Prepared for Waikanae North Developments Ltd

Waikanae North Development:

Archaeological Assessment of Effects

18 March 2026

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Executive Summary

This archaeological assessment of effects report has been prepared for Waikanae North Developments Limited to support their fast-track consent application under the *Fast-track Approvals Act* 2023 and general archaeological authority application under the *Heritage New Zealand Pouhere Taonga Act* 2014 for the subdivision development at 169 Peka Peka Road, Waikanae.

The proposed development provides approximately 1,200 private residential dwellings across the site. This is primarily comprised of standard residential lots, with a smaller component of medium-density housing, terrace housing, apartment units, and some commercial areas.

This archaeology assessment report outlines the history of the proposed development area and assesses the effects on both known and unknown archaeological sites.

The key findings of the report are:

- Approximately one third of the development area are part of a steep sand dune band running parallel to the costs through the project area which were likely formed during the Taupō era. The sand dunes on the Kāpiti Coast are strongly correlated with a high density of pre-European archaeological sites.
- The predominant site type on the coastal dunes is middens. These are deposits of shell, occasionally with oven evidence or some bone, marking either a temporary resting place of groups of people, or occasionally locations of more permanent settlements.
- There are 21 recorded archaeological sites within the proposed development area, and the majority of these will be impacted by the proposed cut and fill earthworks. There is also a high likelihood that there are unrecorded archaeological sites below the ground surface within the sand dune landscape.

The recommendations are made in this report are:

1. That an application for an Archaeological Authority should be submitted to Heritage New Zealand Pouhere Taonga to cover the earthworks for the entirety of the proposed development area.
2. That all cut earthworks that may affect archaeological sites must be monitored by an archaeologist.
3. That all uncovered archaeological sites must be recorded by an archaeologist.
4. Archaeological sites that are uncovered during the works will hold Māori cultural values, and tangata whenua need to be consulted.

Expert Witness Code of Conduct

This report has been prepared by Emily Howitt (MA, Archaeology). I am a consultant archaeologist with twelve years experience, and have run my own consultancy (Emily Howitt Archaeology) for the last five years. I am a member of the New Zealand Archaeology Association.

I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. This report has been prepared in compliance with that Code, as if it was expert evidence presented in proceedings before the Environment Court. Unless I state otherwise, this report is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this report.

1 Introduction

1.1 Project Overview

This Archaeological Assessment of Effects has been prepared for Waikanae North Developments Ltd (**'WNDL'**) for the proposed subdivision of the property at 169 Peka Peka Road, Waikanae (**'the Project Area'**). The proposed project area comprises eleven land parcels. The legal descriptions are Lots 2, 3 and 5 DP 587727; Lots 1 and 2 DP 589363; Part Kukutauaki 1B1 Block; Lot 1 DP 21514; Ngarara West A46A Block; Sections 14 and 15 SO 505444; Lot 1 DP 82434; and Section 1 SO 505508.

The proposed subdivision encompasses 141 hectares of previously undeveloped land northwest between Peka Peka Road and the MacKay's to Peka Peka Expressway (M2PP) section of State Highway 1. Farming related structures, fencing, access tracks, and four transmission pylons are located within the development area. The remainder of the land is used for grazing.

The purpose of this report is to assess the archaeological values within the subdivision area, and the effects of the proposed earthworks impacting on those values. It is intended to support a general Archaeological Authority application to be made under Section 44a of the *Heritage New Zealand Pouhere Taonga Act 2014*. All recommendations in this report are made in accordance with statutory requirements.

Figure 1: The location of the proposed subdivision in Waikanae, Kāpiti, indicated by the red arrow (image from TopoMaps).

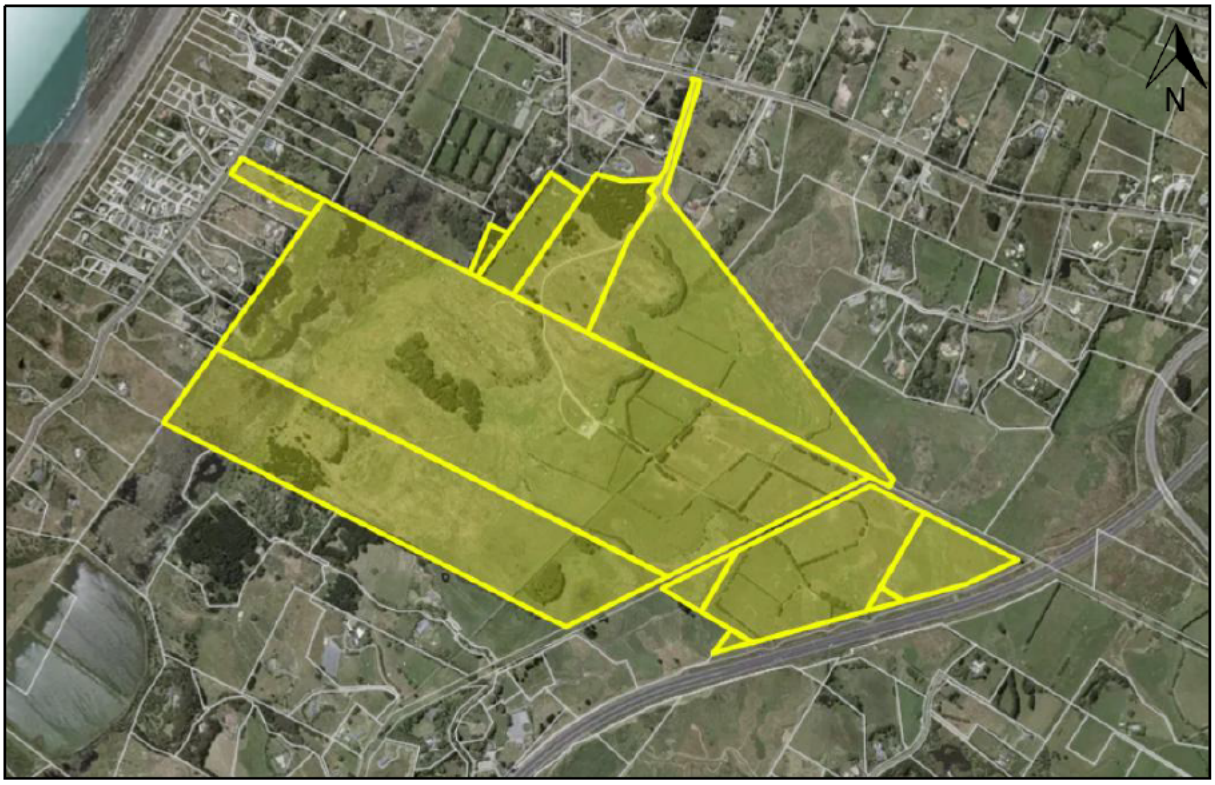

Figure 2: The proposed subdivision area shown in yellow. Image from Grip Map.

1.2 Proposed Works

The Waikanae North Development project is to establish a master-planned urban area (Figure 3) comprising:

- Approximately 1200 residential dwellings of diverse typologies.
- A local centre with retail, café, shared working space, and other commercial activities.
- Neighbourhood parks, playing fields, walkways and cycleways.
- Ecological restoration areas including a 15.5 ha ecological wetland sanctuary, 19 ha of amenity open space.
- Enhancement planting to the existing Te Harakeke wetland.
- Dune restoration and enhancement planting of some 17.5 ha.
- The creation of a harakeke harvesting area.
- Restoration and re-naturalisation of an existing watercourse.
- Transport connections.

Construction of the above will require substantial cut and fill earthworks across the Project Area (Figure 4), but particularly within the raised sand dune areas where there are areas of cuts up to a depth of 19.3m. The relatively level terrace to the east of the dunes will require substantially less earthworks.

Areas of the sand dunes will be retained in their natural form and designated as a recreation area with walking tracks. There are also several areas of wetland that will undergo ecological restoration.

Figure 3: Waikanae North illustrative masterplan (McIndoe Urban).

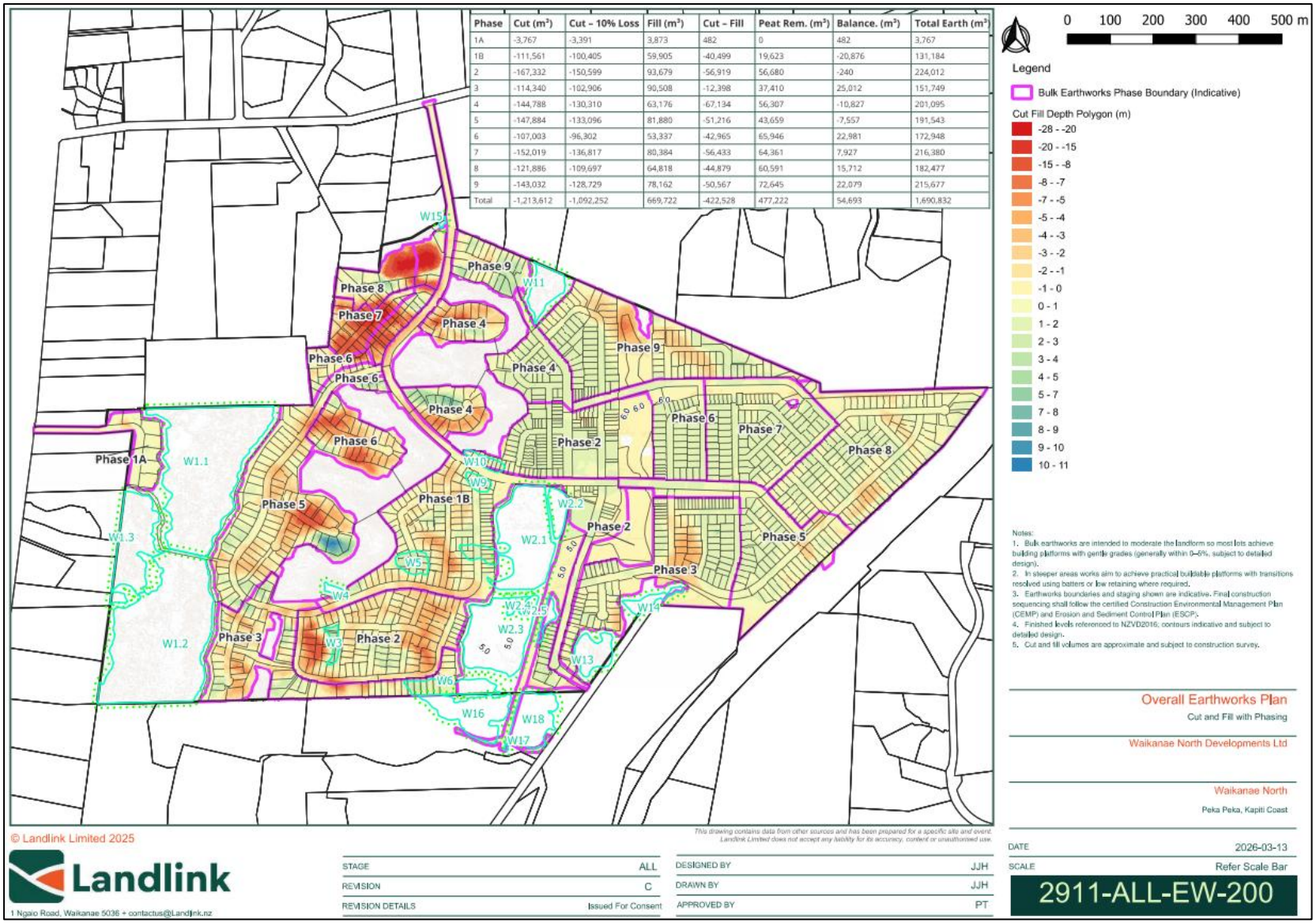

Figure 4: Waikanae North development earthworks plan (Landlink Limited).

2 Statutory Context

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

WNDL is seeking resource consent for the Project through the *Fast-track Approvals Act 2024* (FTAA).

A general archaeological authority will be applied for separately under Section 44 of the HNZPTA.

2.1 The Heritage New Zealand Pouhere Taonga Act 2014

The HNZPTA provides overarching protection to all archaeological sites (within the meaning of section 6 of the HNZPTA) whether they are recorded or not. The protection and management of archaeological sites is managed by the archaeological authority process under the HNZPTA which is administered by Heritage New Zealand Pouhere Taonga (**Heritage New Zealand**). The HNZPTA makes it illegal for a person to destroy or modify, or cause to be modified or destroyed, the whole or any part of an archaeological site without the prior authority of Heritage New Zealand.

Any person who intends on carrying out work that may modify or destroy an archaeological site, or to investigate an archaeological site using invasive archaeological techniques, must first obtain an authority from Heritage New Zealand. The requirement applies to sites on land of all tenure including private, public and designated land. The HNZPTA contains penalties of up to $300,000 for unauthorised site destruction and up to $120,000 for unauthorised site modification or breaches of the conditions of an authority.

The archaeological authority process applies to all archaeological sites that fit the HNZPTA definition regardless of whether the site is recorded in the New Zealand Archaeological Association (NZAA) Site Recording Scheme 'ArchSite' or registered with Heritage New Zealand; or if the site only becomes known about as a result of ground disturbance.

'Archaeological site' is defined under section 6 of the HNZPTA as:

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

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

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

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

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

There are 21 recorded archaeological sites within the Project Area. It is likely that other archaeological sites, within the broad definition of the HNZPTA, may be disturbed when undertaking earthwork activities in other parts of the Project area.

Any sites identified during the ground works in the proposed works areas will have automatic protection under the HNZPTA.

2.2 The Resource Management Act 1991

The RMA identifies the protection of historic heritage from inappropriate subdivision, use, and development as a matter of national importance (section 6(f)).

'Historic heritage' is defined by the RMA (section 2(1)) as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from archaeological, architectural, cultural, historic, scientific, or technological qualities.

'Historic heritage' includes:

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

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

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

As noted further below, there are no listed heritage areas or buildings in the Project area in the Operative District Plan. Reporting on historic heritage more broadly is not within the scope of this report, but I understand this is not required given that context.

This report therefore provides an assessment of the potential for disturbance to archaeological values or sites within the Project Area, and how any potential adverse effects on those sites or values are proposed to be avoided, remedied or mitigated. However, as I explain further below, I consider the conditions I have proposed to be put on the archaeological authorities for the Project will appropriately manage effects on historic heritage in terms of the RMA.

2.3 Operative Kapiti Coast District Plan 2021 Requirements

District plans provide a primary means of identifying and protecting heritage through objectives, policies and rules.

The Project Area does not contain any mapped heritage areas, buildings or sites of significance to tangata whenua, under the Operative Kāpiti Coast District Plan 2021.

The key policy direction in the Operative District Plan is to recognise and identify historic heritage, and sites and areas of significance to Māori, retain them, and protect them from inappropriate use and development. In addition, it seeks to provide for the construction of buildings and structures within sites and areas of significance to Māori where it can be demonstrated that the spiritual and cultural values of the site will be protected and enhanced and avoid the demolition or destruction of sites and areas of significance.

2.4 The Fast-track Approvals Act 2024

The *Fast-track Approvals Act 2024* (FTAA) is designed to streamline the consenting process for infrastructure and development projects that provide significant regional or national benefits. It allows applicants to obtain multiple resource consents and other required approvals (such as those under the Conservation Act or Wildlife Act) through a single, faster process rather than applying separately under various laws.

WNDL is applying for resource consents under the FTAA, however the archaeological authority will be applied for separately under the HNZPTA.

3 Methodology

The archaeological assessment for the Project Area was carried out using desk-top research methods and included a site visit.

The desk-top assessment largely utilises information from a prior archaeological assessment report prepared by Mary O'Keeffe (O'Keeffe 2021). Historical sources and reports from previous archaeological work were also consulted. These included:

- Online archives and reports held by Heritage New Zealand Pouhere Taonga,
- New Zealand Archaeology Association (NZAA) site records (via ArchSite), to identify the details of any previously recorded archaeological sites in the vicinity,
- Historic survey plans (via Grip Map) and historic aerial photographs (via Retrolens and the Kāpiti Coast District Council online GIS), and
- Modern aerial photographs (via Grip Map and Kāpiti Coast District Council online GIS).

A site walkover was undertaken in the Project Area to gain an understanding of the landscape and take up-to-date photographs. The purpose of the site was visit was not to relocate or identify further archaeological features as these have already been surveyed previously by O'Keeffe (2021; 2022) The site visit was completed on 5 June 2025 by archaeologist Emily Howitt and accompanied by Paul Turner of Landlink Ltd.

3.1 Constraints and Limitations

The key constraints and limitations on the archaeological assessment for the Project Area are considered to be as follows:

- No probing or targeted intrusive investigations like test pitting were undertaken during the site visit.
- Most of the ground surface in the subdivision area was obscured by vegetation which will have limited the ability to see surface evidence of archaeological features during site visit
- Archaeological site location data held in *ArchSite* should be regarded as a guide only and is generally based on reconnaissance rather than on accurate survey information. The coordinates of many of the sites in the database are of variable accuracy and the spatial extents for many recorded sites are poorly defined.
- This report does not include an assessment of Māori cultural values. Statements are made as to the location and nature of archaeological sites and their archaeological values. There are no statements on the cultural significance of the proposed development area nor are the

views of tāngata whenua represented in this report. An assessment of cultural significance will not necessarily correlate with an assessment of the archaeological significance of the area.

4 Environmental Context

The Kāpiti Coast is situated at the southern extent of a long band of coastal dunes on the southwest coast of New Zealand's North Island, running continuously north from Paekakariki to Taranaki. The topography of the Kāpiti Coast is characterised by a relatively narrow flat coastal shelf largely covered in sand dunes and wetlands, in front of inland hills. South of the Waikanae River the inland edge is a steep wave cut cliff. North of the river the hills form the foothills of the major Tararua Range.

There are typically three recognised phases of dune belts on the coastal terrace. The oldest sand dunes are generally found furthest inland, and more recent dunes have built up in front of them as the coastline extended out with deposition of recent material building successive foredunes (O'Keeffe 2019). Between the dune belts are flat areas of former and current wetlands, underlain with peat in places.

The duneland settings of archaeological sites on the Kāpiti Coast have been synthesised by McFadgen (1997). He has outlined three general phases of dune deposition on the coastal terrace:

- **Waitarere:** recent, less than 400 years, dunes near the coast,
- **Motuiti/Taupō:** dunes about 1000-1800 years in age about 0.8 to 2 km from the coast. These have a high content of Taupō Pumice lapilli indicating that they were accumulating at the time of the Taupō Pumice Eruption ca. 1720 BP, and
- **Foxton:** dunes older than the Taupō eruption that started forming about 6500 BP and forming the balance of the inland areas.

There are archaeological sites on the Waitarere dunes, but these would have been formed on unstable, exposed surfaces. The highest concentration of sites is on the Taupo or Foxton-era dunes, near swamps or lakes. These dunes would have been stable areas with established forest when first occupied and were interspersed with wetlands and navigable waterways connecting to the coast. The archaeological site distribution indicates that the dunes were preferred areas for settlement.

The proposed Project Area contains parabolic dunes likely dating to the Taupō phase as well and low-lying land that is likely to have formerly been part of a wetland system comprising areas of swamp and freshwater streams connecting to the coast. This topography is typical of the Kāpiti Coast sand dune landscape. Dunes within the proposed Project Area nearest to former wetland will have a heightened probability of containing archaeological sites.

5 Research Results

5.1 Historical Background

Humans likely settled the Kāpiti Coast shortly after Polynesian migration started in the early to mid-14th century AD. Muaūpoko iwi occupied much of the Kāpiti Coast prior to 1822 when the Te Rauparaha-led Ngāti Toa iwi arrived from Kāwhia. Te Āti Awa accompanied Te Rauparaha on the heke of 1821-22 and settled around the Waikanae estuary area. Ngāti Raukawa of Waikato settled

Ōtaki and up through Horowhenua/Manawatu later that decade. Te Āti Awa constructed several major pā around the Waikanae River, including Waimea Pā, Arapawaiti Pā, and the Waikanae Pā at Kenakena (Carkeek 1966).

The tribal alliance between Raukawa and Te Āti Awa was disrupted by land disputes leading to the battles of Haowhenua (1834, Te Horo area) and Kuititanga (1839, around the mouth of the Waikanae River), but both times peace was re-established. The latter battle was the last tribal battle to be fought in the Waikanae district and resulted in the loss of many warriors on both sides.

The first Europeans to settle the district were whalers, followed by missionaries of the Church Missionary Society. Bishop Octavius Hadfield built a church on the southern banks of the Waikanae River in 1842, and together with Te Rauparaha organised the building of the Rangiātea Church which opened in Ōtaki in 1851 (Carkeek 1966). An overland mail service between Wellington and Whanganui was established in the 1840s linking the two growing centres via the Kāpiti Coast. European settlement developed through the region driven largely by farming and the flax industry. Roads began to be constructed in about 1877, and the Wellington – Manawatu Rail Line was in operation by 1886 (Adkin 1948). Kāpiti Coast settlements including Waikanae expanded after the construction of the railway, attracting small farmers, flax millers and timber millers.

An important industry that developed in the area was the milling of flax. MacLean records “Kapiti was the ideal place for a flax industry. The mainland was a series of vast interconnected wetlands, thick with Phormium tenax, stretching from the marches of the Manawatu River to the North of the Taupo Swamp in the south” (MacLean 1999: 116).

Māori had traditionally processed flax for many uses: baskets, mats, fishing nets and traps, footwear, cords and ropes. After Europeans arrived in New Zealand the demand for flax increased, to be used as ropes for ships’ rigging and other purposes. Hand stripping and processing was replaced by machine processing; Māori dominated the flax trade for many decades.

MacLean records that the first large flaxmill in Waikanae was built by John Stansell in 1888 (MacLean 2010: 202). The mill was situated on the former SH1 road by the Paetawa wetland. This site is outside the proposed Project Area.

5.2 Historical Survey Plans and Maps

The proposed development area was formerly part of three much larger survey blocks called Kukutauaki No 1, Ngāwhakangutu No 1 and Ngarara (Figure 5). Kukutauaki is thought to have originally been the name of a stream, but was later referred to as a tribal boundary between the rohe of Te Āti Awa and Ngāti Raukawa during the sitting of the Native Land Court.

Plan ML 1407, which dates to 1896, shows the landscape in close vicinity to the subject parcels, and shows details of the vegetation cover at this time (Figure 6). The northern part of the extensive Ngapara Swamp extends into the eastern half of the Project Area. Rawakahia Lagoon is shown to the south-west.

There is a historic survey marker labelled “M” on Figure 6. Paul Turner of Landlink Ltd advised that he relocated this historic marker and found a steel pipe marking the location. It likely the steel marker dates to pre-1900 use of the datum.

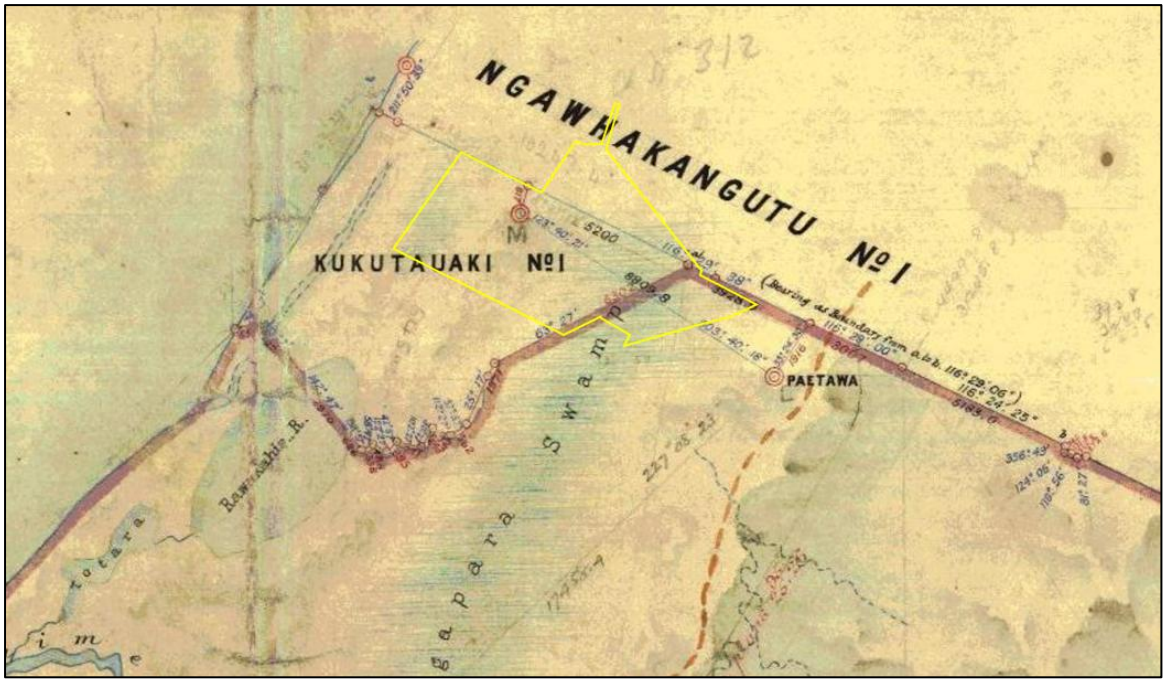

Figure 5: Enlarged area of survey plan ML 504 (1880) superimposed by the Project Area (shown in yellow).

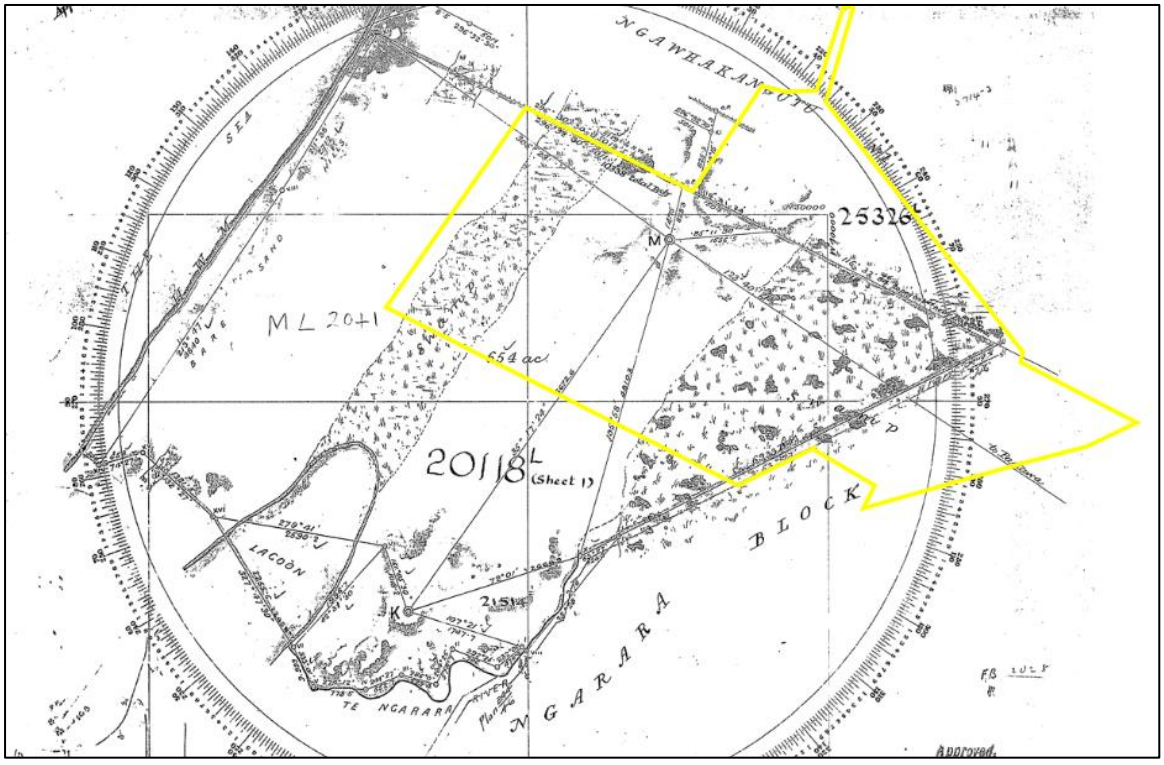

Figure 6: Enlarged area of survey plan ML 1407 (1896) superimposed by the Project Area (shown in yellow).

In 1966 Wakahuia Carkeek compiled a history of Māori occupation of the Kapiti Coast based on traditional accounts, detailing important historical events like the Kuititanga battle. He included a specific chapter on the middens of the coast (Carkeek 1966: 102). A major part of his book is a list and description of place names of the coast, based on traditional evidence, and maps showing the locations of these places. Carkeek's Map 4 (1966: 172), shows the area within which the subject parcels are located (Figure 7 and Figure 8).

Carkeek's plan, (Figure 7), shows several traditional place names:

- **Kawakahia**: the name of the large lagoon close to the coast a little to the north of the Waikanae Beach settlement (Carkeek 1966: 118).
- **Ngapara**: A large swamp inland of Kawakahia lagoon at Waikanae. It is also shown on some old maps as a stream draining into the lagoon. Ngapara was also the name of an eel weir which once belonged to Wi Parata. There were cultivations closet to the weir (Carkeek 1966: 127.
- **Omatuku**: A small lagoon at Waikanae inland of Pouatemoana and the Kawakahia swamp (On Carkeek's Map 4 this lagoon is on fact considerably north of the Kawakahia swamp) (Carkeek 1966: 118).
- **Hiwi-o-te-ngarara**: not discussed by Carkeek. Hiwi can translate to ridge, so this dune ridge may be the ridge of ngarara.
- **Te Maire**: This was the name of an eel weir which according to Wi Parata formerly belonged to Muaupoko but was pointed out to Te Pehi by Te Ratu the captive chief of that tribe. The name was a Muaupoko one which as in the case of some others in the Waikanae district was retained by the Ngati Toa conquerors. Wi Parata claimed this weir and the cultivations close to it (Carkeek 1966: 120).
- **Paetawa**: A trig station situated close to the main highway north of Waikanae. At one time the tawa berries there were said to have attracted many pigeons, and this has been suggested as a probable origin of the name (Carkeek 1966: 130).
- **Rangiora**: shown as a trig station on most maps, about 30 chains south of Paetawa and a little to the west of the man highway. It is described by Wi Parata as having been a Ngati Kura cultivation ground along with several others at or before the time of the Kuititanga Battle in 1839 (Carkeek 1966: 139).

Carkeek shows the boundary line between Ātiawa and Ngāti Raukawa tribal land running through the proposed project area.

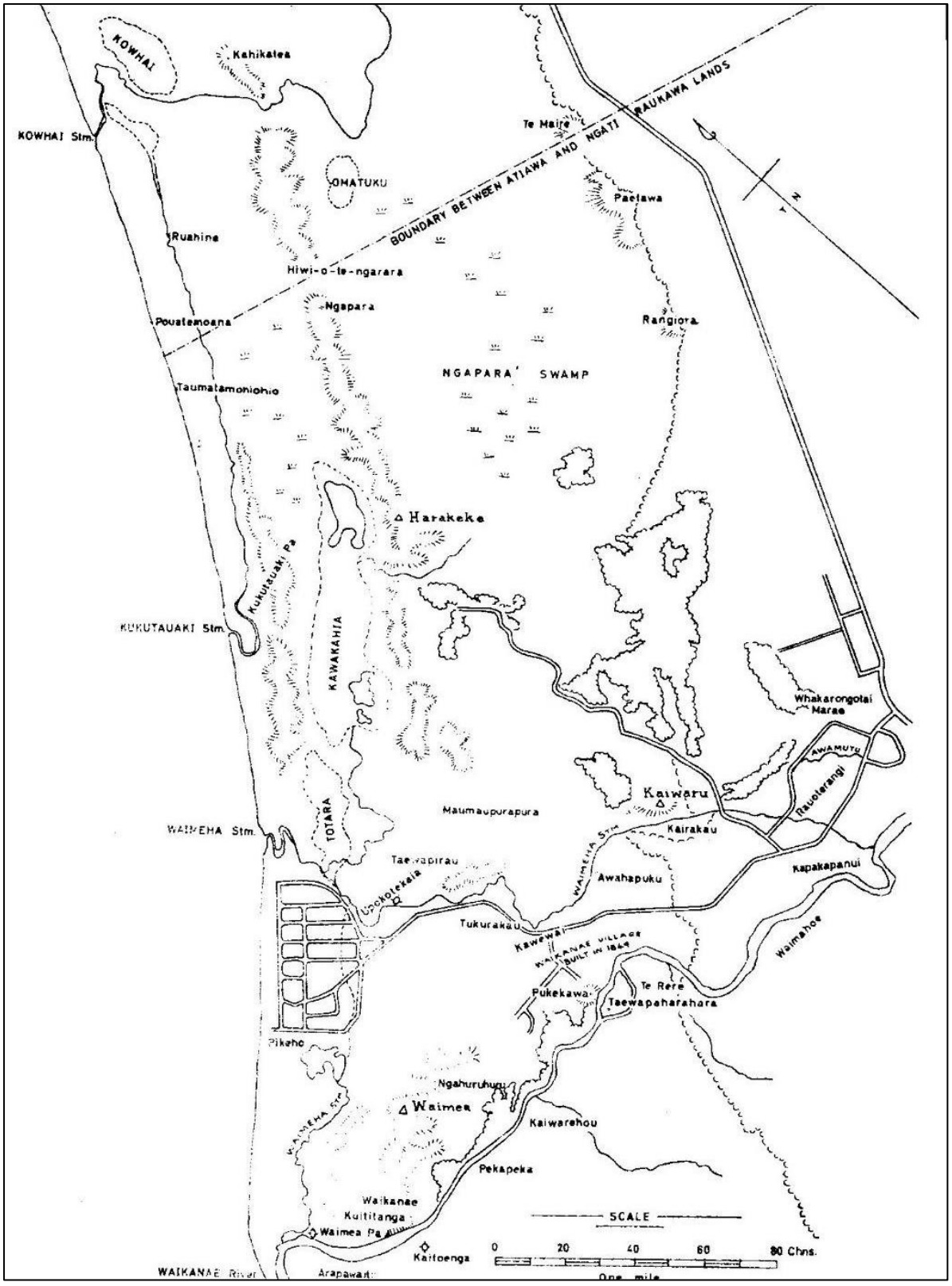

Figure 7: Carkeek's Map 4: Main Waikanae coastal area north of Waikanae River (Carkeek 1966: 172).

Figure 8: Carkeeks (1966:172) map showing the Project Area superimposed. Image From O'Keeffe (2021).

5.3 Historical Aerial Photographs

The earliest aerial images of the Waikanae area date to the 1940s and they show the proposed subdivision area as undeveloped pasture and wetland with very few trees (Figure 9). By 1998 there are stands of what may be commercially grown pine trees (Figure 10). These appear to have been planted on the higher dune areas rather than the low-lying portions of the land. In 2007 the aerial imagery shows the trees nearest to Peka Peka have been removed (Figure 11).

The aerial images show that the land has been farmed since at least the 1940s (though it is considered likely that farming activities occurred soon after European arrival). Other activity on the land over the past century has included the plantation of exotic tree species, and the construction of farm buildings. There is likely to have been some minor disturbance to the landscape to form the farm tracks that remain present, and to install and maintain fencing.

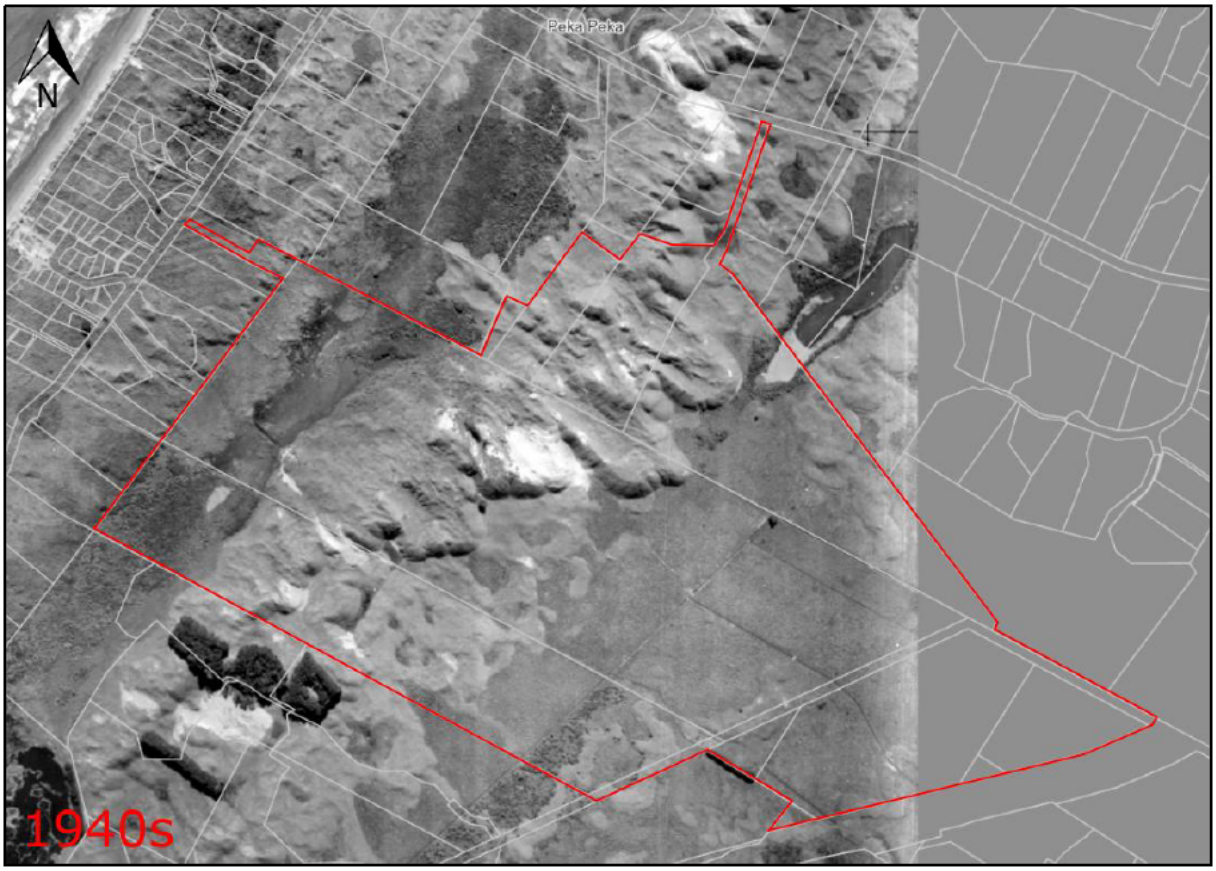

Figure 9: 1940s aerial image showing the proposed development area. Image from KCDC GIS.

Figure 10: 1998 aerial image showing the proposed development area. Image from KCDC GIS.

Figure 11: 2007 aerial image showing the proposed development area. Image from KCDC GIS.

5.4 The Physical Environment

This section has been adapted from O'Keeffe (2021).

The physical environment of the Kapiti Coast is an important factor in understanding and interpreting the archaeological record. As McFadgen states

"People in pursuit of their everyday lives exploited and changed their environment to meet their needs for food, clothing and shelter and their culture was, in turn, conditioned by it. The flow of information in this approach is two way: archaeological remains provide an historical perspective for the landscape as it appears today; and understanding the natural and cultural processes which have shaped the landscape is important for the interpretation of human and natural history" **(McFadgen 1997: 6)**

The physical environment of the Kapiti Coast is a major influence on archaeology, both in terms of the types of sites present, and where they are found.

5.4.1 Dunes

The Kāpiti Coast is situated at the southern extent of a long band of coastal dunes on the southwest coast of New Zealand's North Island, running continuously from Paekākāriki north to Taranaki. The topography of the Kapiti Coast is characterised by a relatively narrow flat coastal shelf largely covered in sand dunes and wetlands, with hills inland. South of the Waikanae River the inland edge is a steep wave cut cliff. North of the river the hills form the foothills of the major Tararua Range. A major influence on the landscape is the Waikanae River, which both separates different topographic

areas to its north and south, and is also a major contributor to the nature of the coastline through water borne material and longshore drift.

The dunes along the entire coast (north and south of the river) have formed during successive dune building phases. In the simplest terms, the dune sands are made up of material brought to the coast by rivers, moved along the coast by wave action. The material builds a foredune, this dune becomes unstable, and its material gets blown inland. Wetlands form between the dune belts.

There are two main dune belts on the coast: the oldest sand dunes are generally found furthest inland (McFadgen 1997), and subsequent, more recent, dunes have built up in front of them as the coastline extends out with deposition of more recent material building successive foredunes.

Between the two dune belts is a flat area of former and current wetlands, underlain with peat in places (Figure 12).

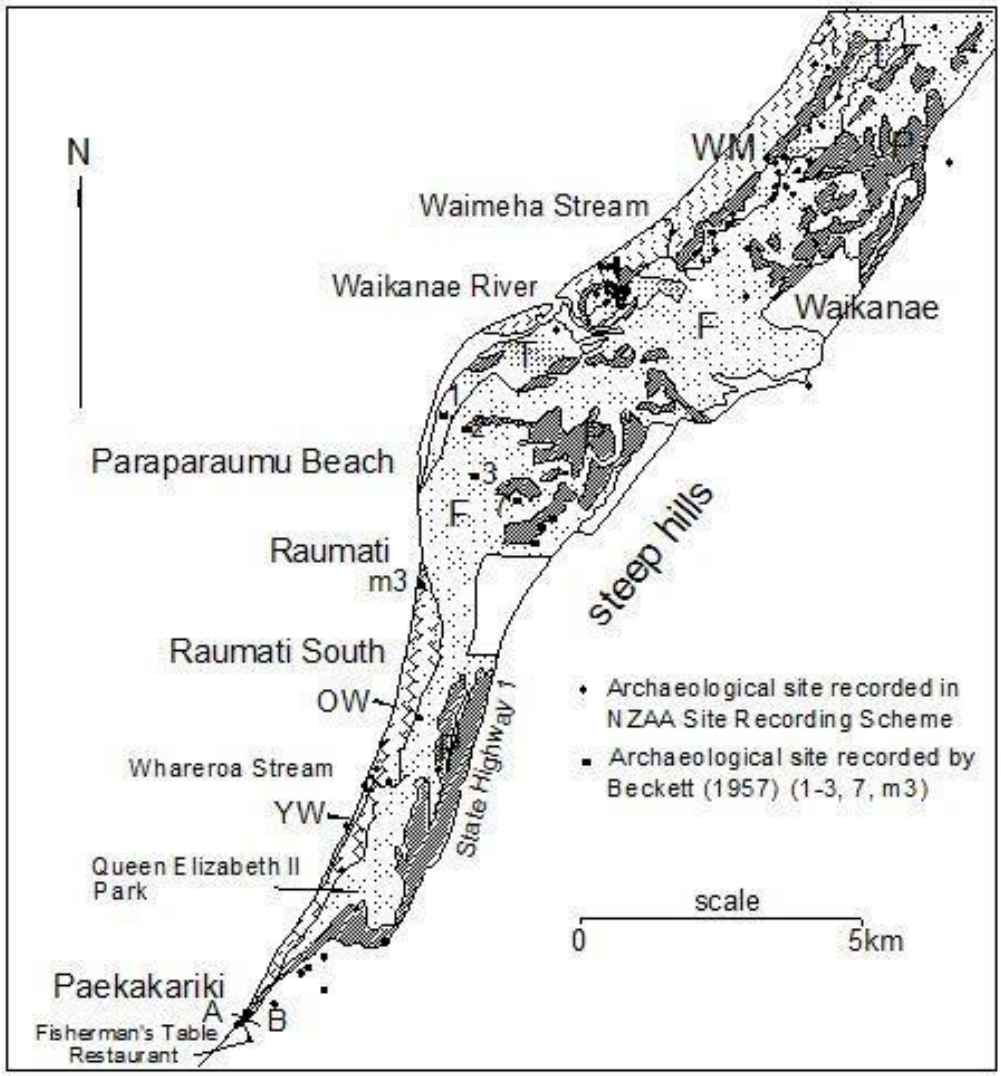

Figure 12: Sketch map of southern end of dune belt (McFadgen 1997: 10).
YW = Younger Waitarere
OW = Older Waitarere
WM = Waitarere-Motuiti (not separately distinguished)
T = Taupo
F = Foxton
P = Peat Swamp

The oldest dunes on the coast are the Foxton dunes, deposited between about 6500yrs and 2000yrs BP (McFadgen 1997:8). The Motuiti Dune Building Phase followed at about 2000-800yrs BP[1]. The Motuiti Dune contains redeposited material derived from the Taupo eruption of 1720yrs BP such as lapilli and pumice, and has advanced over the Foxton dune (McFadgen 1997:8).

The Taupo dune was the foredune at the time of the Taupo eruption, and is still reasonably intact in the vicinity of Waikanae (McFadgen 1997:8).

The Older Waitarere Dune Building Phase dates to about 400 yrs BP, and this dune in turn is encroaching over the Motuiti dune (McFadgen 1997:8). The Younger Waitarere Dune Building Phase dates to about 150 yrs BP (McFadgen 1997:8). McFadgen postulates that these two latter dune building phases are seismic in origin, but this hypothesis needs to be tested.

In general terms more recent dunes overlie older dunes, and can bury archaeological deposits that may be on the surfaces of the older dunes. It has been observed that the Motuiti overlies cultural material in Manawatu; this has not been observed in Kapiti.

The old sea cliff formed at the end of the post-glacial sea level rise follows more or less the line of former State Highway 1.

The formerly linear dunes north of the Waikanae River have been reshaped by the wind into a series of parabolic curves. This broad band of high, steep-sided dunes passes through the centre of the proposed Project Area (Figure 13). Seaward of the band of dunes is a band of low wetlands parallel to the coast, with the most recent currently forming a dune belt adjacent to the coastline.

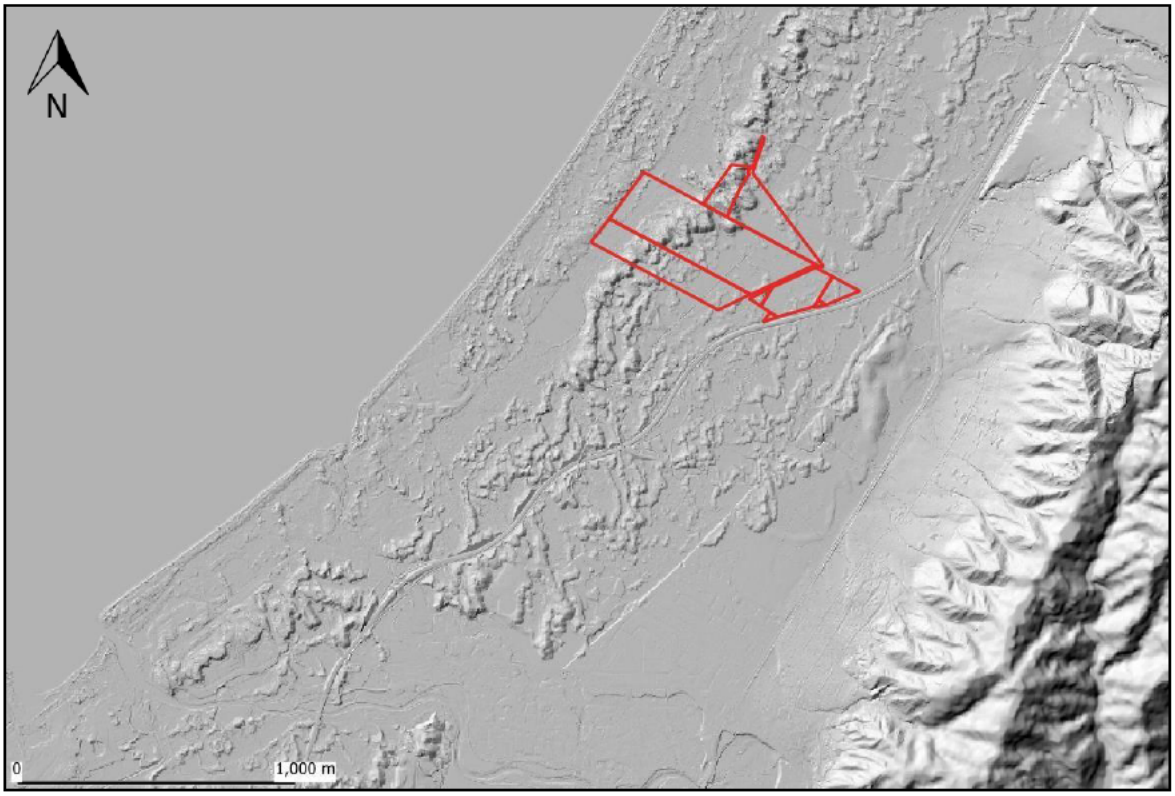

Figure 13: LiDAR image showing the topography of northern Kāpiti Coast. The Project Area is shown in red. Image from O'Keeffe (2021).

[1] "BP" stands for "Before Present", with "Present" set at 1950AD

5.4.2 Wetlands and Implications for Archaeological Sites

As noted, there are areas of former wetland interspersed between the dunes. The areas of wetland were extensive, between the coastal and inland dune ridges. The wetlands had low ridges of sand running through them.

The wetland areas are significant in terms of human occupation as they would have been rich sources of food and raw materials, including birds, eels and plant species. Further north in the region (north of the Waikanae River, and especially north of Otaki) lakes and lagoons were formed within the dunes, which would have provided routes for canoe travel, birds and freshwater species, and island pa provided safe refuges. The importance of the wetlands for the flax trade has been noted.

M2PP data suggests these wetlands, especially those north of the Waikanae River, were previously much wetter. Whilst human draining is responsible for some diminishment of the wetlands it is also proposed that uplift from a large seismic event has caused regional drainage of the wetlands (O'Keeffe 2019: 176).

5.4.3 Relationship Between Archaeology and the Environment

There is a strong functional relationship between the environment and the archaeological resource.

Archaeological data on site type, size and location obtained from the M2PP project shows that sites are largely located on the dunes, beside areas of formerly navigable wetlands.

Along the Kapiti-Horowhenua Coast the predominant site type on the coastal dunes is middens. These are deposits of shell, occasionally with oven evidence or some bone, marking either a temporary resting place of groups of people, or occasionally locations of more permanent settlements.

The locational data also shows a strong preference for the dunes north of the Waikanae River – the midden sites here tend to be larger and comprised of more diverse species than sites south of the river.

The shell content of the midden varies. Whilst the dominant species is tuatua, other species, including both coastal and estuarine species, are present in middens, indicating exploitation of the resource from both locations. Fishbone, birdbone and mammal bones have also been found in the middens.

Archaeological work along the coast shows that due to the dynamic nature of the unstable dune sites can be found several metres below the ground surface. Middens especially can be inundated by windblown sand.

The nature and location of sites on the coastal Kapiti dunes is determined by the physical environment and the opportunities it presents. Very large complex middens were located on these high parabolic dunes, indicating large scale exploitation of the shellfish and fish resources of the coast. The sites themselves within in the dunes are located up to 1.5km from the coast, suggesting people deliberately carried the resources a long way inland to process them. The sites are generally reasonably uniform in nature and form – they range in size from moderate to large deposits, and contain a complexity of constituent elements – various species of shellfish, plus fishbone, bird bone and rat bone.

However, the dunes and surrounding wetlands also played a role in the subsistence economy. The wetlands surrounding the high dunes contained additional resources such as birds and eels, plus flax

to make containers. In addition, the wetlands surrounding the high dunes would have been navigable by waka. This pattern is seen along the M2PP route – sites are located on high or moderate dunes, beside navigable waterways.

5.4.4 Predictive Model

A key aspect of the archaeology of the Kapiti Coast is that sites are usually never visible on the ground surface. Therefore, a predictive model must be utilised to determine potential site location and presence.

Information from the M2PP archaeological programme has refined the predictive model for the Kapiti Coast, and has highlighted the strong functional relationship between environment and site presence, both in terms of the dynamic nature of the shifting dunes, and what aspects of the environment were preferred for human activity.

A predictive model for the Kapiti Coast can assist in guiding archaeological investigations that may be undertaken for the construction of the proposed work by determining where such investigations are likely to be required. The predictive model can detail what types of sites may be encountered on the coast, and assist in recommending appropriate mitigation measures.

The model comprises the following elements:

- The most common site type is shell midden.
- Middens are occasionally, but not always, found in association with ovens.
- Another common site type is individual or small group burials within the dunes.
- The dunes are interspersed with current or former wetlands; these were rich sources of food and raw materials, including birds, eels and plant species.
- The vast majority of sites are found on sand dune ridges, especially on dunes adjacent to navigable wetlands.
- There is a preference for occupation locations on dunes beside previously navigable waterways; these waterways were used as transport routes.
- Earthwork sites – pits, terraces, pa – are very rarely found on the coast.
- No evidence of pre-European gardening has been recovered on the coastal dunes; traditional and ethnographic evidence of gardens suggests these were post contact crops being grown by Māori, such as wheat and potatoes.
- Very little cultural material has been recovered from swamps or wetlands by archaeologists on the Kapiti Coast.

Research findings from the MacKays to Peka Peka expressway (M2PP) archaeological programme indicates that the majority of middens were located on dunes situated by current or previous wetlands. Because these wetlands would have been navigable, people appeared to be travelling to the coast by waka to take advantage of the rich fish and shellfish resources, then carrying the unprocessed food inland in their waka to areas of dunes beside wetlands. Here they would process the food, using flax from the wetlands to create baskets plus taking advantage of the birds and eels available in the wetlands.

The sites on the coastal dunes appear to represent transient settlement, either small groups of people collecting resources from the coast, river, forest or swamp, or groups of people passing through the region. No evidence of permanent settlement prior to the 1800s has been found on the

coastal dunes. More permanent settlement would probably have occurred in the hills above the coastal flat where more stable soils and geology would have permitted the construction of more permanent shelters, and may have provided better gardening soils, along with the strategic advantage of height. Other resources were not far away, such as the food and plant resources available from Kapiti Island, and the important lithic (stone) resources available from at the top of the South Island.

5.5 Archaeological Recording

The following section is adapted from O'Keeffe (2021).

Recording of archaeological sites on the Kapiti Coast has taken place for much of the 20th century, but observations commenced prior to this.

Field (1891) described changes in the appearance and geomorphology on the coast in a forty-year period based on his own observations, made between 1851 and 1891. He noted that in 1851 a constabulary station (police station) was located near the mouth of the Waikanae River, but by 1868 the river had changed course and washed part of the station away.

In particular Field described a site on the south side of the Waikanae River: "A sandhill 30ft to 40ft high, which formerly stood almost behind the hotel, and which from the immense amount of pipi-shells which it contained, formed a very conspicuous landmark for entering the river, has been entirely blown away, and its contents are now scattered over nearly flat ground" (Field 1891: 562).

Field also attested to the dynamic nature of the sand dunes: "At the back of the hills a considerable extent of what was good grass-land is now buried under sand" (Field 1891: 563).

Adkin (1948) is a key source of data for archaeology further north of Kapiti, at Horowhenua. In his landmark book *Horowhenua* he reported on his years of observations and analysis of sites in Horowhenua as far south as Ōtaki. Two aspects make Adkin's data of particular significance: firstly, that he spoke with Māori in the area in the 1920s, and recorded place names and traditions of the area, and secondly, he observed and recorded many sites from the 1920s onwards, before sites were obscured or destroyed by the more intensive farming techniques of the 1950s onwards. Many of Adkin's observations on the nature and distribution of sites can be extrapolated further south to the Kapiti area.

As noted, in 1966 Carkeek compiled a history of Māori occupation of the Kapiti Coast based on traditional accounts, detailing important historical events like the Kuititanga battle. He included a specific chapter on the middens of the coast. A major part of his book is a list and description of place names of the coast, based on traditional evidence, and maps showing the locations of these places.

There has been sporadic archaeological site recording in the Kapiti-Horowhenua region from the 1920s through to the present. Only one planned systematic survey been undertaken, by Colin Smart (1962) and students of the Wellington Teachers College in 1959-61. Smart was specifically sampling and analysing middens, so arguably was not concentrating on other possible sites. However, like Adkin, Smart (1962) also noted the environmental relationship between the dunes and the midden sites.

The vast majority of archaeological site recording since the 1980s has been reactive and development driven. This increased in the 1990s with the introduction of the resource consent process of the Resource Management Act, which introduced the requirement of Assessment of Environmental Effects.

Recent archaeological work on the coast falls into three broad categories:

- Site surveying, most usually undertaken for an assessment prior to a specific development outcome such as a subdivision or a road;
- Monitoring of development work, such as construction of subdivision or roads;
- Research-driven work, which may include research for DoC or another management body, or research to inform the archaeological record.

A key piece of work was the archaeological programme for the M2PP expressway, as noted. This project has added a further 235 sites, with over 95% of these sites being shell middens. More importantly, the comprehensive nature of this programme has allowed the formulation of a regional archaeological model.

5.5.1 Recorded Archaeological Sites

A total of 21 archaeological sites has been recorded within the proposed Project Area since the 1960s (Figure 14 and Table 1). In addition to the archaeological site records within the proposed Project Area there are numerous site records in the wider landscape of the Waikanae-Peka Peka area of the Kāpiti Coast (Figure 15). Many of these sites were recorded during the construction of the MacKays to Peka Peka Expressway (see Section 5.5.3).

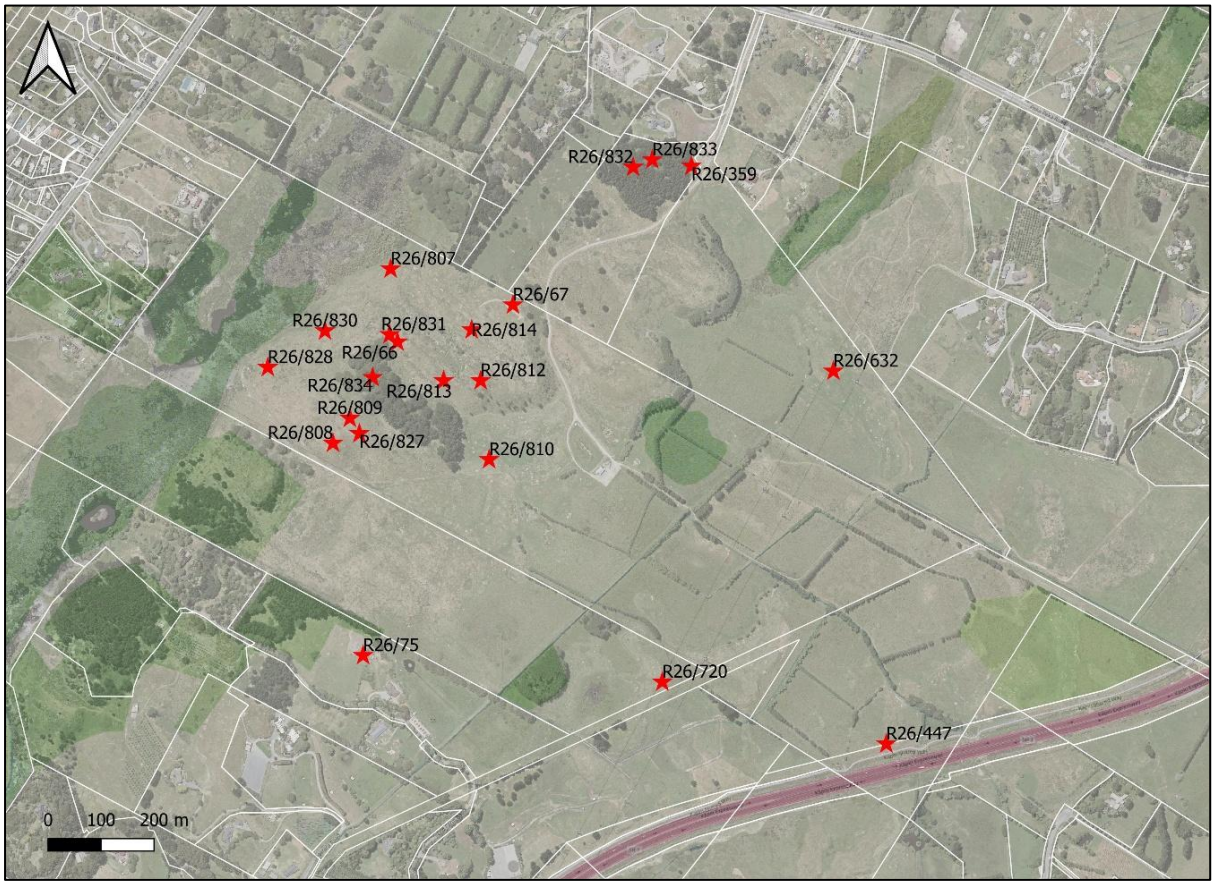

Figure 14: Archaeological site records (stars) within the proposed Project Area.

Table 1: Archaeological site records within the proposed Project Area.

Site Record Number	Easting	Northing	Site Type	Recording Details	Condition
R26/66	1773647	5476777	Midden	1960 Smart Survey	intact
R26/67	1773865	5476847	Midden	1960 Smart Survey	intact
R26/75	1773582	5476185	Midden	1960 Smart Survey	intact
R26/359	1774202	5477109	Midden	2006 Opus Ngawhakangutu monitoring	intact
R26/447	1774570	5476018	Terrace	2014 M2PP Survey (on land boundary)	intact
R26/632	1774470	5476722	Midden and platform	2015 Transpower Survey	intact but poor
R26/720	1774147	5476135	Midden	2017 Transpower Survey	destroyed
R26/807	1773634	5476915	Midden	2021 O'Keeffe Survey	intact
R26/808	1773525	5476586	Midden	2021 O'Keeffe Survey	intact
R26/809	1773557	5476633	Midden	2021 O'Keeffe Survey	intact
R26/810	1773820	5476555	Midden	2021 O'Keeffe Survey	intact
R26/812	1773804	5476704	Midden	2021 O'Keeffe Survey	intact but poor
R26/813	1773734	5476704	Midden	2021 O'Keeffe Survey	intact but poor
R26/814	1773787	5476800	Pits	2021 O'Keeffe Survey	intact but possibly natural
R26/827	1773575	5476604	Midden	2022 O'Keeffe pre-harvest survey	intact
R26/828	1773402	5476729	Midden	2022 O'Keeffe pre-harvest survey	intact but poor
R26/830	1773510	5476798	Midden	2022 O'Keeffe test pit monitoring	intact but poor
R26/831	1773632	5476791	Midden	2022 O'Keeffe test pit monitoring	partially intact but has been investigated and sampled
R26/832	1774092	5477107	Midden	2022 O'Keeffe post-harvest survey	intact but poor
R26/833	1774128	5477121	Midden	2022 O'Keeffe post-harvest survey	intact
R26/834	1773600	5476710	Midden	2022 O'Keeffe post-harvest survey	intact

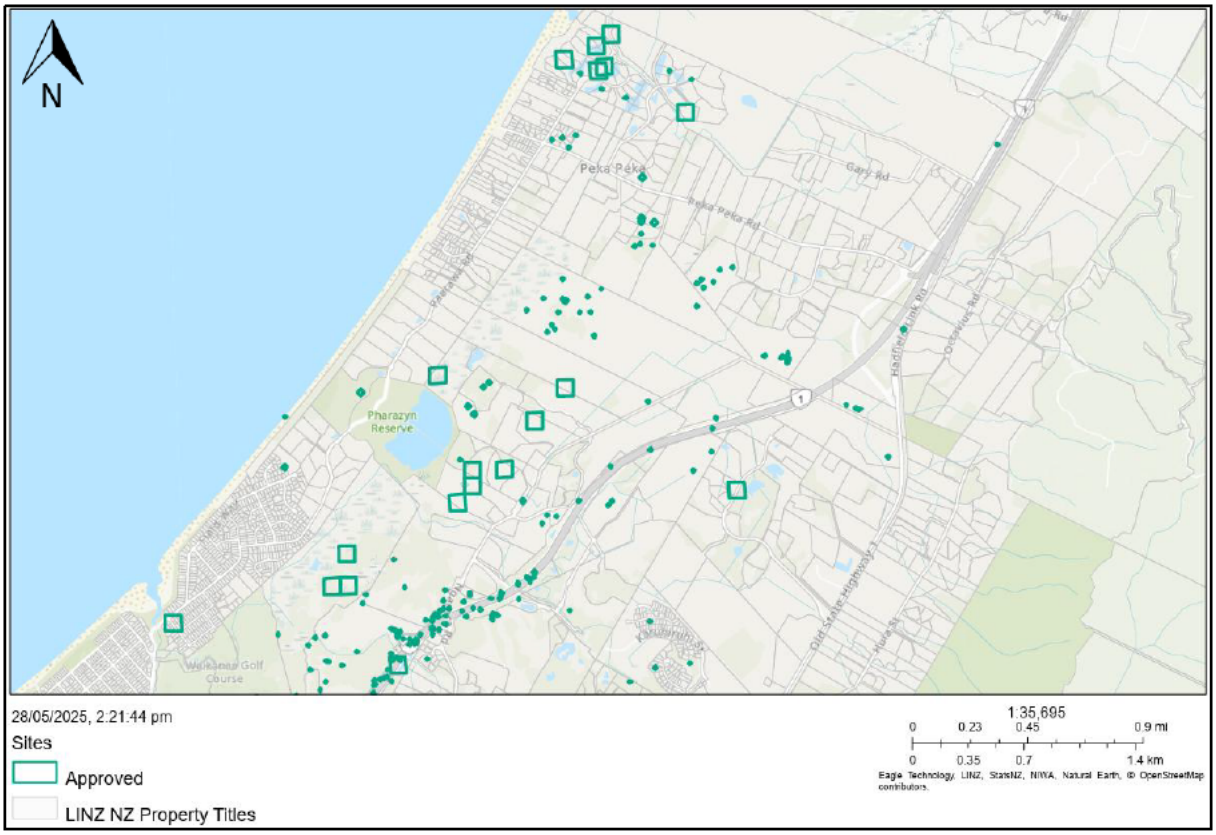

Figure 15:Archaeological site records (points marked in green) within the wider Waikanae-Peka Peka area. Image from ArchSite.

5.5.2 169 Peka Peka Road Forestry Harvest and Geotechnical Investigations

In 2022, archaeologist Mary O'Keeffe monitored works under an archaeological authority, including conducting a pre-harvest survey, monitoring excavation of geotechnical test pits and conducting a post-harvest survey (O'Keeffe 2022). Seven new sites were recorded during all three surveys for the forestry and geotechnical investigations work (Figure 16).

All recorded sites were shell middens, which is the most common site type found on the Kapiti Coast. The sites were typical in their characteristics of shell middens found on the Kapiti Coast:

- They were within the dune belt
- They were located on or near the crest of the dune ridges
- The predominant species that appeared to be present through a visual assessment was tuatua (*paphies subtriangulata*). Other species observed were dosinia (*dosinia anus*) and trough shell (*mactra sp.*).

Sites recorded during the post-harvest survey generally presented as small, generally disturbed areas of shell, that had been revealed and substantially modified by harvesting operations.

One site, R26/831, was half sectioned to reveal its depth and stratigraphic nature (Figure 17). The site was comprised of a single lens of shell on the surface of the dune. The excavated section revealed a dense largely continuous lens of shell, fragmented on the surface and largely whole on the lower parts. This fragmentation may be due to farm vehicles driving over the dune surface. At its deepest this dense lens was 15cm thick.

The remainder of the half-sectioned site R27/831 and the other sites that were recorded remain *in situ* on the property.

Figure 16: Locations of the sites recorded by O'Keeffe in 2022 (O'Keeffe 2022: 6).

Figure 17: Exposed section of R26/831 (O'Keeffe 2022: 12).

5.5.3 MacKays to Peka Peka Expressway Archaeology

Extensive archaeological investigations and monitoring were undertaken prior to, and during, the construction of the adjacent expressway, and numerous archaeological sites were found and recorded (Brooks *et al* 2016, O'Keeffe 2019).

Like the proposed Project Area, the expressway designation had remained largely unmodified, and landscape and archaeological features were found to be largely intact. The expressway traversed a significant portion of the hilly sand dune landscape typical of the Kāpiti Coast. The nature of this landscape, with high dune belts and intermediate navigable wetlands, allowed access throughout the dunes, and to significant resources (O'Keeffe 2019). Harvested shellfish from the extensive and reliable tuatua beds on the sandy coast and other resources were able to be transported inland via waka where temporary camps on the dunes were set up to process the harvests (O'Keeffe 2019).

Shell middens, occasionally with evidence of cooking or smoking fires were essentially the only site type found in this rolling dune landscape (Brooks *et al* 2016). Middens sites ranged from very small (only 1 metre or so) up to the relatively large with many cubic metres of shell.

As seen in Table 1, the vast majority of sites recorded within the proposed Project Area are shell middens. This is consistent with data from M2PP, where O'Keeffe states, "Of the total 226 sites recorded during the M2PP programme, 84% of the sites (189) were middens, or middens in association with some other archaeological feature" (O'Keeffe 2019: 107).

The expressway designation is directly adjacent and traverses the same rolling dune landscape found within the proposed subdivision area. It is reasonable to extrapolate that there will be a similar frequency of shell middens found on the dunes within the proposed subdivision area to what was found during the investigations and monitoring of the M2PP expressway works.

6 Site Visit

The property was visited by archaeologist Emily Howitt and development manager Paul Turner of Landlink Ltd on 5 June 2025. No attempt was made to relocate the recorded archaeological sites.

The Project Area comprises three main landscape types: dune hills, low-lying pasture and wetlands (Figure 18 and Figure 19). The dune hills are currently covered with a mix of low vegetation and grass.

Much of the low-lying area to the east is grazing pasture and established trees. There are modified waterways which have been cut to drain the pasture areas.

The main wetland area to the west of the dunes contains dense wetland vegetation including flax and cabbage trees.

Figure 18: Looking east toward the Tararua Range across the low-lying parts of the Project Area from the sand dune band near the road entrance.

Figure 19: Looking southwest from the high dunes toward Kāpiti island across the wetland area on the western edge of the Project area.

7 Archaeological Values

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, current research questions and hypotheses about New Zealand's past. HNZPT has provided a series of archaeological guidelines, one of which outlines matters to be considered when assessing archaeological values. These are: condition, rarity, contextual value, information potential, amenity value and cultural associations.

An analysis of values is made below for recorded archaeological midden/oven sites within the proposed Project Area, and further unrecorded midden sites as these are the most common archaeological site types in the Kāpiti region and the most likely to be encountered during excavations.

Table 2: Statement of archaeological values for midden/oven sites.

Sites	Value	Assessment
Recorded middens R26/66 R26/67 R26/75 R26/359 R26/632 R26/807 R26/808 R26/809 R26/810 R26/812 R26/813 R26/827 R26/828 R26/830 R26/831 R26/832 R26/833 R26/834 and further unrecorded middens	Condition	Some sites are visible on the ground surface, but most are likely to be largely below the topsoil layer. Condition Value: Variable, but likely good in most cases. Note that R26/831 has been previously half-sectioned.
	Rarity/ Uniqueness	Middens and ovens are very common on the Kāpiti Coast. Rarity/Uniqueness Value: Low.
	Contextual Value	Any archaeological sites within the proposed development area would primarily be of local significance. Shell midden sites are the most common archaeological site type identified in the NZ archaeological record. However, when considered on a regional scale, a group of sites can provide significant information on the past settlement, economy, and environment of that region, in this case the Kāpiti Coast. Contextual Value: Moderate.
	Information Potential	Shell midden sites are effectively rubbish dumps and are the most likely archaeological site types that will be found in the proposed subdivision area. Kāpiti Coast middens typically have moderate scientific values, providing information on site type, nature, location, extent, relationship with environment, how that environment may have changed, relationship with other sites and age. There is some potential for high scientific value middens. Information Potential: Moderate.
	Amenity Value	Visually the type of archaeological sites that will be located within the proposed subdivision area are not impressive or distinctive. Archaeological sites are currently not visible to the public and, if present, are located on private land. Any archaeological sites identified during development are likely to be destroyed or significantly modified. Amenity value: Low.
	Cultural Associations	Archaeological sites will hold Māori cultural values.

8 Assessment of Effects

A total of 21 archaeological sites have been recorded within the proposed Project Area, and there is robust data on Kāpiti Coast archaeological site distribution to predict a high probability of further archaeological sites being exposed during earthworks in the hilly sand dune landscape. The low-lying flat (probable former wetland) areas have a lower probability of containing archaeological features. Archaeological sites will most likely be associated with pre-European Māori use of the landscape and will probably be almost exclusively middens and fire hearths. There is also potential for the discovery of kōiwi (human burials).

Unrecorded archaeological features are most likely to be below the ground surface but within the upper 1m of soil in the area, thus any excavation into the dune ridges has the potential to adversely impact unrecorded archaeological sites.

An overlay of the recorded archaeological sites on the cut/fill earthworks plan shows that many of the archaeological sites that have been previously recorded are within the planned cut earthworks areas (Figure 20). Table 3 below outlines the probable impact of the earthworks on each recorded site, and whether there is potential for the sites to be protected. A total of seven sites are situated within areas with minimal or no planned earthworks, and may be able to be protected from adverse effects.

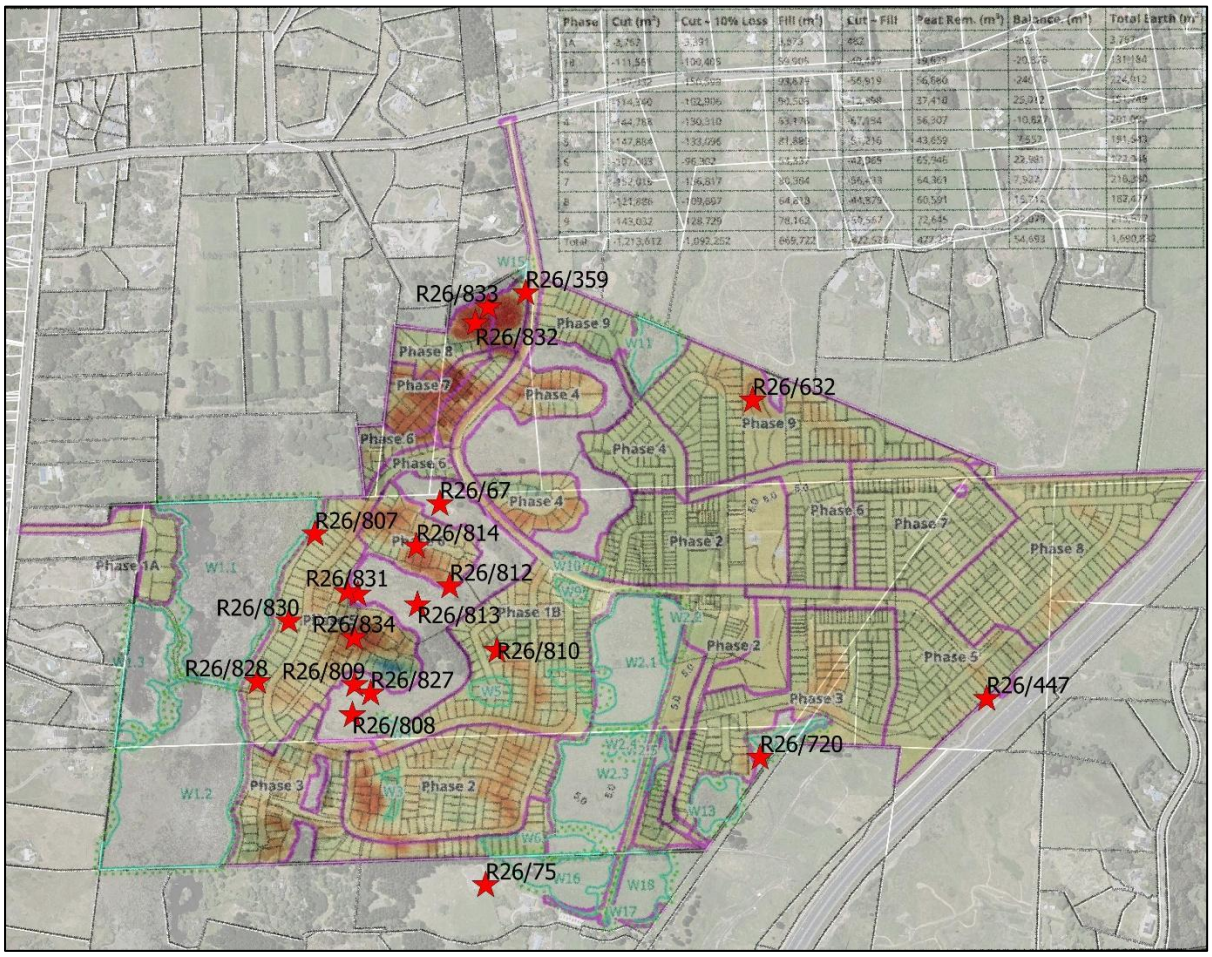

Figure 20: Overlay of the earthworks plan showing recorded archaeological sites within the proposed Project Area.

Table 3: Effects on individual recorded archaeological sites.

Site Record Number	Easting	Northing	Site Type	Effect	Able to be protected?
R26/66	1773647	5476777	Midden	Within retained dune landscape, although very close to boundary of cut.	Possibly
R26/67	1773865	5476847	Midden	Within retained dune landscape.	Possibly
R26/75	1773582	5476185	Midden	Outside cut earthworks area.	Yes
R26/359	1774202	5477109	Midden	Within cut earthworks area.	No
R26/447	1774570	5476018	Terrace	Located on boundary. Investigated as part of M2PP. Remainder within neutral cut earthworks area.	Possibly
R26/632	1774470	5476722	Midden and platform	Within cut earthworks area.	No
R26/720	1774147	5476135	Midden	Has been destroyed, so no effect.	N/A
R26/807	1773634	5476915	Midden	Within cut earthworks area.	No
R26/808	1773525	5476586	Midden	Within retained dune landscape.	Possibly
R26/809	1773557	5476633	Midden	Within retained dune landscape.	Possibly
R26/810	1773820	5476555	Midden	Within cut earthworks area.	No
R26/812	1773804	5476704	Midden	Within cut earthworks area.	No
R26/813	1773734	5476704	Midden	Within retained dune landscape.	Possibly
R26/814	1773787	5476800	Pits	Within cut earthworks area.	No
R26/827	1773575	5476604	Midden	Within retained dune landscape.	Possibly
R26/828	1773402	5476729	Midden	Within cut earthworks area.	No
R26/830	1773510	5476798	Midden	Within cut earthworks area.	No
R26/831	1773632	5476791	Midden	Has been investigated previously. Within cut earthworks area.	No
R26/832	1774092	5477107	Midden	Within cut earthworks area.	No
R26/833	1774128	5477121	Midden	Within cut earthworks area.	No
R26/834	1773600	5476710	Midden	Within cut earthworks area.	No

8.1 Minimisation Options

It will not be possible to avoid many of the recorded archaeological sites, or any previously unrecorded sites within the Project Area where cut earthworks are planned. The sites are largely located around the crests and ridges of the sand hills where the most substantial cut earthworks are planned. A small number of sites are situated within the retained sand dune landscape and areas of minimal or no cut earthworks, and these sites may be able to be protected from adverse effects.

Archaeological monitoring of the cut earthworks within the hilly sand dune areas of the proposed subdivision would allow for the capture and recording of archaeological features when they are exposed. This includes topsoil removal, site recontouring, access track formation and any other excavations that will disturb the ground in this area.

There is a legal requirement under the *Heritage New Zealand Pouhere Taonga Act* 2014 to seek an archaeological authority from HNZPT for any works that will modify, damage or destroy an archaeological site.

9 Conclusions and Recommendations

This Archaeological Assessment of Effects has been prepared for Waikanae North Developments Ltd for the proposed subdivision of the property at 169 Peka Peka Road, Waikanae.

The Project Area is situated within the Kāpiti dune belt which is a landscape comprising rolling dunes and intermediate wetlands that was used by people as a food and resource gathering area, and for seasonal /temporary occupation where shellfish was processed for travel and storage. These sand dunes are strongly correlated with a high density of midden sites throughout the Kāpiti Coast. The proposed Project Area contains both sand dune ridges and low former wetland areas.

There is a total of 21 recorded archaeological sites within the proposed Project Area. In addition to the sites within the proposal property there are several archaeological sites that have been recorded in the landscape nearby, including within the neighbouring expressway corridor. The archaeological sites recorded in the Project Area are almost all shell middens.

Earthworks required to develop the land will adversely affect both recorded archaeological sites and unrecorded subsurface archaeological features. The property has not previously been developed, with the exception of minor farming activities, and it is likely that any archaeological sites present will mostly be in good condition and will be able to contribute information about the human history of the area through archaeological recording and analysis. The sites recorded within the Project Area are almost all shell middens, these site types have been recorded and investigated across numerous locations along the Kāpiti Coast, and typically hold moderate to low archaeological values.

9.1 Recommendations

The following recommendations are made in this report:

5. An Archaeological Authority should be sought from HNZPT to cover the earthworks for the entirety of the proposed Project Area.
6. All cut earthworks for the proposed subdivision that may affect archaeological sites must be monitored by an archaeologist.
7. All archaeological sites that are uncovered must be recorded by an archaeologist. Samples may need to be taken for analysis and radiocarbon dating.
8. Archaeological sites that are uncovered during the works will hold Māori cultural values, and tangata whenua need to be consulted with regarding the Archaeological Authority application and this assessment report.

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