from the geotechnical test pits prior to construction and provide an early guide to the identification of anthropic horticultural soils (cf. Bader, 2011; 2014). If the signatures for horticultural soils are identified early, the excavation and recording of these features during construction will be relatively rapid.

If evidence relating to 19th century Māori settlements and households is uncovered there is the distinct possibility that this material could be connected to individuals whose descendants remain in the general area. Such material could provide significant information about the

individual and collective lives of Ngāti Huia and Ngāti Huia ki Matau in the Horowhenua during this period. Adamson's (2012) use of 'improvement' as a theoretical framework for structuring the interpretation of the household archaeology of English settlers in Taranaki may be a suitable model here. How individuals and households define and set about improving their lives is closely tied to identity.

Questions relating to identity are particularly pertinent given the number of migrations known to have occurred in the Horowhenua during the early 19th century, and earlier migrations alluded to in Māori oral histories. Here the issue of identity has the potential to be explored at several levels: at the individual or household level, the intra-group level within hapū and iwi, and lastly at the inter-group level between hapū and iwi. The first level has been alluded to above and the second can be explored through the use of whakapapa as a higher order framework with a structural significance that is visible in the archaeological record across individuals and households. It is the repetition of learned behaviours – generally referred to as 'traditions' or 'tikanga' – largely transmitted along genealogical descent lines that produces this structure. The third level is also reliant on an understanding of whakapapa, but uses this framework to explore the structural aspects of tradition that sees groups take on different identities. Identifying and understanding the material signatures that are a product of the structural aspects of group identity will have an important role to play here if the separate but interwoven histories of Muaūpoko, Ngāti Huia and Ngāti Huia ki Matau are to be told.

C14 determinations, wood/charcoal identification, microfossil and faunal analysis of relevant samples will be part of any excavations if archaeological features are found, as they provide the necessary context for any sub-surface features.

CONSTRAINTS AND LIMITATIONS

Due to constraints associated with land access this assessment has largely been limited to a desktop analysis of texts and survey records. A general site visit was undertaken with representatives of the Transport Agency, MWH, Ngāti Huia and Ngāti Huia ki Matau in November of 2014. A second site visit with technical experts took place in April 2015. In both cases access was restricted to the existing road corridor and a selection of properties. A third and final site visit in July was limited to an inspection of surface features on the Tauheke dune ridge within the MK7D2D Sec. 16. While physical access to all of the land in question for the purposes of a detailed 'walkover' survey would be ideal, the absence of such a survey is not considered a significant constraint for this assessment. A range of sources indicate there is a high probability of encountering archaeological materials associated with 19th century activity during construction.

Risks associated with pre-19th century Muaūpoko occupation are less well understood. Māori

have occupied this part of the Horowhenua coast for more than seven centuries, but the vast majority of the textual evidence relates to occupation after 1830. Māori Land Court records and surviving oral histories pertaining to the wider landscape provide a limited insight into the likely nature of this earlier occupation, but not to the extent that an interpretative temporal or identity based framework can be developed prior to the commencement of earthworks. Therefore, outside of clear contextual associations (i.e., relationships between features and European introduced material culture) absolute dating methods (i.e., C14, AMS) are likely to play a significant role in the interpretation of any recorded materials given the overlapping iwi interests.

There is also an early European settler presence – specifically farmer John Davis, who was an early leaseholder in the MK7D and Waitarere Blocks – in this area that is lightly touched upon in the Māori Land Court records. However, like the earlier Muaūpoko presence, at this time there is insufficient information to enable an adequate risk evaluation.

ARCHAEOLOGICAL AND OTHER VALUES

Archaeological Values Assessment

Unknown external features of one recorded archaeological site (S25/60, Nga Haere pā) may potentially be impacted by the proposed works. There are also 12 known, but unrecorded, sites that may potentially be affected (Table 11). However, the exact location and extent of these sites is unknown at present. In the absence of further information clarifying the location, extent and nature of these sites a detailed individual assessment of their archaeological values is not possible¹⁰. Rather the archaeological values for these sites can only be broadly estimated on the basis of a number of generalised assumptions.

With only limited land access and a poor knowledge of the specific details of site location or extent, sites are assumed to remain in a moderate to good condition of preservation. Sites falling within the easement of the existing road network are likely to have been destroyed or significantly damaged, though this is only suspected to have affected the St Michael's Catholic Church site. For all other sites regular farming practices such as stock grazing or ploughing and cropping are unlikely to have had a significant impact on the physical condition of sites. Sites may also be preserved in a good condition beneath existing residential or farm buildings depending on their construction method.

While sources (Adkin 1948) indicate the potentially affected sites are not singularly unique in the wider Horowhenua region there is insufficient information about the survival and condition of these other sites to offer a regionally specific site evaluation of rarity. Instead rarity is

10 Criteria for scoring archaeological values are presented in Appendix 2.

Table 11: List of archaeological sites that may be affected by the proposed realignment and their archaeological values.

ASSESSMENT AREA	ARCHAEOLOGICAL VALUE	ZONE
Former Matau Marae	High	2
Waka construction site (MK7D2D Sec. 60)	Low	
Hohaia te Pahau’s residence (MK7D2D Sec. 56?)	Medium	
Hohaia te Pahau’s residence (MK7D2D Sec. 57B)	Medium	
Kapa te Karaha’s residence (MK7D2D Sec. 57D)	Medium	
Paiaka and Kireona Paratawa’s residence (MK7D2D Sec. 57B?)	Medium	
Nga Haere pā (S25/60)	High	3
MK7D2D Sec. 15 urupā	High	
Huia’s residence (MK7D2D Sec. 17)	Medium	
Te Paiaka no te Waiariki pā and unnamed kāinga (MK7D2D Sec. 16)	High	
Waitarere Sec. 7A, 8 and Ngawhakahiamoe settlement	High	
St Michael’s Catholic Church	High	
Poroutawhao Mill	High	

evaluated on the basis of relative site-type frequencies at a national level. Rare or individually unique sites have a higher value while more frequent or common sites have a medium or low value. In this scheme organised settlements such as pā, kāinga and marae are of a higher rarity, as are 19th century sites associated with early church activity. Residential houses would ordinarily be of a low rarity, though the potential for the future study of multiple houses at Poroutawhao belonging to known individuals of a common descent group (iwi/hapū) raises their rarity to a medium level. Other sites types are more common and of a lower rarity.

While there is variance in the relative information level across site types at a national level the relative absence of archaeological research in the Horowhenua region means that all sites that may potentially be encountered and studied using archaeological methods are of a high information value.

Following from the lack of regional information in regards to rarity and information value, the contextual/archaeological landscape values can only be speculated. However, there is a substantial body of documentary evidence (particularly for the 19th century Ngāti Raukawa occupation) that indicates there are likely to be high contextual values for many of the listed sites.

Amenity values are generally expected to be nil, though there may be some value linked to the cultural significance of Nga Haere pā and the MK7D2D Sec. 15 urupā. From an archaeological perspective any amenity value is low.

Cultural associations are high across all known and unknown sites. For sites relating to the 19th century occupation by the hapū of Ngāti Raukawa there are extensive documentary records that enable specific people, places and events of the past, which are likely to have left material traces in the archaeological record, to be linked to descendants living in the present. Te Paiaka no te Waiaraki and the unnamed kāinga are likely to have a particularly high cultural significance as one or both of them are the site(s) of first settlement for the Ngāti Tuwhakahewa¹¹ at Poroutawhao. While the same personally specific linkages cannot be drawn for sites related to the Muaūpoko and their ancestors there remains a strong attachment to those sites that evidence their history of occupation.

Given the lack of site specific information in regards to physical condition and the assumed uniformity of information, contextual and cultural values across sites the overall archaeological values for the sites listed in Table 11 are predominantly based on the variance of their rarity value. As stated above, rarity is based on relative site-type frequencies at a national level. Overall archaeological values also reflect the information values that would be expected for individual sites if there was a more substantial body of archaeological information about other sites of a similar type within the region.

A general summary of the values across all three zones and the one recorded archaeological site that may be affect is provided below in Tables 12 and 13 (the criteria for scoring archaeological values are presented in Appendix 2).

11 A hapū of Ngāti Raukawa.

Table 12: Archaeological values in the vicinity of S25/60, Nga Haere pā.

SITE	VALUE	ASSESSMENT
S26/60, Nga Haere pā	Condition	Low. Surface features are poorly defined and the western ditch at the end of the 80m x 20m terrace described by Adkin (1948: 246) has been bulldozed to provide vehicle access through the dune.
	Rarity/ Uniqueness	High.
	Information Potential	High. In addition to the occupation of the pā there are a number of other settlements and residences known to be located in the general area. Kōiwi have also been recovered from here, but it is not known if they are connected.
	Contextual Values	High. There is a substantial body of information relating to the events leading to the construction of this pā.
	Amenity Value	Low. There is some value, but this is mainly related to the sites historic significant rather than its physical attributes.
	Cultural Associations	High. This pā is connected to the contest between Muaūpoko and Ngāti Raukawa over ownership of land. Descendants of the people who constructed and occupied this pā still live in close proximity to the site.

Table 13: Archaeological values for Zones 1, 2 and 3.

SITE	VALUE	ASSESSMENT
Waitarere Beach Road Curves, Zones 1, 2 and 3	Condition	Medium to High. Farming activities are unlikely to have had more than minor effects on any subsurface archaeological features that may be present. Earthworks associated with the existing SH1 crossing of Tauheke dune ridge are likely to have damaged or destroyed archaeological sites in this area.
	Rarity/ Uniqueness	Low to High. Māori horticultural sites are numerous and expansive, though generally underrepresented and under analysed in archaeological studies. However, any material remains associated with 19th century Ngāti Raukawa, or earlier Muaupoko settlements would be of a high rarity.
	Information Potential	High. Māori Land Court records indicate a number of settlements, residences and horticultural activities in this area.
	Contextual Values	High. There is a substantial body of information relating to the surrounding landscape and sites that can be integrated to provide at least some contextual relevance.
	Amenity Value	There is no amenity value for the wider landscape. See above for Nga Haere pā (S25/60).
	Cultural Associations	High. There are multiple iwi, hapū and individual histories associated with this area in the Māori Land Court records.

Other Values Assessment

For these additional assessment criteria the three zones are grouped together as there are substantial commonalities.

Table 14: Other values for Zones 1, 2 and 3.

SITE	VALUE	ASSESSMENT
Waitarere Beach Road Curves, Zones 1, 2 and 3	Architectural	There are no architectural values.
	Historic	There are strong historic values at a landscape level. The alignment either passes within or in a general proximity to 19th Century residential and/or activity area that can in many instances be tied to known individuals or whānau groups. There is also a possibility of encountering archaeological materials associated with previous Muaūpoko occupation.
	Scientific	There are no scientific values related to either site.
	Technological	There are no technological values related to either site.
	Aesthetic/ Visual Impact	There are no aesthetic/visual impact values.
	Cultural	N/A.

ASSESSMENT OF EFFECTS

Following the guidelines set by the Ministry for the Environment (2006), this assessment of effects discusses the nature of the environmental effects of the proposed works in relation to the known or potential archaeological record. While the systematic excavation and recording of a site mitigates for the loss of archaeological information, it does not compensate for the loss of contextual, cultural and educational values (NZHPT, 2006). Where possible and practicable, avoidance is the preferred management strategy. The assessment of effects must also consider how much of the site will be affected and whether there will be ongoing impacts.

At an early stage in planning a constraint map, that included constraints identified through consultation, was prepared by MWH. The initial design for the preferred realignment avoided all sites of archaeological significance identified at that time, in particular the former site of the historic Matau Marae and Nga Haere pā. As discussed above, concern had also been raised about the MK7D2D Sec. 15 urupā, but this was later found to be outside the proposed realignment. The alignment was redrawn in May 2015 to avoid a Māori Reserve in front of Matau Marae, Lot 6 DP 61399 (part of the former MK7D2D Sec. 57D). Additionally, late (November 2015) design changes removing the link road between Paeroa Road and Waitarere Beach Road have substantially reduced potential adverse archaeological effects to high value and culturally sensitive archaeological sites along Tauheke Ridge, including: Nga Haere pā, Te Paiaka no te Waiariki pā, an unnamed kāinga and the MK7D2D Sec. 15 urupā. While this report has identified other archaeological risks in the area, the newly identified sites are not of sufficient archaeological value, nor their extents accurately located, to require further change to the alignment.

Project Works

A description of works relevant to the assessment of effects for archaeology is included in section 2.5 of the assessment of effects accompanying the Notice of Requirement and includes descriptions of earthworks and construction methodology. For more detail on the project works see this document¹².

Stripping and removal of topsoil before cut or fill subgrade may result in disturbance of archaeological material at both cut and fill sections of the earthworks. Archaeological materials may be encountered anywhere within Zones 1, 2 or 3, though they are most likely to be encountered in Zone 3 in a close proximity to Tauheke Ridge.

Assessment of Effects

No archaeological sites of nationally significant value have been identified. However, in addition to cultivation grounds located in all three zones, thirteen potential archaeological sites

¹² *Waitarere Beach Road Curves Project: Alteration to a Designation*, prepared for The New Zealand Transport Agency, July 2015.

Table 15: Summary of potential effects for archaeological sites located within, or in close proximity to, the project area.

ASSESSMENT AREA	ARCHAEOLOGICAL VALUE	POTENTIAL EFFECT	MITIGATED EFFECT	ZONE
Former Matau Marae	High	Negligible	Negligible	
Waka construction site (MK7D2D Sec. 60)	Low	Low	Negligible	
Hohaia te Pahau's residence (MK7D2D Sec. 56?)	Medium	Negligible	Negligible	2
Hohaia te Pahau's residence (MK7D2D Sec. 57B)	Medium	Negligible	Negligible	
Kapa te Karaha's residence (MK7D2D Sec. 57D)	Medium	Minor	Negligible	
Paiaka and Kireona Paratawa's residence (MK7D2D Sec. 57B?)	Medium	Negligible	Negligible	
Nga Haere pā (S25/60)	High	Negligible	Negligible	
MK7D2D Sec. 15 urupā	High	Negligible	Negligible	3
Huia's residence (MK7D2D Sec. 17)	Medium	Significant	Minor	
Te Paiaka no te Waitariki pā and unnamed kāinga (MK7D2D Sec. 16)	High	Minor	Negligible	
Waitarere Sec. 7A, 8 and Ngawhakahiamoe settlement	High	Moderate	Moderate	
St Michael's Catholic Church	High	Negligible	Negligible	
Poroutawhao Mill	High	Negligible	Negligible	

have been identified within, or in a close proximity to, the project designation (Table 15). Only one of these sites, Nga Haere pā (S25/60), is recorded by the New Zealand Archaeological Association. It is not listed in the District Council's Schedule of Historic Heritage Sites. The other sites in Table 15 have been identified on the basis of the historic record, though the survival of physical traces has not been confirmed for any sites other than the Nga Haere and Te Paiaka no te Waiariki pā. The potential adverse effects on the environment from disturbing these sites have been rated on an incremental scale of increasing effects from Negligible, Low, Minor, Moderate and Significant.

Although the archaeological values of the sites are generally high, the assessed potential effects range from negligible to significant. The assessed effects are clustered towards the lower end of the scale. This reflects the uncertainty over the location and extent of most sites. However, it is also expected that most sites have been avoided by the project works. Effects are discussed below in relation to the thirteen sites, grouped by zone. No specific sites have been identified in Zone 1, thus any effects in this area will be described in the general discussion of effects on cultivation grounds and remaining areas that follows.

Zone 2 Effects: Negligible

Four of the five Zone 2 sites assessed in Table 15 are residences known to have been occupied by Māori prior to 1900. Court records describe Māori living in both traditional whare and European-style houses during the 19th century, but it is unclear what type of houses these were. Aside from the main house there are likely to be a number of other features associated with these residences such as: pits for rubbish and food storage, raised storage structures, cooking shelters and earth ovens, small midden, and wells, among others. Individually these features are generally of a low archaeological value, though as part of a wider residential complex used by known individuals their values may be raised to a medium level. At the present time the locations for these residences cannot be specified beyond a link to a section within the MK7D2D Block. A number of structures, most likely houses, and the former Matau Marae complex are indicated on the 1904 Māori Land plan 1862 of this area (see Figure 10, above). While it is highly likely that many of these structures pre-date the 1900 upper date limit for defining an archaeological site under the HNZPTA, none of these structures can be definitively linked to the residences in Table 15. The whare nui of the former Matau Marae was situated more than 100 m from the project earthworks.

There are likely to be minor effects from earthworks for two structures illustrated on Sec. 57D, which might be linked to Kapa te Karaha. Within the construction footprint at Sec. 57D other archaeological materials associated with residential occupation, of the types listed above, may be uncovered. Effects on the remaining three residences are assessed as being negligible in the absence of more certain information about their location. However, the limited extent of the proposed earthworks within the associated historic sections, relative to the size of the sections themselves, suggests there is a reduced risk of encountering these sites. Furthermore, the distribution of structures in ML1862 indicates that, in 1904, most buildings were located some distance from both the existing and proposed alignment. It is assumed that this distribution has an historic precedent.

When environmental conditions are conducive to the survival of organic materials waka construction sites have proved to be rich with archaeologically significant material (e.g., Irwin, 2004). These conditions are not present in Sec. 60 and it is uncertain what materials may have survived here. Any material is likely to be of low archaeological value and the effects of disturbance similarly low, though there may be greater cultural value. The exact location of this site is unknown, though the extent of earthworks in this section suggest there is a high probability of encountering this site.

Zone 3 Effects: Negligible to Significant

At present only three sites can be located in Zone 3 with sufficient detail to provide a confident assessments of effects. The first, Nga Haere pā, is also a recorded archaeological site (S25/60). The main terrace of the pā is located more than 100 m beyond the extent of the proposed earthworks, which will not encroach anywhere within the former palisades of the pā. However, there may be more than negligible effects if as yet unknown related features external to the main pā are uncovered. The second site, the MK7D2D Sec. 15 urupā reserve, cannot be located with the same accuracy as Nga Haera pā. Court records place the urupā in the centre of the MK7D2D Sec. 16 and indicate there will be a less than negligible effect. Discussion with iwi and local earthwork contractors indicates that kōiwi are also located along the Tauheke dune ridge outside of the Sec. 15 urupā. However, earthworks within this dune are predominantly restricted to existing batter faces, therefore the risk of uncovering further kōiwi is considered to be low and any potential effects to be negligible. Like the Sec. 15 urupā, Huia's residence on the former MK7D2D Sec. 17, cannot be located to a high degree of accuracy. However, the proposed design requires earthworks over more than half of the former MK7D2D Sec. 17, meaning that there is a high risk of potentially significant effects on this site. The effects of construction will be mitigated by the careful excavation and thorough recording of any uncovered archaeological materials and further documentary research to identify the specific individual named Huia who lived at this location. The potential to recover archaeological materials that could be provenanced to a known ancestor of local iwi would be a beneficial effect of significant interest to archaeologists and iwi. This would substantially mitigate any adverse effects.

Of the four remaining sites the two with mixed Māori-European associations, St Michael's Catholic Church and Poroutawhao Mill, will be negligibly affected. Both candidate sites for the Poroutawhao Mill are located outside the extent of works and will be avoided. Although St Michael's Catholic Church was probably located within the project corridor, the most likely candidate site along Tauheke Ridge is on the existing SH1 alignment where the dune has been substantially cut away. Any traces of the church at this location are likely to have been destroyed.

The two settlements identified on the MK7D2D Sec. 16, Te Paiaka no te Waiariki pā and an unnamed kāinga, are rare and high value archaeological sites. Details of the exact extent of these settlements in Sec. 16 are unknown at present, but information provided by iwi, followed by a site visit and close analysis of LIDAR derived topographic plans, suggest one or both of these sites are located on the dune ridge. At least three terraces with associated pit or house features are located within the site designation boundary. There are also numerous depressions across the ridge that may indicate the presence of pits and burials, or the stump removal of small

trees. Burial pits cannot be definitively confirmed at this stage. However, as noted above, the extent of the proposed earthworks approaches an area that may fall within the bounds of the former Sec. 15 urupā. The evidence from Māori Land Court records, iwi and a site visit correlates with Adkin's (1948:246-7) description of archaeological features extending from the main terrace of Nga Haere pā eastward along Tauheke Ridge. Previous earthworks associated with past and existing SH1 alignments have damaged the site(s) and the new proposed works are predominantly located in this previously disturbed ground where any effects are expected to be less than negligible. However, minor effects may be had if features associated with these sites extend north of the dune ridge to within the footprint of the new SH1-Waitarere Beach Road intersection.

More detail is known about the extent of the settlement extending from the Waitarere Sec. 8 to the Ngawhakahiamoe Block, though there is little information about the specific locations of individual features within the settlement. The extensive earthworks in this area, particularly in the former Waitarere Sec. 8, have a high risk of causing damage or destruction to multiple house sites of a medium archaeological value. Alternatively, if house sites are not encountered, there may be substantial damage of a low effect to the extensive horticultural features associated with these residences. At present the locations of two buildings have been identified at this site from an historic survey plan, ML1243 (Figure 14). One of these buildings is outside the designated extent while the other is cut by the designation boundary, but sufficiently removed from the extent of earthworks so that it is unlikely to be affected. The extent of the fenced plots associated with these buildings indicate that archaeological cultivation grounds are likely to be affected. There is no information to suggest that the locations of the buildings in this plan are indicative of the location of the other buildings that are known to have been present on this historic section. It is unclear if the earthworks will cause substantial damage to the other high value features of this site, therefore the effects here are rated as being moderate to reflect the uncertainty. Archaeological investigations in this area will be complicated by the continuous settlement of this area from the 19th century through to the early 20th. There also appears to be an as yet unidentified pre-19th century settlement, or other intensive occupation, in this area, but there is insufficient information to evaluate any possible effects on this site.

While there are no known archaeological sites at the northern extent of the project, the proximity of the new Poroutawhao School turning lane to an historic water source, the former Waihoroo-Whiripo pool, suggests there is a high likelihood that archaeological materials are present in this area. However, limited earthworks that require only minor modifications to existing batters at two dunes mean there is a low risk of archaeological materials being uncovered. Any effects are expected to be negligible.

Zone 1 and Cultivation Grounds: Negligible to Low

No specific sites have been identified as being at risk in Zone 1. However, Māori Land Court records describe a number of activities taking place in this area, particularly in the vicinity of the Kouranui Stream, that are likely to have left behind material traces. These are likely to be sites of low archaeological value, such as midden, small fires and earth ovens. An exception to this would be the recovery of archaeologically rare waterlogged wooden artefacts from the margins of the Kouranui where environmental conditions have been conducive to the preservation of

organic materials. Any effects as a result of damage or destruction to these sites, or the recovery of waterlogged artefacts will be low.

Cultivation grounds are recorded throughout the project area in the minutes of the Māori Land Court, with specific mention given to taro being grown along the banks of the Waitarere Stream (Otaki MB24: 103). While cultivation grounds are likely to have been the most common site type during the historic period, in both number and extent, they are underrepresented in records of archaeological sites. For this reason, despite their general ubiquity during the historic period, they are sites of high archaeological value at the present time. In recent years there have been several large-scale excavations of Māori cultivation ground in the Taranaki and Waikato regions and a number of strategies for the investigation and documentation of these sites have been developed (Bader, 2011, 2014; Gumbley and Hoffmann, 2011, 2013).

While the cultivation grounds that are likely to be damaged or destroyed in this area have high archaeological values, the earthworks for this project are assessed as having only a low effect. Court records for this area and other parts of the Horowhenua indicate the presence of numerous and extensive cultivation grounds. Any damage from earthworks will only be to a very small portion of the total area cultivated during the historic period within the project area (see Figure 5). Furthermore, this project provides an opportunity to investigate a little-documented high value site type that will have beneficial effects for future research in other parts of the Horowhenua.

Summary of Assessment of Effects

Research has identified a number of archaeological risks associated with this project. Of these risks, thirteen known or possible archaeological sites of a generally high to medium archaeological value are within, or in a general proximity of, the project area (Table 15). Although the archaeological values for these sites are generally towards the middle or upper end of the scale, the overall impact of the project is likely to be of a low to negligible effect. Rare sites of high archaeological or cultural value have been largely avoided. Of the high value sites where the location or extent is less well known, the effects are generally expected to be at the lower end of the scale, though further documentary, and potentially geophysical, research will be undertaken to confirm this prior to earthworks commencing.

Figure 16 uses modified land parcel data to classify affected areas based on the archaeological values of their known sites and the probability that these sites will be damaged or destroyed. The highest value and risk areas are clustered in the northern half of the project area. The most affected sites are expected to be Māori garden systems that are of lower archaeological value relative to other potentially affected site types. The project will have the beneficial effect of facilitating research into a small portion of the extensive garden systems known to have been located in the wider Horowhenua.

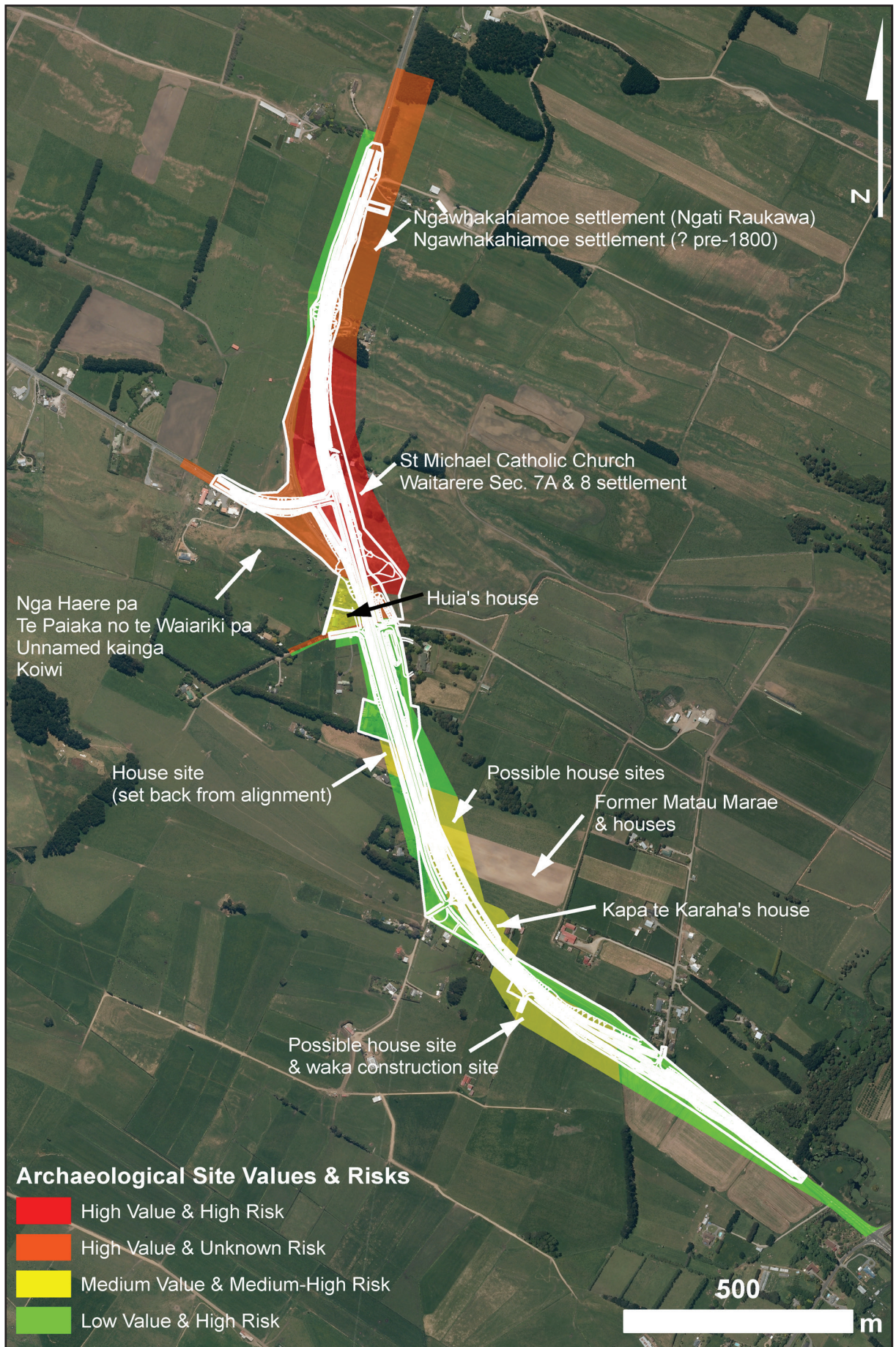


Figure 16: Archaeological values and risk of disturbance for identified sites within affected land parcels. Poroutawhao School turning lane not shown on plan, this is a Low Value & High Risk area.

Site Management and Mitigation

Methods to avoid, minimise or mitigate adverse effects on the sites noted above are discussed here. An authority from Heritage New Zealand to modify, damage or destroy archaeological sites will be required prior to the onset of construction or any enabling works. Any authority is expected to require further research to be undertaken and is likely to impose a number of specific conditions relating to the manner in which site works are undertaken and archaeological materials are handled. This is the primary basis for the management of unavoidable effects. However, it is recommended that:

- Earthworks undertaken in medium or high value areas identified on Figure 16 are undertaken with an archaeologist present unless the area has been surveyed by an archaeologist in advance.
- Sites of known archaeological value outside the earthworks areas are protected from accidental damage during earthworks and vehicle movements, through education of contractors, taping, signage, or fencing.
- A formal briefing is provided by an archaeologist to all contractors involved in earthwork activities before commencement of works. The briefing will cover information on known archaeological sites, what to look out for when undertaking earthworks, how to protect the site until authorities and iwi can investigate, and how any archaeological management plan required by an archaeological authority from Heritage NZ will operate.
- A robust archaeological management response is provided in the event that an archaeological site, wāhi tapu or koiwi is discovered or disturbed. The management response shall include as a minimum:
 - that works in the location of any discovery immediately cease;
 - that Heritage New Zealand, local iwi, the consultant archaeologist, and if koiwi are discovered the New Zealand Police, are immediately informed;
 - work at the site be suspended for a reasonable time to enable iwi to carry out procedures for the removal of taonga and any archaeological investigations; and
 - that Heritage NZ and the Horowhenua District Council will advise the Permit Holder when work can resume.

Upon the conclusion of the archaeological investigation further research will be required as part of the interpretation and presentation of any archaeological materials recovered.

CONCLUSIONS

Although the realignment of SH1 at the Waitarere Curve, north of Levin, will require earthworks in the vicinity of a recorded archaeological site, this site is not expected to be affected. Māori Land Court records and other sources indicate there is a high probability of encountering unrecorded archaeological sites in the project area and these sites are most likely to be related to the 19th Century occupation of this land by hapū of Ngāti Raukawa, the descendants of which are represented today by the two marae, Huia and Matau. There is also a high risk of encountering archaeological sites related to the earlier Muaūpoko occupation. However, based on the known information the current design appears to avoid, or minimise, effects on the main archaeological risk areas.

The risk of encountering unrecorded archaeological sites is greatest from north of Paeroa Road to the northern extent of works on both SH1 and Waitarere Beach Road. In addition to an identified pā site, court records indicate multiple houses and horticultural plots in this area, and two settlements located on MK7D2D Sec. 16 that are yet to be located. South of Paeroa Road the archaeological risks are lower and are most likely to be related to horticultural features, though there is some risk of encountering residential features between Paeroa and Clay roads.

The effects of construction will require an archaeological authority to be obtained from Heritage New Zealand. A research strategy and management plan will be required as part of those authorities. Further research into the possible archaeological risks is proposed prior to obtaining an authority. In particular, a geophysical survey of high and medium risk zones will help to clarify the location and extent of unrecorded archaeological features. A range of practical mitigation measures will be employed to limit effects on archaeological materials. The project provides an opportunity to involve tangata whenua in both the recording and recovery of their history in this area.

Overall, based on the research undertaken, including site visits and discussion with iwi (but no provision of a cultural impact assessment), and the proposed mitigation I consider that the project's effects on archaeology are appropriately avoided, remedied or mitigated.

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Minutes of the Native/Maori Land Court

HOANI MEIHANA v HENARE HEREKAU - Manawatu Kukutauaki (1872) Otaki MB 1A
MIHIPEKA TATANA v HOHAIA TE PAHAU - Manawatu Kukutauaki No.7D Sec.2
(Poroutawhao) (1894) Otaki MB 22

NIKORIMA TE HAUNGA v MIHAKA KAREPA - Waitarere (1891) Otaki MB 17

JUDGEMENT and ORDERS - Manawatu Kukutauaki No.7D Sec. No.2D (1895) Otaki MB 27
PARTITION - Waitarere (1892) Otaki MB 19

PARTITION - Ngawhakahiamoe (1892) Otaki MB 20

TAMIHANA TE HOIA v HAPI RANGITEWHATA - Manawatu Kukutauaki No.7D (1880)
Otaki MB 4

VALIDATION - Manawatu Kukutauaki 7D2D (1910) Otaki MB 51

WI TAMIHANA v HOHAIA TE PAHAU - Manawatu Kukutauaki No.7D Sub. 2D Sub Section
5 (1894) Otaki MB 24

Image Credits

Cover: Adkin, George Leslie (1931). Swamp area by water - terrain covered in dense bush.
Reg.# A.006861, Te Papa, Wellington, New Zealand, <http://collections.tepapa.govt.nz/Object/127336>.

APPENDIX 1:

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORMS

Please note that site record numbers that have been referenced in text will in some instances differ from the site record numbers present on the official site record forms appended below. The New Zealand Archaeological Association Site Recording Scheme uses a compound site referencing system that merges an official New Zealand Government map sheet reference and a numerical identifier to create a unique site reference (eg. S25/19 = NZMS260 map series, map S25, site 19). Changes to the official map sheet reference scheme in the 1970s required corresponding changes to the form of archaeological site references, resulting in some older sites receiving new identifiers in keeping with the new map reference scheme. However, in these updated instances the original site record numbers remain on the official site record sheet. Where this is the case for records below a heading has been placed at the top of the page giving the new, updated site number that was referenced in text.

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM (NZMS1) NZMS 1 map number N152 NZMS 1 map name LEVIN NZMS 1 map edition 4th (1973)		NZAA NZMS 1 SITE NUMBER N152/47 DATE VISITED 2 October 1980 SITE TYPE Whakamate (eel ditches) SITE NAME: MAORI OTHER															
Grid Reference		Easting	27660.0	Northing	21150.0												
1. Aids to relocation of site (attach a sketch map) North end of Tangimata lagoon, 2 km west of Heven - Foxton highway, 1.5 km north of Waitare Beach turnoff.																	
2. State of site and possible future damage In grass. Threatened by proposed drainage scheme.																	
3. Description of site (Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here) Artificial channels (and ? dam) joining Tangimata Lagoon with two areas of swamp. See attached plan and text from ^{G.L.} Adkins's <u>Horowhenua</u> (pp 30, Figs 4, map VIII).																	
4. Owner		Mr. Gary Mchennan		Tenant/Manager													
Address		"Kaikai" Foxton Road, Levin		Address													
5. Nature of information (hearsay, brief or extended visit, etc.) Brief field inspection.																	
Photographs (reference numbers, and where they are held) —																	
Aerial photographs (reference numbers, and clarity of site) —																	
6. Reported by		B. C. McFadyen,		Filekeeper													
Address		of NZHPT, Box 12255, Wellington.		Date													
7. Key words Ditches, eels.																	
8. New Zealand Register of Archaeological Sites (for office use) NZHPT Site Field Code																	
<table border="1"> <tr><td>B</td><td>O</td></tr> <tr><td>A</td><td>O</td></tr> <tr><td>A</td><td>C</td></tr> </table> Type of site Local environment today Land classification		B	O	A	O	A	C	<table border="1"> <tr><td>B</td><td>C</td></tr> <tr><td>A</td><td>A</td></tr> <tr><td>C</td><td>T</td></tr> </table> Present condition and future danger of destruction Security code Local body				B	C	A	A	C	T
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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM (NZMS1)		NZAA NZMS 1 SITE NUMBER <u>152/36 45</u> DATE <u>11/11/11</u> LATEST INFORMATION: 1948 SITE TYPE SWAMP PA SITE NAME: MANGAROA OTHER "MANGAROA"													
NZMS 1 map number N152 NZMS 1 map name LEVIN NZMS 1 map edition 4th 1973															
Grid Reference Easting <u>2 7 7 8 0 0</u>		Northing <u>2 0 6 0 0 0</u>													
1. Aids to relocation of site (<i>attach a sketch map</i>) At the northern end of Lake Horowhenua. Locality plan with Pipiriki gunfighter pa (N152/54).															
2. State of site and possible future damage Site was dug by Rolston in the 1940s; presumably much disturbed.															
3. Description of site (<i>Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here</i>) Site was on the edge of the lake and at the margin of Kaihuka swamp (now largely drained). Exact location in Adkin 1948:222 (fig 131) and Rolston 1944: 164. Copies of these attached. Adkin (1948) describes artefacts recovered pages 221-230. Site subsequently dug by Rolston and artefacts found described in three papers in Journal Polynesian Society. References: Adkin, G.L. (1948) <u>Horowhenua</u> Rolston, R. (1944) "Excavations at pa-site Lake Horowhenua", <u>JPS 53:163-174</u> <p style="text-align: right;">continued on SDF</p>															
4. Owner Address HOROWHENUA LAKE TRUSTEES Box 352 LEVIN		Tenant/Manager Address													
5. Nature of information (<i>hearsay, brief or extended visit, etc.</i>) Published information. Photographs (<i>reference numbers, and where they are held</i>) Aerial photographs (<i>reference numbers, and clarity of site</i>)															
		226/10 (1942) Old shoreline is identifiable as is site by contrast in vegetation. 3420/5 (1965)													
6. Reported by Address A. Walten		Filekeeper Date													
7. Key words															
8. New Zealand Register of Archaeological Sites (<i>for office use</i>) NZHPT Site Field Code															
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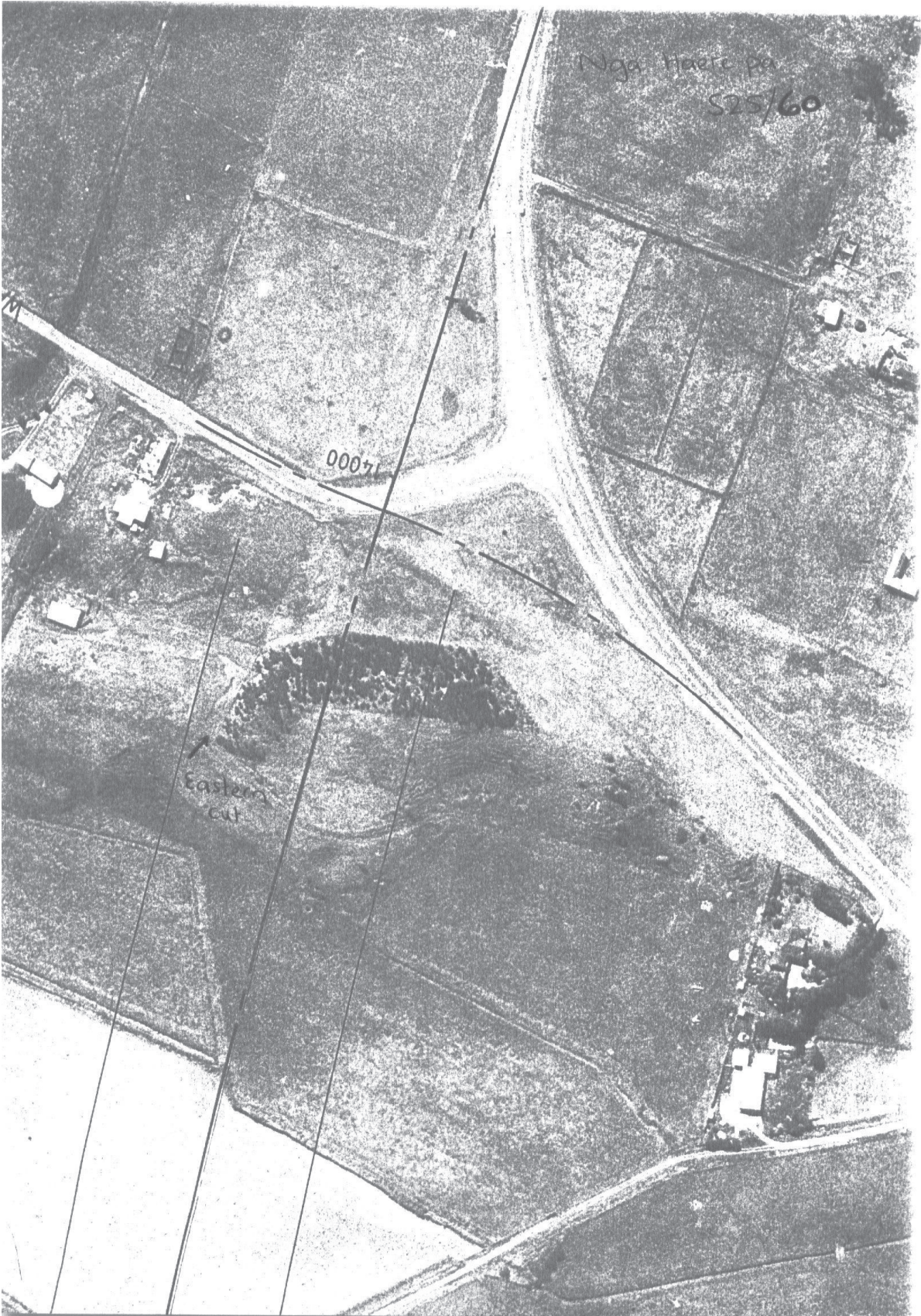


NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE DESCRIPTION FORM		SITE NUMBER
Map Number	N152	SITE NAME: <i>MANGAROA</i> "MANGAROA"
Map Name	LEVIN	
Map Edition	4th 1973	SITE TYPE SWAMP PA
Grid Reference	778060	
<p><i>(This form may be used for recording any descriptive information or other supplementary information on the site, or for maps and drawings.)</i></p> <p>References (continued)</p> <p>Rolston, R. (1947) "Further excavations at pa-site, Lake Horowhenua", <u>JPS</u> 56:256-265.</p> <p>_____ (1948) "Results of further excavations at pa-site, Lake Horowhenua", <u>JPS</u> 57:279-300.</p>		

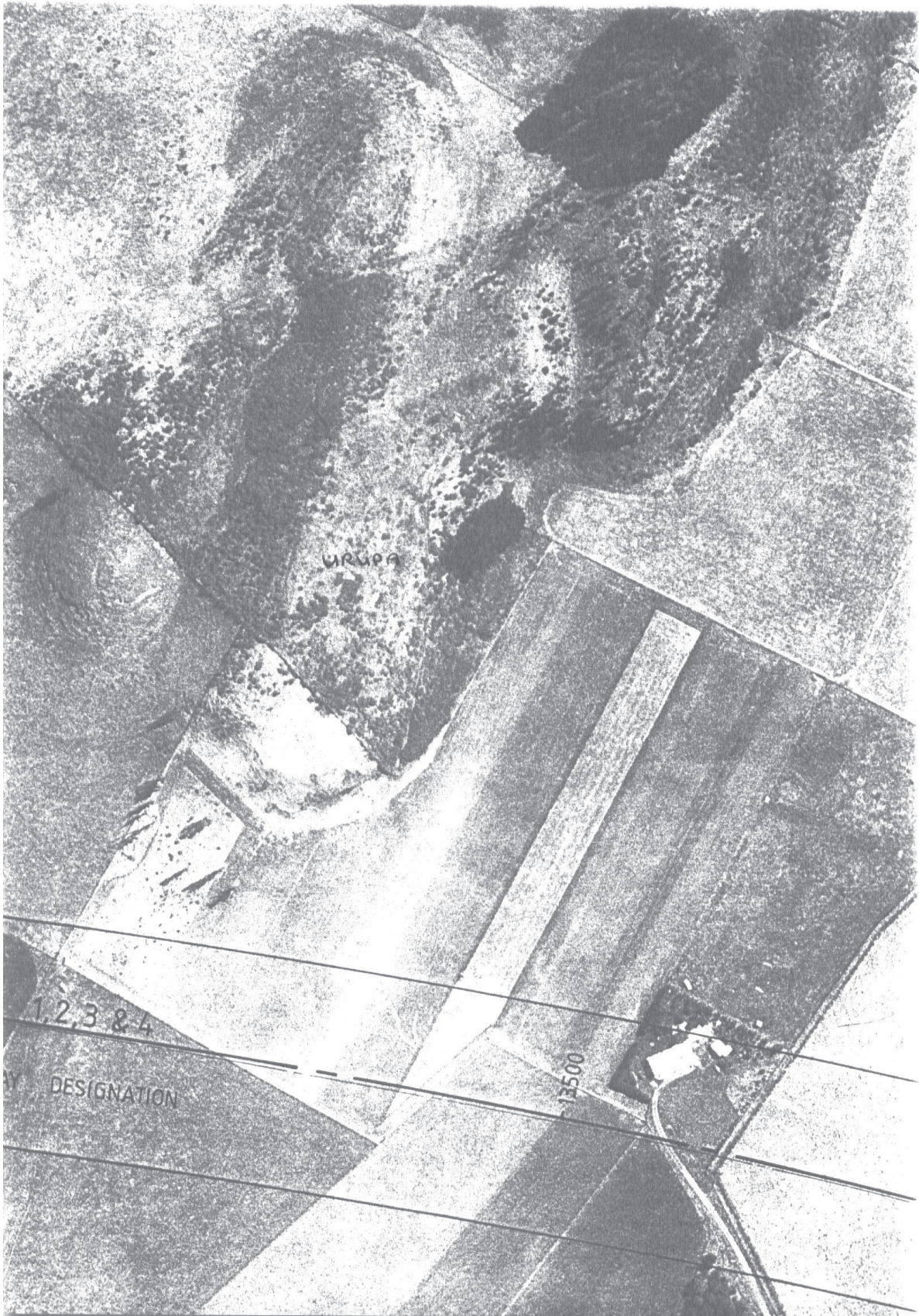
NZAA SITE RECORD FORM NZMS260 map number S25 NZMS260 map name Levin NZMS260 map edition 1984		NZAA METRIC SITE NUMBER S25/75 DATE VISITED May 1995 ⁴³ SITE TYPE occupation site - pa SITE NAME: MAORI Mangaroa OTHER	
Grid Reference Easting 270470		Northing 606495	
1. Aids to relocation of site (attach a sketch map) On the lakeshore north-eastern shore of the lake - mostly in the swampy edges.			
2. State of site and possible future damage Though the lake level has receded the site is mostly still in the swampy margins of the lake.			
3. Description of site (Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here) The site has been excavated by Rolston (between 1942-47) and so is fairly well documented. It is likely that the site is one of the oldest sites around the lake shore as NLC Minute Book accounts all state it was not occupied by Muaupoko hapu and had been abandoned before the development of Muaupoko pa. Rolston's excavation showed that the pa might have been connected to the shore by a causeway. It had double palisades and what appears to be a large amount of fill (shell, stones, ash, sand) as a raised foundation. Rolston also found artefacts - described in detail JPS Vols 53, 56, 57. Adkin pg 221-230 Forbes 47-48.			
4. Owner	Address	Tenant/Manager Address	
Lake Trustees			
5. Nature of information (hearsay, Site visit brief or extended visit, etc.) Photographs (reference numbers And where they are held) Aerial photographs (reference Numbers and clarity of site)			
6. Reported by Susan Forbes Address Paekakariki Hill Rd RD 1, PORIRUA		Filekeeper Ian Keyes Date 25 Jan. 1999	
7. Department of Conservation (for office use) <input type="checkbox"/> Type of site <input type="checkbox"/> Local environment today <input type="checkbox"/> Land classification			
<input type="checkbox"/> Present condition & future danger of destruction <input type="checkbox"/> Local body			

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION		NZAA METRIC SITE NUMBER S25/ 60	
SITE RECORD FORM (METRIC)		DATE VISITED —	
Metric map number	S25	SITE TYPE	Gunfighter pa
Metric map name	LEVIN	SITE NAME: MAORI	Nga Haere pa
Metric map edition	1st 1984	OTHER	
Grid Reference		Easting	2 6 0 1 6
		Northing	6 0 6 8 4
1. Aids to relocation of site (<i>attach a sketch map</i>)			
On prominent dune-ridge, on south side of junction of Waitarere Road and Highway. See attached photocopy of a recent large scale aerial photo.			
2. State of site and possible future damage			
Over 50 years ago Adkin found 'little to attract attention', but 'sufficient traces' to fix the site. Proposed Levin bypass threatens site.			
3. Description of site (<i>Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here</i>)			
A Ngati Huia pa, constructed in 1872, to guard against sallies from Kemp's Pipiriki pa (N152/54). From Adkin's description it is clear that the platform (80 yards long and 20 yards wide) is not on the highest part of the ridge (now largely covered in pines), but west of that. The aerial photo shows what is presumably Adkin's "eastern cut", with the requisite traces of a road running through it.			
It is not clear what now survives.			
4. Owner Address		Tenant/Manager Address	
5. Nature of information (<i>hearsay, brief or extended visit, etc.</i>)		Published references.	
Photographs (<i>reference numbers, and where they are held</i>)			
Aerial photographs (<i>reference numbers, and clarity of site</i>)			
6. Reported by Address		Filekeeper Date	
A. Walton DoC 5 September 1990		 9/9/90	
7. New Zealand Historic Places Trust (<i>for office use</i>)			
<input type="checkbox"/> D	<input type="checkbox"/> C	Type of site	
<input type="checkbox"/> C	<input type="checkbox"/> T	Local environment today	
<input type="checkbox"/> -	<input type="checkbox"/> -	Land classification	
<input type="checkbox"/> -	<input type="checkbox"/> -	Present condition and future danger of destruction	
<input type="checkbox"/> P	<input type="checkbox"/> G	Local body	





NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM (METRIC)		NZAA METRIC SITE NUMBER S25/ 6/ DATE VISITED - SITE TYPE Pa/urupa SITE NAME: MAORI Puketawhiwi pa OTHER Paeroa															
Metric map number S25 Metric map name LEVIN Metric map edition 1st 1984	Grid Reference Easting 2 6 0 1 5 Northing 6 0 6 7 9																
1. Aids to relocation of site (<i>attach a sketch map</i>) On prominent hill, named Paeroa, on the inner margin of the dune belt. See attached photocopy of a large scale air photo.																	
2. State of site and possible future damage Adkin, over 50 years ago, found 'whare-site depressions' on summit. Much of hilltop is now urupa.																	
3. Description of site (<i>Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here</i>) Adkin suggest Paeroa was the site of Puketawhiwi pa before it moved down onto the flats at the foot of the hill. Pa possibly associated with Te Rangihaeata after he had abandoned Purutaua pa. Paeroa subsequently (1850s on) became an urupa of the Ngati Huia and Ngati Matau hapu of Ngati Raukawa. See Adkin 1948:278-9, 320-1.																	
4. Owner Address	Most of hilltop is urupa	Tenant/Manager Address															
5. Nature of information (<i>hearsay, brief or extended visit, etc.</i>) Photographs (<i>reference numbers, and where they are held</i>) Aerial photographs (<i>reference numbers, and clarity of site</i>)		Published references.															
6. Reported by Address	A. Walton DoC 5 September 1990	Filekeeper Date	<i>SWK</i> 9/9/90														
7. New Zealand Historic Places Trust (<i>for office use</i>)																	
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NZAA SITE RECORD FORM NZMS260 map number S25 NZMS260 map name Levin NZMS260 map edition 1984		NZAA METRIC SITE NUMBER S25/64 DATE VISITED May 1995 SITE TYPE pits SITE NAME: MAORI Mairua OTHER		
<i>Grid Reference</i> Easting 270090 Northing 606670				
1. Aids to relocation of site (attach a sketch map) At the end of Lindsay Rd at the northern end of Lake Waipunahau is a turnoff to the gun club. Mairua is located on the dunes in this area.				
2. State of site and possible future damage The site has been grazed - potential ongoing damage from stock.				
3. Description of site (Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here) Mairua was said to be a large cultivation and occupation area (100 acres according to Adkin's sources). He states that initially kumara was grown there and later maize, potatoes and wheat. The kainga was said to be at the NE end of the cultivations. Prior to the lake being lowered this area was between the swamps of Kaihuka and Kopuapangopango. During the 1995 survey 3 small pits (ca. 1x1.2m) were found on a dune in this area. Refer pg. 43 Forbes report 1996.				
4. Owner	Address	Tenant/Manager		
Unknown		Address		
5. Nature of information (hearsay, Site visit brief or extended visit, etc.) Photographs (reference numbers and where they are held) Aerial photographs (reference numbers and clarity of site)				
6. Reported by Susan Forbes Address Paekakariki Hill Rd RD 1, PORIRUA		Filekeeper Ian Keyes <i>IK</i> Date 13 Oct. 1998		
7. Department of Conservation (for office use) <input type="checkbox"/> Type of site <input type="checkbox"/> Local environment today <input type="checkbox"/> Land classification				<input type="checkbox"/> Present condition & future danger of destruction PG <input type="checkbox"/> Local body



NZAA SITE RECORD FORM NZMS260 map number S25 NZMS260 map name Levin NZMS260 map edition 1984		NZAA METRIC SITE NUMBER S25/65 DATE VISITED May 1995 SITE TYPE a track SITE NAME: MAORI Whitiki OTHER	
<i>Grid Reference</i> Easting 270085 Northing 606620			
1. Aids to relocation of site (<i>attach a sketch map</i>) On the low dunes at the NE end of Lake Waipunahau and the Kaihuka swamp.			
2. State of site and possible future damage The site has been grazed - potential ongoing damage from stock.			
3. Description of site (<i>Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here</i>) This is an area now named for an area of bush but was likely to have been the original name for a clearing within the forest. Close by parts of the track a midden was also found (S25/66). The track is known as part of an old access way around the lake - known as Raumatangi. Some of the tracks around the lake were once built plank causeways. Refer pg. 5 ⁷ Forbes report 1996.			
4. Owner Unknown		Address Tenant/Manager Address	
5. Nature of information (<i>hearsay, Site visit brief or extended visit, etc.</i>) Photographs (<i>reference numbers and where they are held</i>) Aerial photographs (<i>reference numbers and clarity of site</i>)			
6. Reported by Susan Forbes Address Paekakariki Hill Rd RD 1, PORIRUA		Filekeeper Ian Keyes <i>IK</i> Date 13 Oct. 1998	
7. Department of Conservation (<i>for office use</i>) <input type="checkbox"/> Type of site <input type="checkbox"/> Local environment today <input type="checkbox"/> Land classification			
<input type="checkbox"/> Present condition & future danger of destruction <input type="checkbox"/> Local body			



NZAA SITE RECORD FORM NZMS260 map number S25 NZMS260 map name Levin NZMS260 map edition 1984		NZAA METRIC SITE NUMBER S25/66 DATE VISITED May 1995 SITE TYPE occupation site - midden SITE NAME: MAORI Whitiki OTHER	
Grid Reference Easting 270090		Northing 606620	
1. Aids to relocation of site (attach a sketch map) On the low dunes at the NE end of Lake Waipunahau and the Kaihuka swamp.			
2. State of site and possible future damage The site has been grazed - potential ongoing damage from stock.			
3. Description of site (Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here) This is an area now named for an area of bush but was likely to have been the original name for a clearing within the forest. The midden was a 10cm deep exposed layer of very finely compacted shell (species unidentified) with charcoal fragments (ca. 80cm in diameter). Refer pg. 62 Forbes report 1996.			
4. Owner Unknown		Address	Tenant/Manager Address
5. Nature of information (hearsay, Site visit brief or extended visit, etc.) Photographs (reference numbers and where they are held) Aerial photographs (reference numbers and clarity of site)			
6. Reported by Susan Forbes Address Paekakariki Hill Rd RD 1, PORIRUA		Filekeeper Ian Keyes Date 13 Oct. 1998 <i>ISK</i>	
7. Department of Conservation (for office use) <input type="checkbox"/> Type of site <input type="checkbox"/> Local environment today <input type="checkbox"/> Land classification			
<input type="checkbox"/> Present condition & future danger of destruction <input type="checkbox"/> Local body			



APPENDIX 2:

ARCHAEOLOGICAL VALUES ASSESSMENT CRITERIA

The following describes the criteria used to assess the archaeological values presented in this report. This assessment follows guidelines set down by Heritage New Zealand, formerly the New Zealand Historic Places Trust (NZHPT), which have been specifically formulated for the evaluation of values relating to archaeological sites.

Assessment Criteria

“Archaeological values relate to the potential of a place to provide evidence of the history of New Zealand. This potential is framed within the existing body of archaeological knowledge, and current research questions and hypotheses about New Zealand’s past. An understanding of the overall archaeological resource is therefore required.” NZHPT 2006

Following Gumbley (1995) and Walton (2002), archaeological values can be divided into two contextual categories. The first looks at the intra-site context and evaluates a site as a distinct and discrete entity.

- Condition:

How complete is the site? Have parts of the site been damaged or destroyed? A complete and undamaged site has a high value, a partially destroyed or damaged site has a moderate value and a site which has suffered significant damage or destruction will have a low value.

- Rarity/Uniqueness:

Rarity is classified into local, regional and national contexts. Sites that are rare at a local level only are afforded a low significance, those that are rare at a regional level are given a moderate value, and sites that are rare nationwide are held to have a high significance. Sites that are not rare at any of these spatial levels have no significance in this category.

- Information Potential:

Does the site have the potential to contribute to the expansion of human knowledge about our past? For sites where the expected feature set is predicted to support questions of a purely local interest the information potential is low. Where the archaeology may contribute to the resolution of questions of a national interest level the potential is considered to be moderate. The highest level of information potential is reserved for those sites that may be able to contribute information to research themes that are of a global interest.

The second set of archaeological values relate to the inter-site contexts that evaluate individually distinct and discrete sites as subsets of a great whole.

- Archaeological Landscape/Contextual Value:

What is the context of the site within the surrounding archaeological landscape? Does the site derive all or part of its meaning from, or impart meaning to, other sites within the wider landscape? If a site is one of many amongst other sites of a similar nature the contextual value is low. Where a site imparts additional meaning to, or derives additional meaning from, one or more other sites by virtual or landscape, structural, historic, cultural or other relationships the contextual value of those sites is collectively

high.

- Amenity Value:

Amenity value is a synthesis of the above criteria framed as a measure of a sites potential to reach beyond a purely scientific audience and communicate its multiplicity of values to a wider public audience. This measure particularly favours dominant sites that define the context of the wider landscape, and those with visible surface features in a good condition of preservation, with high values. Sites that derive their value through their relationship to more dominant sites, and those with little or no visible surface features, will have a low amenity value.

- Cultural Association:

How are the past and the present connected through the relationship of the historic site to the people of the present, be they tangata whenua, other descendant groups or the general public? The highest values are afforded to sites that are the nexus of a direct relationship between important historic events and the social memory of the descendants who played out those events. Moderate values more generally apply to sites where one part of this relationship, important historic events or social memory, is retained. Where neither aspect of to this relationship are found a low value is applied.

Other values can also include ((NZHPT), 2004):

1. Architectural
2. Historic
3. Scientific
4. Technological
5. Aesthetic/Visual impact
6. Cultural

The last of these relates to any potential impact on Māori cultural values. This report makes no attempt assess Māori cultural values, but notes that such values are likely to be affected when sites with tangata whenua associations are impacted.

APPENDIX 3:

OUTLINE OF PROPOSED ARCHAEOLOGICAL RESEARCH PLAN AND MANAGEMENT STRATEGY

The application to Heritage NZ for an authority to modify, damage or destroy archaeological sites is expected to require further research into the specific details of the location, extent and nature of the potential archaeological sites identified above. Given the number of sites that may potentially be affected by this project, the development of a research plan and archaeological management strategy is likely to be a prerequisite for the granting of any archaeological authority. The following broadly outlines the further research and excavation strategy that is proposed as part of an application and exercise of an archaeological authority.

A five staged approach to mitigation is recommended. The first two stages entail acquiring further information about the location and extent of archaeological materials and planning for archaeological excavations both before and during construction.

1) Geophysical Investigation

A geophysical survey is the first stage in the management of risk. This applies not only to minimising the risk of damage to archaeological sites, but also the risk of unexpected delays during construction. Archaeological geomagnetic investigation is recommended for those areas where the full width of the proposed alignment lies outside the existing SH1 road reserve (Figure 17). Five areas are recommended for survey. These areas are focused on acquiring more information about the possible location and extent of the nine sites of medium or high archaeological value in Table 11 that may be affected by the project: Nga Haere pā, MK7D2D Sec. 15 urupā reserve, Huia's residence (MK7D2D Sec. 17), Te Paiaka no te Waiaraiki and unnamed kāinga (MK7D2D Sec. 16), Waitarere Sec. 7A, 8 and Ngawhakahiamoe settlement, and the four individual residences in Zone 2.

Five additional areas are recommended for targeting sites of lower archaeological value. Specifically, the waka construction site and cultivation grounds in Zone 2. Extending the geophysical survey to include the identification of possible cultivation grounds would enable a sampling strategy to be devised for their excavation and recording. This would also help to gauge the risk of uncovering previously unknown sites relating to the earlier Muaūpoko occupation.

In combination with the historic records that have already been reviewed, a geophysical survey will provide a guide to the likely archaeological subsurface features that will be encountered. The survey will not be able to separate the pre and post-1900 archaeological materials, but will provide a guide as to the extent and complexity of all subsurface materials.

There are benefits to expanding the survey area beyond the high risk, highly recommended areas, in terms of both the confirmed presence and absence of archaeological sites. Confirming the presence of sites outside known high risk areas will enable these areas to be investigated during the pre-construction phase (see below), thus reducing the risk of delays during construction. Alternatively, confirmation of the absence of site would reduce the area requiring archaeological monitoring during the construction phase.

2) Application for Archaeological Authority

A better understanding of the location, extent and complexity of the potential archaeological sites and areas of highest risk will be developed following the completion of the geophysical survey. From this a management plan can be prepared and the appropriate archaeological authority/authorities applied for.



Figure 17: Suggested areas for geophysical investigation as part of an application for an archaeological authority under the Heritage New Zealand Pouhere Taonga Act.

The management plan will need to be integrated with the construction programme and will also assist with the development of that document. Given the likely extent and complexity of the archaeological materials, a research strategy will need to be provided with any authority application and management plan. An archaeological authority will need to be acquired from Heritage New Zealand prior to the commencement of any work that may result in the damage or disturbance of archaeological materials. This not only includes all earthworks, but any preparatory work (including the clearing and removal of vegetation) that may result in disturbance to the ground surface. Additionally, protocols for the recovery and storage of archaeological materials will need to be developed in conjunction with tangata whenua.

The physical archaeological investigations will be undertaken in two phases.

3) Archaeological Investigation in Advance of Construction

The first stage of the physical investigation will target key areas identified in the geophysical survey as having the most extensive and complex archaeological materials. This will most likely focus on the three sites with non-negligible effects in Zone 3 and any sites in Zone 2 identified by geophysical survey (Table 13). Investigation and documentation of these features in advance of the main earthworks will avoid potentially costly time delays during construction.

There will be opportunities for tangata whenua to be involved in the excavation and to receive informal training in archaeological practices. This would be of use for individuals who are likely to have a role as monitors during the construction phase, particularly those who are not familiar with the recognition of archaeological features. The results of this phase of investigation will be presented to tangata whenua.

Opportunities may be sought to provide information to the public through press releases, public talks and open days.

4) Archaeological Investigation in Conjunction With Construction

The second stage of the physical investigation implements archaeological monitoring of construction earthworks in areas where known archaeological materials are thought to be of a complexity and extent that will not substantially impact the construction timeframes. Prior to the commencement of earthworks, archaeological sites outside the construction alignment, but within the land access corridors, should be fenced or otherwise appropriately demarcated and contractors informed to avoid damage by heavy machinery.

Supervision of earthworks will be required in Zone 2 where the entire width of the new alignment lies outside the existing road reserve (i.e., the former MK7D2D Sec. 20, 21, 23, 30, 56 and 57), and portions of Zone 1 abutting the Kouranui

swamp. For all other areas where the archaeological risk is believed to be low or non-existent, on-call procedures will be implemented when archaeological materials are inadvertently uncovered outside supervision. This will require training of contractors and tangata whenua monitors in the general recognition of archaeological materials and appropriate procedures for their protection until such time as the authority archaeologist is able to undertake the necessary investigation. Allowance will need to be made in the construction schedule for the possibility of delays due to a need for extended investigation. The likely scope for any allowance will be informed by the geophysical survey.

Upon the conclusion of the archaeological investigation further research will be required as part of the interpretation and presentation of an archaeological materials recovered.

5) Post Construction Analysis

Many of the archaeological materials recovered are likely to relate to occupation by Māori who have descendants currently living on the land or in the general area. Therefore, consultation and discussion with tangata whenua will need to be maintained throughout the period post-construct analysis and interpretation of archaeological materials. There may be opportunities for information panels to be erected at some sites combining historic records, oral traditions and archaeological interpretations.

Once a final report has been prepared and accepted by Heritage New Zealand the content of this report will be presented to tangata whenua and the wider public. This may include oral presentations or information posters at local marae and the Te Takere Culture and Community Centre.

Artefacts may need to be registered with the Ministry of Culture and Heritage under the provisions of the Protected Objects Act 1975. Tangata whenua will need to be consulted about the appropriate return or disposal of archaeological materials following the conclusion of the archaeological analysis.