Archaeological Assessment of Effects:
Awanui Flood Scheme Project

30 November 2019

Commissioned by:

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Executive Summary

Planned works for the 2019/20 season for the Awanui Flood Scheme will be undertaken at three sites, one of which (Sports Hub) has a recorded archaeological site on it and will require an authority from Heritage New Zealand Pouhere Taonga prior to works commencing. The other two sites (Juken and Allen Bell Park) have been assessed as having very low archaeological potential. Therefore, it is recommended that works can proceed on these two sites prior to the issuing of an authority with the initial topsoil stripping monitored by an archaeologist and kaitiaki with the subsequent earthworks monitored by a kaitiaki. However, if archaeological deposits are discovered during earthworks then work must halt until the authority is issued and active - the authority is being sought for all three sites.

Quality Information

Document: Archaeological Assessment of Effects: Awanui Flood Scheme Upgrade
Ref: 2019-123
Date: 20 August 2020
Prepared by: Russell Gibb

Revision History

Revision	Revision Date	Details	Authorized Name
Draft	19 September 2019	Draft	Gibb
Revisions	23 September 2019	Minor edits	Gibb
Issued	30 November 2019	Client Issue	Gibb
Updated	20 February 2020	Fixed typos	Gibb

File ref.: 2019_122/NRC/Awanui Flood Scheme Upgrade

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1.0 Introduction

Geometria have been engaged by Joseph Camuso from Northland Regional Council (NRC) to undertake an archaeological assessment of effects for the Awanui Flood Scheme Project in advance of a Resource Consent application for the proposed works. The Awanui Flood Scheme was built progressively over the last century and includes spillways, benched terraces, stop banks and other flood mitigation measures. The scheme is designed to protect Kaitaia from the 1:30 year annual recurrence interval (ARI)[1] event along the Tarawhataroa Stream, and approximately the 1:100 year ARI along the Awanui River. The objective of the upgrade project is to increase the level of flood protection for Kaitaia to a 1:100 year ARI on the Awanui River and Tarawhataroa Stream. To achieve this, Awanui overflow to the Tarawhataroa stream will be reduced, and more flood flow will be retained in the Awanui River.

The project area extends from north of Awanui to the southern end of Kaitaia; an area of significance to tangata whenua and also an area with an important European history. This area has undergone significant changes with the development of flood prevention measures along the major waterways dating from the 1800s. It is also a highly dynamic geomorphological landscape.

Under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014; previously the Historic Places Act 1993, HPA 1993), all archaeological sites are protected from any modification, damage or destruction except by the authority of Heritage New Zealand Pouhere Taonga (HNZPT).

This report does not seek to locate or identify wahi tapu or other places of cultural or spiritual significance to Maori. Such assessments may only be made by Tangata Whenua who may be approached independently of this report for advice.

1.1 Location

The Awanui Flood Scheme Project encompasses an area of rivers, creeks and spillways from north of Awanui to the southern end of Kaitaia (Figure 1). Specifically, the flood prevention works will occur along the Awanui River, between Larmer Road and the SH1 (Waikuruki) bridge, and along the Whangatane Spillway, from Donald Lane to the Pairatahi River (Figure 2).

Figure 1: Location of the project area (dashed line). Source: Google Earth 2019.

[1] ARI - the average number of years that it is predicted will pass before an event of a given magnitude occurs.

2.0 Statutory Requirements

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). Any person who intends carrying out work that may modify or destroy an archaeological site, must first obtain an authority from Heritage New Zealand. The process applies to sites on land of all tenure including public, private and designated land. The HNZPTA contains penalties for unauthorised site damage or destruction. The archaeological authority process applies to all archaeological sites, regardless of whether:

- The site is recorded in the NZ Archaeological Association Site Recording Scheme or included in the Heritage New Zealand List,
- The site only becomes known about as a result of ground disturbance, and/ or,
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.

2.1 The Heritage New Zealand Pouhere Taonga Act 2014

Under the HNZPTA all archaeological sites are protected from any modification, damage or destruction. Section 6 of the HNZPTA defines an archaeological site as:

> " 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)"

To be protected under the HNZPTA an archaeological site must have physical remains that pre-date 1900 and that can be investigated by scientific archaeological techniques. Sites from 1900 or post-1900 can be declared archaeological under section 43(1) of the Act.

If a development is likely to impact on an archaeological site, an authority to modify or destroy this site can be sought from the local Heritage New Zealand Pouhere Taonga office under section 44 of the Act. Where damage or destruction of archaeological sites is to occur, Heritage New Zealand usually requires mitigation. Penalties for modifying a site without an authority include fines of up to $300,000 for destruction of a site.

Most archaeological evidence consists of sub-surface remains and is often not visible on the ground. Indications of an archaeological site are often very subtle and hard to distinguish on the ground surface. Sub-surface excavations on a suspected archaeological site can only take place with an authority issued under Section 56 of the HNZPTA issued by the Heritage New Zealand.

2.2 The Resource Management Act 1991

Archaeological sites and other historic heritage may also be considered under the Resource Management Act 1991 (RMA). The RMA establishes (under Part 2) in the Act's purpose (Section 5) the matters of national importance (Section 6), and other matters (Section 7) and all decisions by a Council are subject to these provisions. Sections 6e and 6f identify historic heritage (which includes archaeological sites) and Maori heritage as matters of national importance.

Councils have a responsibility to recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga (Section 6e). Councils' also have the statutory responsibility to recognise and provide for the protection of historic heritage from

inappropriate subdivision, use and development within the context of sustainable management (Section 6f). Responsibilities for managing adverse effects on heritage arise as part of policy and plan preparation and the resource consent processes.

3.0 Proposed Development

The majority of the works will consist of high level spillways designed to reduce overflow into the Tarawhaturoa Stream immediately to the south of Kaitaia; river bank stabilisation (rock spall toe protection); stopbank topping up and stopbank setting back to create a wider floodway. These works are planned along the Awanui River, between Larmer Road and the SH1 (Waikuruki) bridge, and along the Whangatane spillway, from Donald Lane to the Pairatahi River (Figure 2). The planned works will be staged over several years with the Te Hiku Sports Hub Spillway, Allen Bell Park Channel Improvements and Juken Spillway works planned for the 2019/20 season (Figure 3 - Figure 5).

Figure 2: The extent of the Awanui Flood Scheme Project. Source: Google Earth 2019.

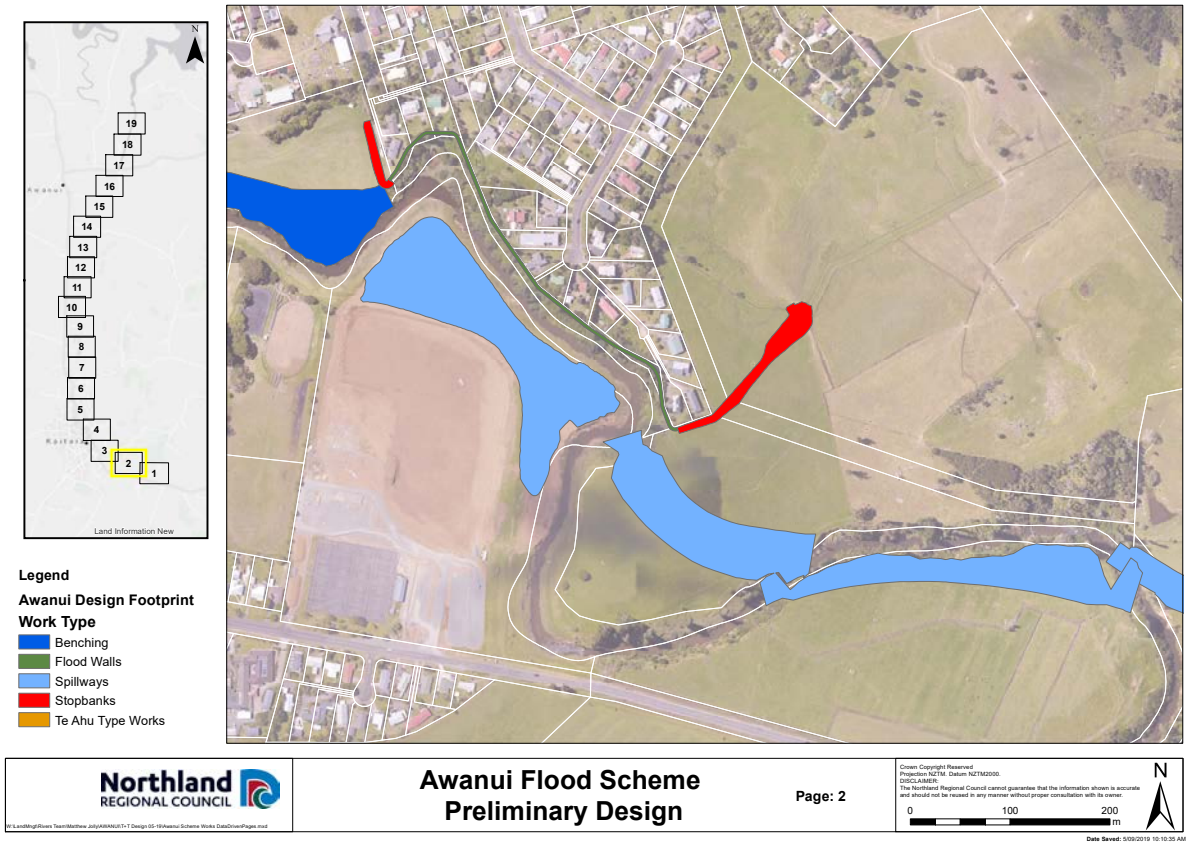

Figure 3: Te Hiku Sports Hub Spillway. Source: NRC 2019.

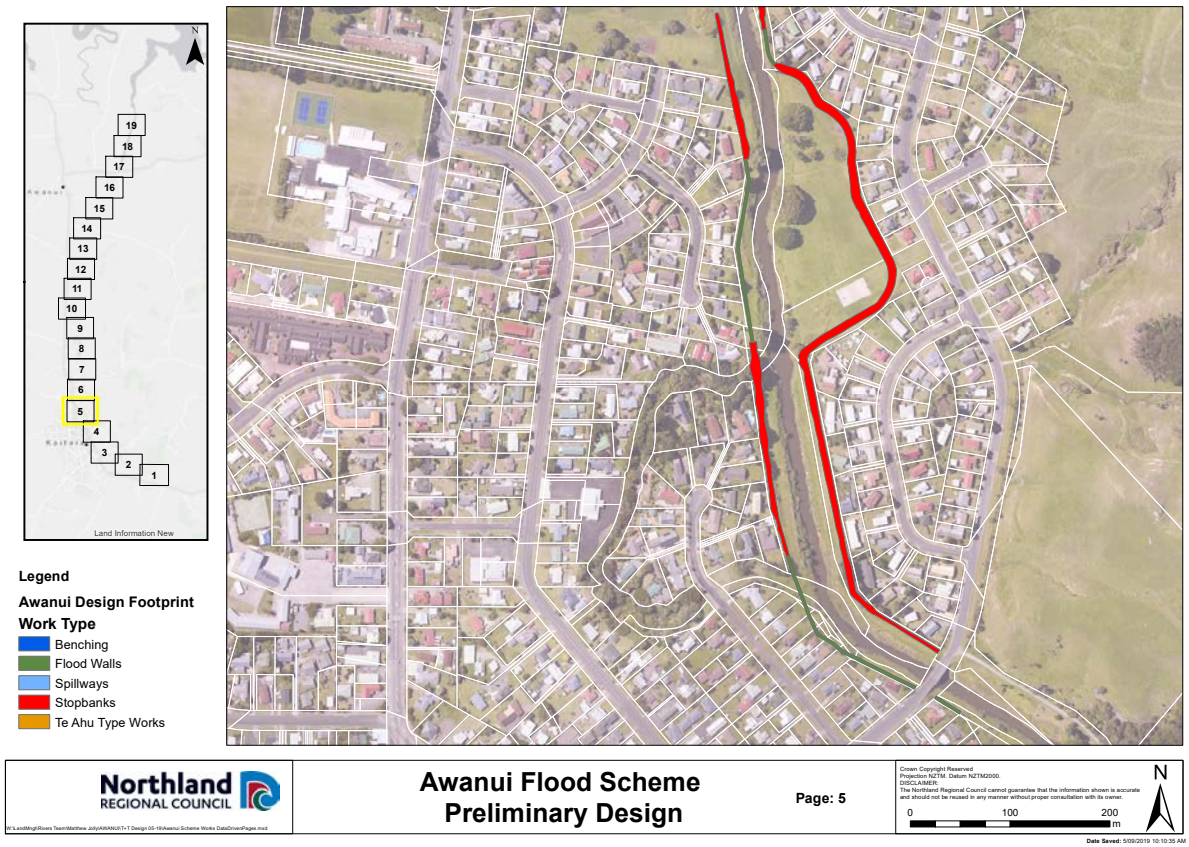

Figure 4: Allen Bell Park Channel Improvements. Source: NRC 2019.

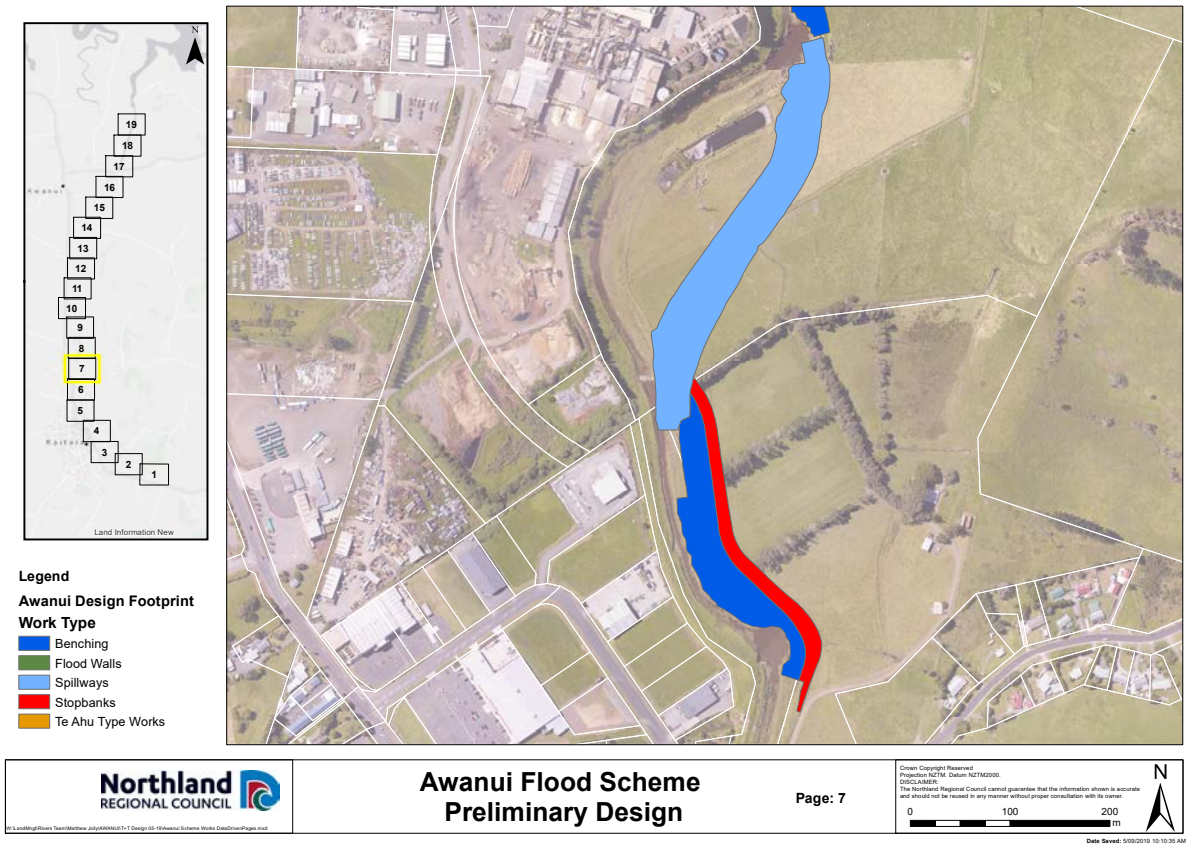

Figure 5: Juken Spillway. Source: NRC 2019.

4.0 Methodology

The methods used to assess the presence and state of archaeological remains within the proposed subdivision included both a desktop review and a site survey. The desktop survey involved an investigation of written records relating to the history of the specific areas. These included regional archaeological publications and unpublished reports, Te Ahu archives, New Zealand Archaeological Association Site Record Files (NZAA SRF) downloaded via the ArchSite website (www.archsite.org.nz), local histories, aerial photography, local authority heritage lists, the Heritage New Zealand Pouhere Taonga List and land plans held by Land Information New Zealand and Quickmap.

Russell Gibb of Geometria Ltd. conducted site surveys over several days during August and September 2019.

5.0 Background

5.1 Environment

The Awanui River and its major tributaries, Te Puhi Stream, Victoria River and Takahue River have their headwaters on the northern slopes of the Maungataniwha Range, south of Kaitaia. Geologically, the Maungataniwha Range and the range of hills behind Pukepoto, due south of Kaitaia, are formed from Tangihua volcanics, a complex of several basic volcanic rocks of submarine origin, and accompanying sedimentary material carried into Northland in the Northland allochthon. Flow from these rivers enters narrow floodplains towards the northwest before spreading out onto an extensive floodplain between Kaitaia and where the river discharges to the sea in Rangaunu Harbour.[2]

[2] Northland Regional Council 2005.

When the Awanui River emerges from the narrow gap in the hills south of Kaitaia, it deposits sediment, causing it to meander and build an alluvial fan that extends north and west from the middle of Kaitaia. Historically, the river has occupied a number of different channels as it built up sediment to such a level that the river was perched well above the surrounding land, allowing it to meander and cut a new channel away from the built-up land. Over time the river has migrated from the foot of the hills, along the line of the Whangatane Channel but due north through Awanui, around to its present position, leaving behind a number of abandoned channels[3]. A large peat basin has developed between the river and the western dunes with Lake Tangonge occupying the lowest part of the basin.[4]

5.2 Traditional History

Te Rawara, Ngāti Kahu and Ngai Takoto all have traditional ties to the area encompassed by the Awanui Flood Scheme project.

Te Rarawa whose territory runs from the northern shores of the Hokianga harbour across to the Mangamuka River, north through Maungataniwha, and thence to Ngapae along Te Oneroa a Tohe, includes Kaitaia and interests in Awanui/Rangaunu, as well as all the land in between. Te Rarawa has an important historical relationship with Ngati Kahu in the east where Te Rarawa territory and influence once included the area now regarded as belonging to Ngati Kahu[5]. Te Patu - a hapu of Te Rawara - were present in the the Kaitaia and Victoria valley districts. Panakareao was the influential leader of Te Patu hapu of Te Rarawa during early 1800s who offered land at Kaitaia to the Church Missionary Society (C.M.S) in 1832. Known to pakeha as Noble or Nōpera, Panakareao was sometimes called Tuwhare by his own people.[6] The hapu and chiefs in the area at the time were listed in an 1861 Government census,[7] with Kaitaia occupied by Te Patu and Hohepa, Poutama and Rawihi Tiro named as the chiefs.

Pre-treaty transactions with Te Rarawa were mostly conducted with missionaries and other people associated with the Church Missionary Society in the area around Kaitaia, and generally involved the most fertile land and most accessible areas of land for the export of timber. They provided land, protection, food, and timber and thatching for house building, as well as a labour force for construction, for clearing land and rivers, and for making roads. After the Kaitaia Mission Station was established, Te Rawara grew wheat and other crops and transported these to the Auckland market via the Awanui River and the coastal shipping route.[8]

Ngati Kahu also claim the area as part of their rohe which extends from the Maungataniwha range and all the lands to the north and east of the range including the settlements with their associated marae of Waiaua, Hīhī, Kēnana, Kohumaru, Aputerewa, Mangōnui, Koekoeā (Coopers beach), Waipapa (Cable Bay), Taipā, Te Āhua, Pēria, Parapara, Aurere, Lake Ōhia, Rangiputa, Whatuwhiwhi, Karikari, Mērita, Kāingaroa, Karepōnia, Oinu, Ōpoka, Ōturu, Kaitāia, Ōkahu, Tangonge, Waipapakauri, Takahue, Pāmapūria, Mangataiore (Victoria Valley) and all areas between. They also view themselves as having authority over the sea territories of the Mangōnui and Rangaunu harbours.[9] Ngāti Kahu and their northern neighbours, Ngāti Kurī, had dwelt with Te Rarawa in the district for some decades before Nōpera Panakareao invited C.M.S. missionaries into the area[10]

NgāiTakoto's area of interest runs from Cape Reinga (Te Rerenga Wairua) to Kaitaia and Ahipara in the south and includes the Three Kings (Manawatawhi) and Kermadec Islands. Prior to the arrival of Europeans, NgāiTakoto were largely based around pa and kainga in Kapowairua, Parengarenga, Houhora, Waimononi, Kaitaia, and Te Make where they utilised the vast resources of local waterways and coastal areas for food gathering and passage.[11] Waimanoni with its proximity to kaimoana, waterways for canoe traffic, and fertile

[3] The local name for these is munga.
[4] Ibid.
[5] Te Uira Associates 2004:20
[6] https://teara.govt.nz/en/biographies/1p3/pana-kareao-nopera
[7] AJHR 1862, E-7, p22-24
[8] https://teara.govt.nz/en/northland-places
[9] Te Runanga A Iwi O Ngati Kahu 2008
[10] https://teara.govt.nz/en/northland-places
[11] OTS 2012

gardens was favoured and the Awanui River provided important resources to sustain NgāiTakoto communities in the area. NgāiTakoto, like other Te Hiku iwi, were highly mobile. NgāiTakoto defined its rohe, its pa, papakainga, gardens, urupa, fishing villages and other resources, by maintaining its relationships with other iwi through whakapapa, marriages and other alliances.[12]

When European's arrived at Kaitaia in the 1800s, the name of the general area was known as Te Ahu by the Maori inhabitants. The stretch of the Awanui River where the C.M.S mission station would later be established, and where the Te Ahu museum facility is presently located, was known as Te Ika Hunuhunu. In pre-colonial times, it was a meeting place, a site of the coming together of people from different whānau and hapū.[13] The adaptation of the name Kaitaia to the area is attributed by some to the C.M.S missionaries.[14]

The area was well-suited for settlement with easy access via rivers and creeks to the coast and the vast kai moana resources found there. The local creeks and swampy waterways provided eels (tuna), freshwater crayfish (koura/kewai) and freshwater fish such as kokopu.[15] Canals were cut into the sides of rivers and lakes to catch ducks and trap eels. The interior offered vast wooded areas with a bountiful supply of avifauna, while the soils of the flat alluvial lands north of Kaitaia to the Rangaunu Harbour were used for cultivation, sometimes requiring the development of extensive drainage systems.

The archaeological record, oral traditions and early ethnographic accounts of the area attest to a long history of traditional occupation and resource utilsation. During the 1830s, reports from the area were furnished by the missionaries established at the Kaitaia Mission Station to their superiors at the C.M.S. These described general observations of mission life and progress being made at the mission station, and detailed interactions and transactions with the local Maori population, and the uptake and expansion of Christianity amongst them.

One of the more detailed accounts relating to the Awanui River area was written by the German geologist Ernst Dieffenbach who travelled up the Awanui River from Rangaunu Harbour in 1841. Navigating the river in a small boat to the Kaitaia Mission Station he described his journey and observations:[16]

> At first we passed swamps covered with mangroves, sometimes only showing their heads above water, and affording shelter to flights of ducks and other aquatic birds. When the banks became higher, the land is perfectly level; the soil, as seen by the section of the river banks, is in some places a stiff black loam, in others a lighter earth, to all appearances admirably adapted for grain. The country is perfectly open in many places, and only covered with tupakihi (Coriara sarmentosa), fern, high flax, and here and there are some spots of grass….
>
> The higher we went, the more agreeable was the scene. On the shore were native settlements, with long seines hanging out to dry, and many natives at work mending canoes and their fishing apparatus, for the season is approaching when the shark is caught in great numbers. Here and there fields of potatoes, kumeras, melons and pumpkins, neatly fenced, and kept extremely clean, show all the vigour of vegetation for which New Zealand is so remarkable. The setting sun threw a stream of gold over the western horizon, which caused the mountains to stand out in sharp relief against the sky, and made them appear almost of an indigo colour. Early in the evening we arrived at Southee's farm; it is situated on both banks of the river, which here forms by its serpentine course several natural paddocks. The maize growing ten or twelve feet high, and the fields of yellow wheat, bowing under the weight of grain, showed what the land is capable of producing. Cattle were grazing about, and the well-stocked farmyard bore testimony to an industry such as is very rarely met with amongst the numerous settlers ….
>
> Mr Southee has about 300 natives around him in his immediate neighbourhood, who cultivate bits of land interspersed withhis own, and who, for cheap wages, work with him in various branches of husbandry, and thus procure for themselves those European commodities for which they have acquired a taste. He gives articles to the value of £2 for every acre they clear. The mode which he adopts in clearing the land is to cut down all brushwood and vegetation in summer, and burn it when it becomes

[12] Te Runanga O NgāiTakoto n.d.
[13] Bell 2016:29-30
[14] *Northland Age* 16 March 1934.
[15] Hongi 1922:1
[16] Dieffenbach 1843:213-215

> dry. Immediately after this he sows the ground with turnips, and when these have been gathered, with potatoes, which require only a little hoeing. The roots and stumps are then sufficiently rotten, and the ground can be easily tilled and prepared for grain.
>
> From Mr Southee's the river turns, with many windings, towards the western coast. Higher up its course it acquires greater fall, and in many plac, is obstructed by snags. Its banks are of the same good description, and are here and there clothed with groves of kahikatea, rimu, and totara, or of tarairi (Laurus tarairi) and puriri, until it arrives at Kaitaia. A mission-station and native settlement is situated about eight miles from the western coast, on a hilly eminence, an offset of the chain of hills which run from this point through the interior.

On this trip, Dieffenbach noted that; "the natives are from the tribe of Rarawa, and their whole number is about 8000, including all of those who inhabit the valley of the Awaroa" [17] and that; "the natives lived originally at the Hokianga, but about twenty-five years ago they took Kaitaia from the Haupouri and Nga-te-kuri, who must have been very numerous judging from the remains of their pas on the neigbouring hills."

When the missionaries first arrived to establish the Kaitaia Mission Station, the population of Te Ahu was reported as "about 40 men, woman and children" with signs that the area had until recently supported a very large population. The site was situated within a ring of pa sites, some of which had the remains of palisades still standing. Old cultivations were still evident on the flats and kukura pits evodent on the hills.[18]

An 1852 chart of the Rangaunu Harbour titled 'Rangaounou or Awanui River' surveyed the Awanui River from the harbour to Southey's farm and shows a kainga called 'Tiki-kaie-raro' with three whare and cultivations on the west bank of the river and more cultivations and two whare a little further upriver on the east bank (). The area west of the river is attributed to 'Ngai Takato Tribe' and 'Ratu Koraha or Kai Tote Tribe' on the east side. Southey's farm 'Taipo' that Dieffenbach visited is shown further upriver, located before present day Awanui (Figure 7).

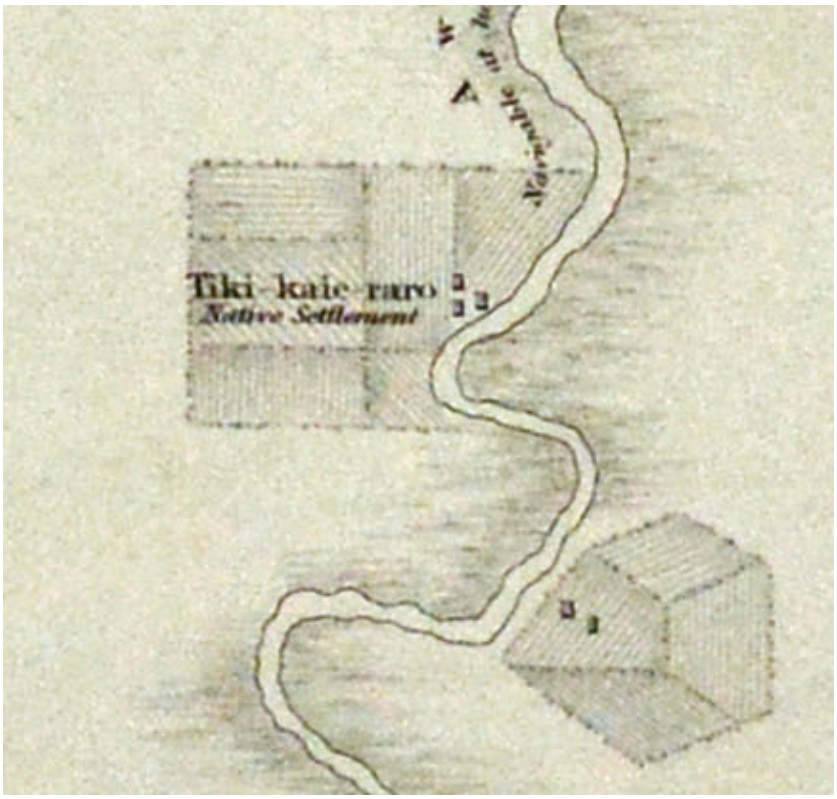

Figure 6: Inset from admiralty chart "Rangaounou or Awanui River' showing the NgaiTakoto settlement of Tiki-kaie-raro.

[17] Ibid1843:216
[18] *Northland Age* 16 March 1934

Figure 7: Section from admiralty chart "Rangaounou or Awanui River" showing the lower Awanui River overlaid on a 2019 aerial. There is some

R. H. Mathews, a descendent of Rev. Mathews discussed Maori living in the area in 1869 noting that few were living in immediate vicinity of the Kaitaia Mission Station, but "…many were living at Te Kani overlooking Raetoea; on the upper part of the Raetoea where the Tamaki's hapu lived; and at Moerua, across the river from [the] Parsonage, where Jerimiah and others lived – their cultivations extending on the river for miles."[19]

Hare Hongi, who resided in the area during the 1870s, described the local area at that time:

> Just above the station was the fine Maori village of Rangitahi (Sky-pinnacle). Then followed successive villages up the river, to that of Pamapuria (Pompellier, after the bishop), in the upper Victoria Valley. From Kaitaia upwards there were cultivations of the past and in use, pretty well all along the river sides. Perhaps the most extensive were about Pamapuria. There were large plots of Kumara, taro, uwhi (the winter potato), hue, pumpkin, marrows and melons. There were row upon row of sugar-cane (to huka). Bundles of these were carried on a journey, and chewed along the road. Every plantation had its field of corn, for the Maori relished its long and tender ears. There was music too, in the rustling of the leaves.[20]

Hongi also recalled a village at Pukepoto where the chief was Te Puhipi/Busby, and another at Ahipara where Hupata Te Kaka wasthe chief, and at Kareponia where the chief was Timity Popata.[21]

[19] Mathews 1869:2
[20] Hongi 1922:1-2
[21] Ibid pp1-2

5.3 Kaitaia Mission Station

In November 1832, William Williams, W. G. Puckey and others of the C.M.S set out on an exploratory trip to investigate potential areas to establish a new mission station to expand their operations. They met the prominent chief of the area, Nopera Panakareao at his residence at Rangaunu on 30 November. He accompanied them to visit his father Te Kaka at Kaitaia. After Panakareao offered to clear the Awanui River, and pointed out suitable land for the missionaries to occupy, they decided to fix the new mission at Kaitaia. By successfully attracting the C.M.S missionaries to Kaitaia, Panakareao out-manoeuvred Papahia and other Te Rarawa leaders at Whangape and Waro.[22] The purchase price was 80 blankets, 70 axes, 30 iron ppots, 30 hoes, 40 plane irons, 30 pair scissors, 30 combs, 10 shark hooks, 2000 fish hooks of various sizes, and 50lbs of tobacco.[23]

Joseph Mathews and William Puckey were appointed to the Kaitaia Mission Station and took up residence in 1833 with Mathews arriving first, later joined the next year by Puckey, with the official date of the establishment of the station recorded as 14th March 1834, Puckey's day of arrival. Panakareao afforded protection over the station until his death in 1856.

The boundary of the C.M.S. station was set from points between pa sites. A plan of boundary markers shows the five pa that formed the boundary naming these as: Kerikeri, Te Aute, Te Tiki Aitiaki, Tinotino and Pukemiro (Figure 8). The C.M.S purchase was formalised in OLC 242 (1856), which also shows the boundary names for the block and shows buildings and other structures established at the mission station by that time (Figure 9).

Mathews first built a raupo church followed by a three-roomed raupo whare to reside in until he could manage to build a wooden cottage. The mission station gradually expanded to include a number of buildings such as a hospital, blacksmiths shop, mill, school and large vegetable gardens. By 1847, large acreages of crops were being harvested, traded and transported on ships that had navigated up the Awanui River. An ca.1839 drawing by Taylor shows the early station with the wooden church, Mathews' and Puckey's houses and numerous whare established on the site (Figure 10).

On the 28th April, 1840, 500 local Māori gathered outside William Puckey's house at the station to debate Te Tiriti o Waitangi and eventually sixty principal chiefs of the north gathered and signed the treaty following a speech by Nopera Pana-kareao. In the ensuing years, the mission station continued to be a meeting place between the missionaries and Maori and was often used by Government officials to conduct official business and meet with local Maori (Figure 11).

Bell[24] notes that at the time of the establishment of the mission station and in the ensuing decades, Maori understood that they continued to exercise their own rights over this land and shared the land with the newcomers to their mutual advantage. They continued to live on and use the land alongside the missionaries for at least another 25 years and probably longer, with fighting chiefs Rawiri Tiro and Kepa Waha placed in residence to protect the missionaries.[25]

The role of the mission station began to decline during the 1860s when many of the local inhabitants of the area (Maori and pakeha) began moving afield to work the gum fields. During this decade, the granary at the station was pulled down and less wheat was being ground. In the early 1880s the church tower was pulled down and in 1884 the Mathews' house burnt down.

Around 1885 the CMS began subdividing their mission station estate and began selling off land (Figure 12). Four acres was donated as a site for a school which was built in 1887. The Anglican Vicarage (built 1885) was removed in 1975, leaving the historic totara tree planted by the Rev. J. Mathews as the last tangible evidence of the original CMA station.

[22] https://teara.govt.nz/en/biographies/1p3/pana-kareao-nopera
[23] *Northland Age* 16 March 1934
[24] Bell 2016:33
[25] Waitangi Tribunal 1997:66

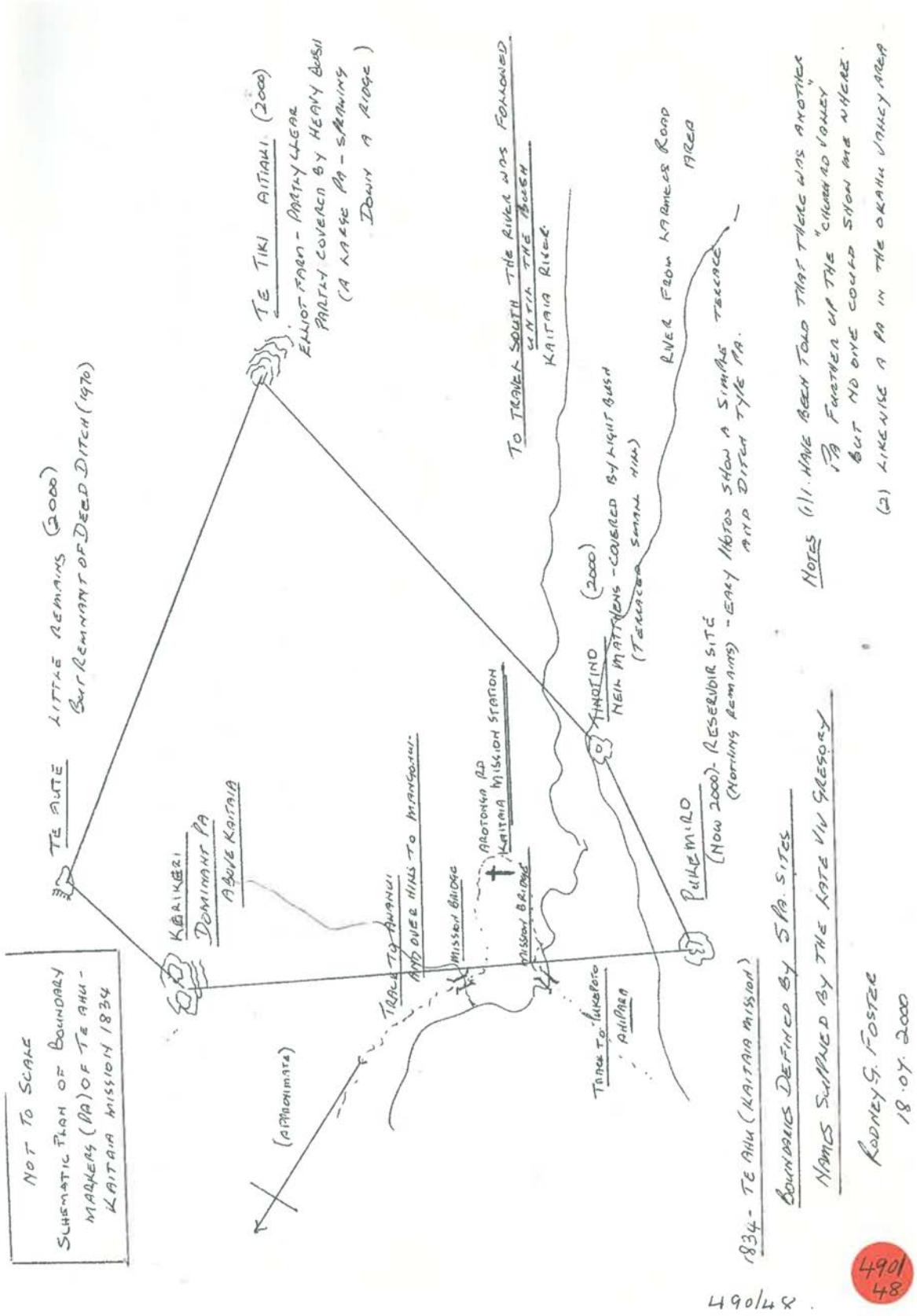

Figure 8: Plan of boundary markers of the C.M.S. mission station at Kaitiaia, drawn by R. Foster, 2000. Source: Te Ahu Heritage Museum & Archives.

Figure 9: OLC 242 (1856) showing the C.M.S. purchase 'Church Missionary Station at Kaitaia – Claim No. 2992.' Source: Quickmap 2019.

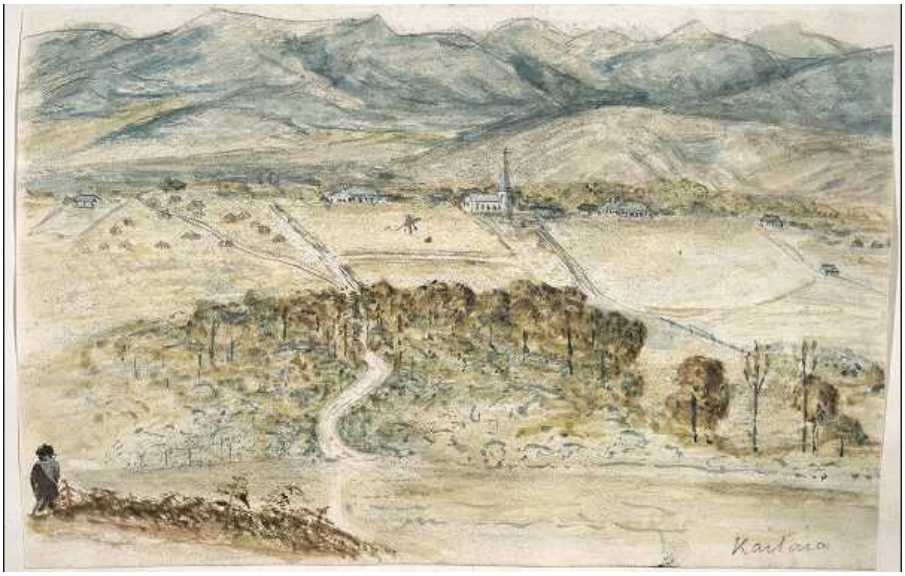

Figure 10: Looking down at the church and scattered houses of Kaitaia in its setting on rolling countryside amidst hills. Ref: Taylor, Richard, 1805-1873. Kaitaia. [1839?]. Ref: E-296-q-173-2. Alexander Turnbull Library, Wellington, New Zealand. /records/22844726

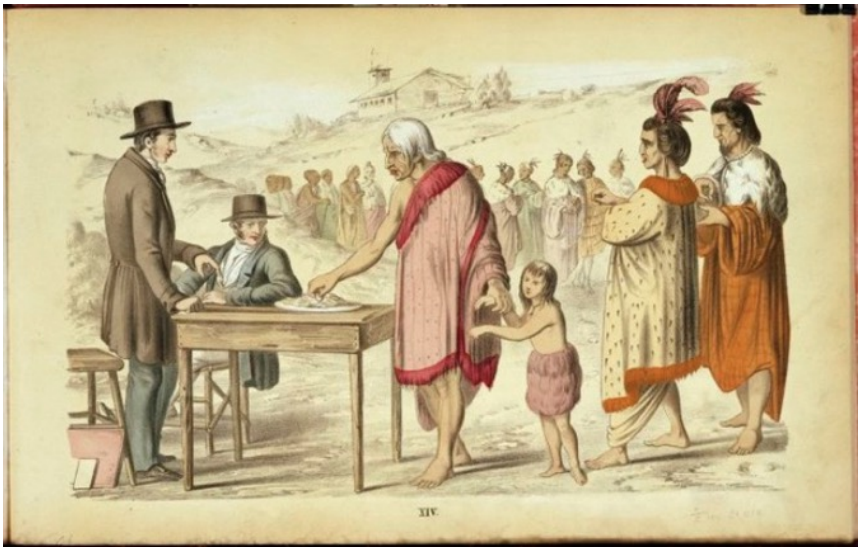

Figure 11: Shows Veili, a white-haired Maori chief, placing a coin in a collection basket on a table, while Rev William Puckey and Rev Joseph Matthews look on. Veili holds a small child by the hand, and chief Pana-kareao and his wife stand in the right foreground, while a large group of Maori talk together in the background. The mission station at Kaitaia is on a slope in the background. Source: Artist unknown: Missionary meeting. [1856]. Ref: PUBL-0151-2-014. Alexander Turnbull Library, Wellington, New Zealand. /records/23010860

Figure 12: Cochrane and Sons 1885 auction for section on the Church Missionary Society property.

A sketch plan by F.H.S Mathews show the buildings and associated curtilage at the mission station built from 1837 to 1863 (Figure 13-Figure 14).[26] An index to the maps that describes the buildings and areas is shown in Table 1.

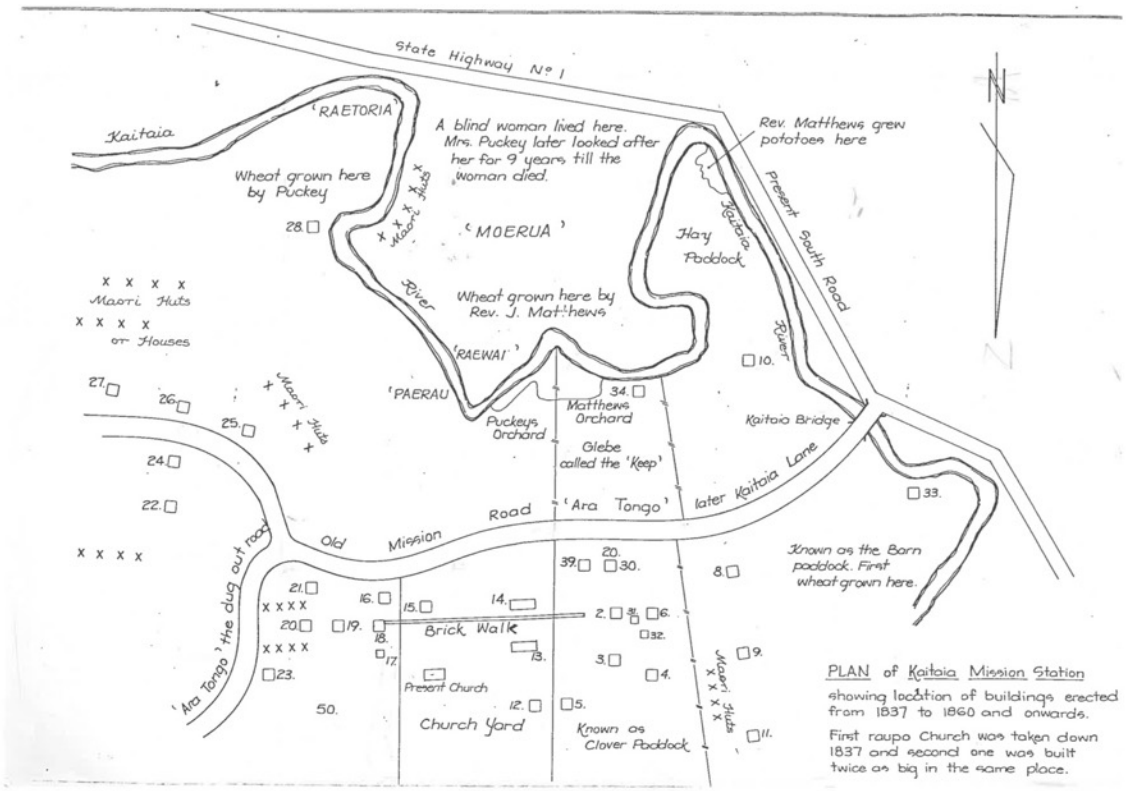

Figure 13: Plan of Kaitaia Mission Station. Source: Te Ahu Heritage Museum & Archives.

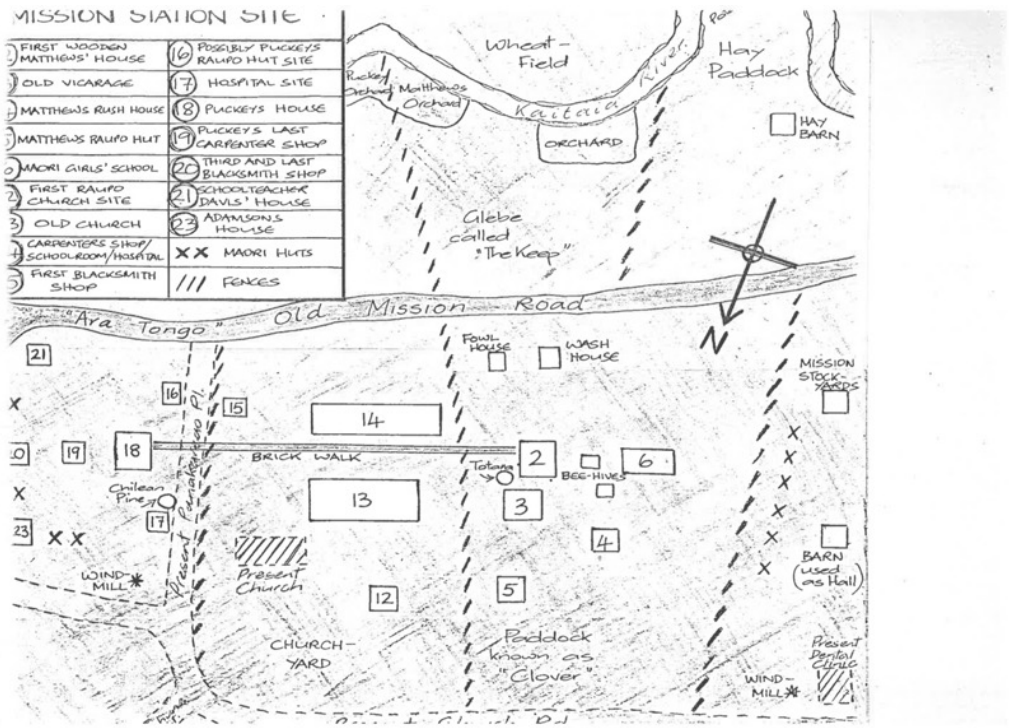

Figure 14: Mission Station site map and legend. Source: Te Ahu Heritage Museum & Archives.

[26] There is some degree of misalignment between the two plans and location of structures.

Table 1: Index to plans of the Kaitaia Mission Station[27]

1. Marks the place where the Rev. J. Matthews reached the first sermon in Kaitaia. About 2 chains South from old A. & P. Hall site.
2. First wooden Mission house belonging to Rev. J. Matthews - burnt in 1884.
3. Present Vicarage built immediately in front of the house in the front flower garden.
4. Site of rush house of three rooms made by Rev. J Matthews as a home for his bride.
5. Site of rush hut Rev. J Matthews lived in before he was married. The first Mission house at Kaitaia.
6. Site of Mission School House for Maori girls. This was a weather board house, and in 1965 a brick oven was fitted in where the food was cooked for the wedding feast of R.J Herbert Matthews. Mrs. Rev. J. M. taught the Maori girls here to read and write etc. In its last stages, it was lived in by Maoris. Finally, it was taken down and put up at Grigg's Corner and used as the first Govt. school by Shannon.
7. A small bush just below from present school residence (due south) was used from very early times to place dead bodies in. The bones were afterwards buried in No. 10 site. This bush was destroyed in error by Billy Cotton who was to clear scrub and fern on side of the hill, and nearly cut down all of the bush when he was stopped.
8. Site of Mission Stockyards.
9. Barn built by Rev. J. Matthews to hold his wheat and hay etc. This is where early settlers used to hold dance, meetings etc. It was a weather board building.
10. Barn built to hold hay erected on the mound where the old A & P. hall stood. This had tea tree sides and nikau roof. A large shed. The mound on which it was built was a burial ground of great antiquity. When the land was sold to the Church Mission Station, the bones were dug up and re-buried in the churchyard.
11. Site of windmill belonging to Rev. J Matthews. He had a hand mill in his back yard.
12. Site of fist raupo Church. Nopera Panakareao is buried here.
13. Old church with its tower and steeple 60 ft. high.
14. A building about as large as old Church. First built as two carpenters' shops. One for Rev. J. Matthews, the other for Mr. Puckey. The part belonging to Mr. Puckey was afterwards fitted up as a schoolroom for the white Mission children. This was afterwards removed and made into the Mission cottage hospital.
15. Site of Puckey's first blacksmith's shop. When the old church was built, the noise of the anvil was annoying to the people in the Church, so Bishop Selwyn requested Puckey to move it, which he did.
19. Puckey's last carpenter's shop.
20. Puckey's third and last blacksmith's shop.
21. Site of house belonging to Jon Davis the school teacher.
22. House of Nopara Panakareao. Gov. Hobson had dinner here on May 15 - 1840.
25. Adamson's house.
24. John Broughton's house.
25. Ben Lever's house.
26. Ford's house, he was a tinsmith by trade.
27. Puckey's blacksmith's shop shifted here from Church. 2nd shop.
28. Puckey's barn, sides made of tea-tree, roof of nikau. Not very large.
29. Fowl-house in back yard.
30. Wash house in backyard.
31. Old bee house. xxxx marks Maori houses.
32. New bee house.
33. Where the Rev. J. M Mathews had a garden.
34. Orchard known as the loquat orchard, earlier known as the new orchard.
50. Site of Puckey's windmill.

The fence shown on West side of Matthews' Mission house was ditch and bank style with roots and rails on bank and stakes driven into ground to stop sheep and pigs.

[27] Te Ahu Archives: Copied by the late Mr. Harold Matthews daughter, Mrs. Ernest Elliot, Church Road.

5.4 European Settlement

Large areas of land were made available in Northland during the 1850s and 60s under the 'forty-acre system' which entitled an adult immigrant, who had paid their own fare from Britain, to a grant of forty acres. Further acreages were added on for the immigrant's wife and children who accompanied him, all at the upset price of ten shillings an acre. Conditions imposed on the grant included an undertaking to remain in the province and not sell the land for a period of five years. After that time, the settler would be granted freehold title of their land.[28] The scheme had little impact in the immediate Kaitaia area; a few European settlers had arrived in the 1850s, but settlement in the wider area didn't expand rapidly until between 1870 and 1900, when kauri-gum diggers began arriving en masse.

Development of the township of Kaitaia was signaled when, in 1860, Cochrane Brothers and Co advertised an estate of 4000 acres on the Awanui River, part of which was laid off in a village bordering the river, containing 68 lots, varying from half an acre to two acres. All the lots were sold, at varying prices from 39s to £15 per lot. The remainder of the estate was subdivided into farms of from 50 to 233 acres each and for these from 5s to 32s per acre were obtained- the total acreage of farmland disposed of amounted to about 2500 acres.[29]

Despite the sale of the township lots, in 1879, only six European families living in Kaitaia, being: Rev Mathews and family; R. H. Mathews, who was a J.P., builder, contractor, postmaster, school superintendent and registrar; W. G Puckey, farmer of 'Woodville' and choirmaster; T. Taaffe, proprietor of Redan Hotel; W. R. Grigg, saddler, harnessmaker and shoemaker; W. J. Shannon, farmer; and, G. E. Hollis, a farm proprietor who farm was called 'Grassmere.'[30]

Growth of the Kaitaia township was partly hindered by its dependence on the port of Awanui, 7 km north, from where scows delivered supplies and took kauri, gum, wheat and produce down the Awanui River and out through Rangaunu Harbour (Figure 15). In May 188, the Northern Steamship Company was formed and secured all the northern trade routes to serve all the ports of the east coast of Auckland Province, including Awanui.

An article in the New Zealand Herald described the Kaitaia area in 1881:

> The Victoria Valley is continuing to attract attention, and more settlers are expected to arrive. I lately visited that locality, to see the new bridge, now in course of construction across the "double crossing," or the Awanui river. I found the bridge nearly one-third finished. The Government superintendent of the work was present, and the contractors, Messrs. Evans and Richards, with their men, were engaged in placing in position the heavy supports of the structure. They were driven 5 feet deep into the river bed, and were apparently about 30 feet long. The timber used was of a most substantial character, much of it being conveyed from Whangaroa by the schooner Medora to Awanui, and thence to its destination by drays. The bridge will evidently be a splendid one when finished. No obstacle will then impede the way of the settlers to the valley. A good road will lead through it. This will be continued from the settlement by a new and improved line of road connecting with Mangonui. The work is by order of the General Government, and it is expected to be completed in a few months time. Victoria Valley will then be accessible by three well-formed approaches - from Awanui and Kaitaia, Hokianga, and Mangonui. The road leading through the settlement is generally level and straight, and was finished several months ago. The new settlers are locating themselves in various directions, and are fast forming comfortable homes. The new residence of Mr. T. "W. P. Smith (St. Rollox's) is a pretty building, standing on a fine position facing the main road. In the neighborhood were signs of clearing land and sowing grass. About 300 acres, I was informed, are being thus treated. There has been a good deal of fencing erected. Mr. Larmer has established himself in an excellent and picturesque situation near the hills, and his neighbours, the Messrs. Kingsford, are also making good progress with their selection. Near Awanui Messrs. Matthews have fenced, with post and wire, their lands at each side of the road.[31]

[28] Reed 1956.
[29] *New Zealand Herald* 24 March 1860:6
[30] *Northern Advocate* 6 October 1945
[31] *New Zealand Herald* 6 June 1881:3

Further efforts to attract people to Northland occurred during the early 1900s. The enactment of the Swamp Drainage Act (1915), which was simply legislation for the draining of swamp land for settlement purposes, provided the opportunity to open large tracts of previously unusable land, especially for farming. Complementary to this was the Discharged Soldiers Settlement Act (1915) which marked the adoption of a major scheme of settling returned soldiers on the land. This Act enabled Crown land, as well as private land, to be bought by the Crown and subdivided with loans granted for development, and for the purchase of existing properties. Through this scheme some nine thousand five hundred men were financed on to farms, 4,000 following subdivision of 1.4 million acres by the Crown and 5,500 by purchase of existing properties totalling 1.2 million acres.[32] Later, the Small Farms Scheme was established to 'make provision for the settlement of approved persons on small areas of Crown lands set aside for the purpose and on other lands that are not being utilized to their full extent, and thereby to mitigate the distress resulting from unemployment.'[33]

By the early 1900s the commercial area and wider township was starting to emerge as shown in Norwood Brother photographs taken in the early 1900s (Figure 16-Figure 17).

Figure 15: Steam ship *Apanui* on Awanui River, 1913. Source: Northwood brothers: Photographs of Northland. Ref: 1/1-004931-G. Alexander Turnbull Library, Wellington, New Zealand. /records/22329177

[32] https://teara.govt.nz/en/1966/land-settlement/page-7
[33] Small Farms (Relief of Unemployment) Act 1932:437

Figure 16: View looking south down Commerce Street, Kaitaia ca 1910. Source: Ref: 1/1-010630-G. Alexander Turnbull Library, Wellington, New Zealand. /records/22715001

Figure 17: View looking northeast to Commerce Street, Kaitaia. Photograph taken 1910s by Northwood brothers. Looks over paddocks, towards buildings. Source: Ref: 1/1-010625-G. Alexander Turnbull Library, Wellington, New Zealand. /records/23067362.

Bridges

The first bridge built by the C.M.S. missionaries was a small bridge that crossed the Mau-te-Ringi Creek. Constructed by Puckey in 1834, it gave access from the mission station to the Awanui-Pairatihi Road, which ran around the foothill to the east to the track leading to Kerekere Pa and beyond to Oinu, where timber for the wooden church was cut and sawn.[34]

Construction of the first bridge to span the Kaitaia River,[35] named Mauriohoho,[36] began in June 1834 and was completed on the 8th June the following year.[37] On the western side of the river a large puriri used as a buttress with the bridge secured to it with long hand-forged iron spikes (Figure 18). On the east bank,

[34] Mathews and Mathews 2009:69

[35] The section of the Awanui River that passed through what is present day Kaitaia was historically called the Kaitaia River.

[36] Mathews and Mathews 2009:106 attribute the name Mauriohoho to the second bridge.

[37] Te Ahu Archives No. 45:1.

the bridge was attached to a tairere tree. This bridge was between sixty and seventy feet long (Figure 19) and permitted access from the station to Ahipara where the most populous local village was at the time. Although built low to the river to permit debris carried by floodwaters to pass over, the bridge was destroyed around 1836.[38] A replacement bridge was built by Puckey and completed in July 1838, built approximately 50-60 metres downstream, and in 1844, this bridge was also destroyed. A third bridge was constructed on the site of the present Church Road bridge. This was completed in 1845 and demolished by the County Council in 1883.[39] In 1873, a Government grant of £350 was secured to build the Waikuruki Bridge with the first piles for the bridge driven in August that year. The old Waikuruki bridge was replaced with a new two-lane concrete bridge.[40] Another bridge was constructed (date unknown) over the Mangawhero Stream by R. H Mathews and this was washed away during Lundon's Flood in 1868.

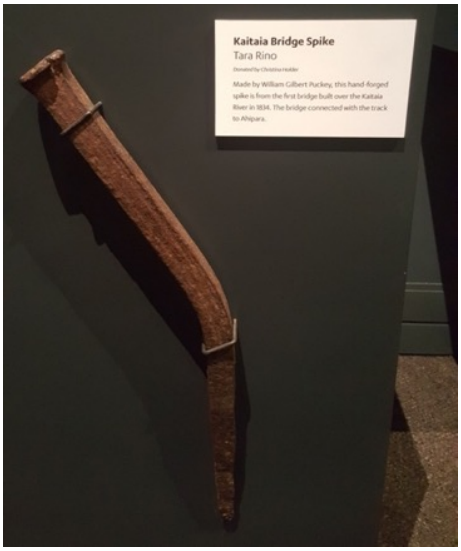

Figure 18: Iron spike from the original Kaitaia bridge ca. 1834. Source: Te Ahu Museum and Archives.

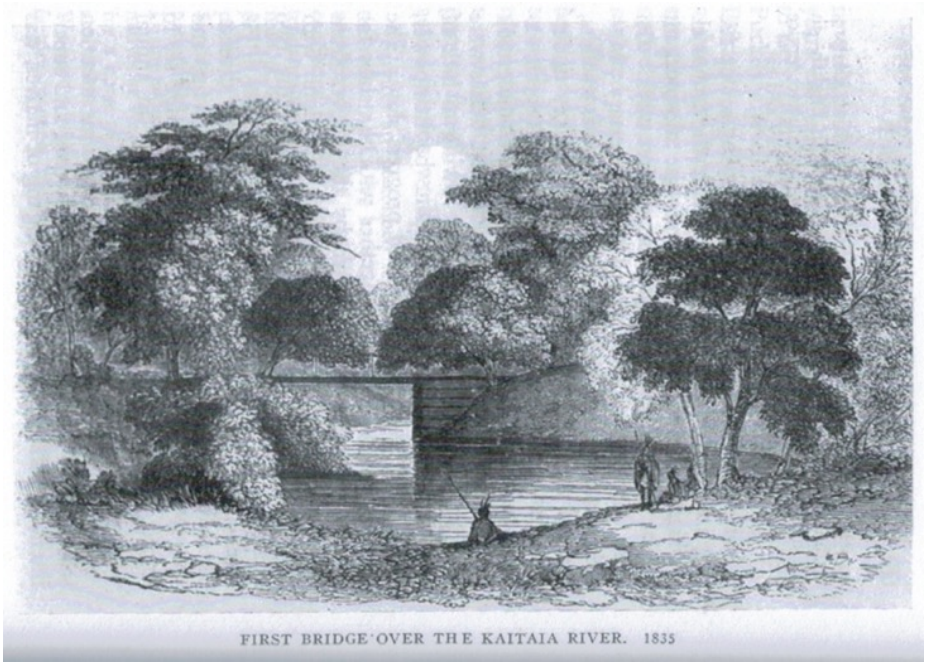

Figure 19: Artist rendition titled 'First bridge over the Kaitaia River, 1835.' Artist unknown. Source: Mathews and Mathews 2007.

[38] Mathews and Mathews 2009:78
[39] Te Ahu Archives No. 45:1
[40] *Northern Advocate* 9 June 1944

Roads

The earliest roads from Kaitaia were a bridle road to Manganui and the road north to Awanui, which traversed the east bank of the Awanui from the mission station:

> After crossing the [Mission Station] bridge, the road kept close to the river, upstream for perhaps 6 chains, and then turned into what was named 'The Lane', which slowly mounted the hill, passing about 1 and ½ chains on south side of the old Parsonage, and continued past (below) the Church and Mr Puckey's buildings, then turned at a right angle northwards over the crown of the ridge and into Maute-Ringi, across the flat to the foot of the hills on the north side of the valley and here the road continued up the hill towards Oinu and Mangatete, and whilst another road branched off along the foothills westwards, generally following the course of the Kaitaia River, until the present spillway was reached, above Archibald's Store. Here the track followed a devious course to Awanui[41]

In 1882, the road from Awanui to Kaitaia was surveyed (SO 1305F) and realigned to its present configuration.

Flax Mills

Flax milling was an important early industry in the area (

Figure 20). In 1869, the Daily Southern Cross 1869 reported that; "Hungahunga[42] was found near the mouth of the Awanui and one or two other places, with tihore[43] the most common species. Puckey and Mathews of Kaitaia have a mill worked by horse gear, and Shannon and Mathews of Awanui have a mill driven by water wheel."[44]

About 1870, a Mr Fenton started a Flax Mill on the banks of the stream alongside Puckey Ave.[45] Fenton built a dam across the stream just above the Redan (Poho) bridge and dug a race from the dam to the mill to power the waterwheel. The mill building was later used as a carpenter's shop.[46] Another flax mill - the Elder and Curtain Flax Mill - was established in Awanui in the 1870s.[47] Simpson's Mill was also established at Awanui and was destroyed by flooding in the 1870s.[48]

Figure 20: Flax shed on Awanui River near Lake Ohia with flax in various stages of preparation. Ref: 1/1-

[41] Mathews 2007:1

[42] Hungahunga is more commonly known as the refuse of the leaf, rather than the generic term for flax as used in this *Daily Southern Cross* report.

[43] The most superior leaves, whose fibres were used for fashioning the korowai and aronui cloaks, belonged to the varieties of flax known as oue, tihore, rukutia, huruhika and huhiroa (http://teaohou.natlib.govt.nz/journals/teaohou/issue/Mao02TeA/c21.html).

[44] *Daily Southern Cross* 1869

[45] Businessmen's Association Carnival Review 17 March 1939.

[46] *Northland Age* 2 November 1954.

[47] Hongi 1922:1

[48] Hongi 1922:4

010869-G. Alexander Turnbull Library, Wellington, New Zealand. /records/22823603.

Dairy Factory
The first Kaitaia Dairy Factory was built in 1901 alongside the Awanui River (Figure 21). A replacement was completed in 1926 with a one-bay wharf and sheds built adjacent to the factory to handle general cargo.

Figure 21: The first Kaitaia Co-operative Dairy Company building, built 1901. Ref: 1/1-010613-G. Alexander Turnbull Library, Wellington, New Zealand. /records/22874761

5.5 History of Awanui Drainage

Floods
Prior to the development of flood control measures that began in the early 1900s, floodwaters from the Victoria Valley watershed brought down by the Awanui River, and seawater from the Rangaunu Harbour, severely limited farming of any sort on the floodplain of the Awanui River downstream of Kaitaia. Before stopbanks around the shores of Rangaunu Harbour, high tides and storm surge caused frequent sea water flooding between Awanui and the harbour. This rendered the land totally unsuitable for pastoral farming, except for occasional grazing of salt-tolerant native species. Similarly, floodwaters overflowing the Awanui River flowed into large basins either side of the river between Kaitaia and Awanui. The water would lie in these areas for weeks at a time while the water table dropped, killing both native and introduced plant species.[49]

Major floods occurred at Kaitaia in 1865 (Lundon's Flood), 1875 (Mathews Flood)[50], 1904 - which washed away the Redan Bridge, 1918, 1927, 1928 - when the town was inundated[51], and 1934, by which time the

[49] Northland Regional Council 2005:8
[50] *Northern Advocate* 25 March 1937:2
[51] *New Zealand Herald* 15 May 1928:8

Awanui Flood Scheme was near completion. The Auckland Star reported at the time of the 1934 flood that the Whangatane spillway saved the township from serious flood damage.[52]
In 1937, the Northern Advocate published an article about the historic flooding of Kaitaia based on a manuscript written by long-term resident Colonel Alan Bell that was derived from interviews with old residents. Two floods stood out in the memory of the earliest settlers:

> One was known as Matthews' flood, and occurred in 1875 or 1876. It derived its name from the fact that Matthews' Bros, lost 300 sheep. The dead sheep were found afterwards in scrub and against trees and fences, and the Maoris were paid 2/6 per head for each carcase brought to the boiler at the mission station. In those days, all the Maoris on the Kaitaia Flat had small canoes for use in time of flood. It was not exceptional for it to rain heavily and continuously for a week or ten days. Matthews' flood came down in a sudden wave, and an old Maori chief who was washing potatoes on the riverbank at the time had to flee for his life. Loudon's flood occurred in 1865 or 1866. It was remembered by that name because the Maoris who were living near Awanui, had been induced by Loudon to plant large areas in potatoes for shipment to the Thames goldfields, and had their crops destroyed by the flood.

Drainage
The earliest drainage in the area was dug by Maori who formed drains to manage agricultural land. The Polynesian ancestors of Maori brought with them long-established gardening traditions and techniques when they settled Aotearoa, and when necessary, adapted these to suit the local environments and micro climates in areas where they settled. Gardening provided essential carbohydrates when there was little other food available and was supplemented by foraging and fishing. Cultigens were important sources of sustenance for Maori, alongside fishing and foraging, and played a major role in exchange relations with other groups.[53]

Early ethnographic evidence of land adaptation in the form of gardens with drainage systems was noted by early explorers. In 1772, Lieutenant Jean Roux aboard the vessel *Le Mascarin* in the North Cape area noted a canal system, describing it during a shore visit:

> In the afternoon, several of our company went on shore for a walk. We found the landing very easy in fine weather, but the least wind raises a considerable break. I noticed that the river was very little above the level of the sea, and that as soon as the tide was high the sea entered its mouth. The source of this river cannot be very far inland. The plain which it waters is of a fertile appearance, and is divided by several small streams. It appeared to me to have been cultivated. Every ten paces or so there were little canals through which the water flowed. The herbage is so high as to give certain proof of the fertility of the soil.[54]

In the mid 1800s Manning[55] noted 'old drains' could be seen in the landscape delineating 'the extent of …. ancient cultivations', while in 1902, Archdeacon Walsh noted that surface channels dug for drainage on clay lands that were being prepared for planting, especially those on the river flats, and that 'the cleaning of drains was the first thing to be attended as the planting time approached'.[56]

Further direct evidence of drains having an agricultural function was uncovered in Raglan in 1928[57] after a famer drained approximately 20 acres of swamp in a gulley and discovered a well-defined drainage system that was interpreted as having a garden function. A prehistoric antiquity was interpreted due to the fact that whenever a stump or log was encountered, a detour was made around it, which the observers thought was suggestive that they were dug with wooden implements. Two wooden implements about 6 feet in length were found in one of the drains, interpreted at the time as large paddles, but possibly these were in fact digging implements. An adze handle and carved (Mauri?) stone were also found in the drains.

[52] *Auckland Star* 1934 19 June

[53] http://archaeopedia.com/wiki/index.php?title=Maori_Gardening
[54] McNab 1914 ed. P.362
[55] Manning 1863:181 cited in Barber 1982:1
[56] Walsh 1902:15 cited in Barber 1982:1
[57] *Auckland Star* 18 April 1928:10

Early European's recognised drainage features in the Motutangi area and interpreted these as evidence of the land being used for pre-historic cultivation. In 1933, when a drainage system in the banks of the Motutangi River was inspected the drains were interpreted as 'old Maori drains' that were located three feet below the present Government drains and thought to be for the cultivation of taro. The observers noted that the drains were dug to achieve a better fall or drainage gradient, and surmised that when they found a tree trunk in the way, they made the course of the drain under, or around the obstacle, such as previously interpreted at Raglan in 1928.[58]

There was some initial debate regarding the functional interpretation of drains dug as Maori garden features[59] with both adaptation for drainage to enable cultivation or canalisation for eel capture and faunal harvest seen as distinctive but not necessarily contemporaneous or dual uses.[60] By the early 1920s, a general consensus for Northland sites was reached by Wilson[61] that faunal harvest and horticultural drainage interpretations were not mutually exclusive.[62] Shortly after Skinner[63] disputed the interpretation of drainage features as pure speculation, whilst Best[64] acknowledged the probability that swamps were drained to facilitate cultivation of wetlands.[65] There has also been an ongoing debate in the archaeological community about the correct origin and functional interpretation of some drainage and ditch features that were recorded as traditional sites when in fact these may be more recent plough features.[66]

Wetland gardens were not only used for the cultivation of crops, they also provided canoe portages, were a habitat and spawning grounds for native plants, birds and fish such as tuna (eel), were a source of building and weaving materials such as raupo and harakeke (flax), a source for medicines and dyes used for seasoning timber, and were used for the storage of cultural materials.[67] [68]

An example of prehistoric Maori drains was researched by D. M. Wilson who published two articles in 1921 and 1922 offering his interpretation of drains in the Kaitaia swamp, noting that "on the richer areas are found the remains of old drains. These are not confined to one locality, but scattered all over; but most noticeable in that portion south of Lake Tangonge." Wilson provided a map of one drainage system[69] (Figure 22). Discussing the farm of H. B. Mathews at Kaitaia that comprised the site of the present township, Wilson reported that:[70]

> H. B. Mathews informed me that on the swampy portion of this farm, which is situated between the Kaitaia and Tarawhakaroa Streams, he found a great system of old drains. In his opinion this work was for the growing of kumaras, but was a smaller variety that is not cultivated now. Maori spades, wooden beaters, stone and greenstone axe-heads and the remains of kapa-maories were found all over this property.
>
> It was on this place that the large greenstone axe-head was found recently while digging a spillwater on one of the bends of the Kaitaia River already recorded in this Journal. Mr. Matthews recollects that one season the level of Lake Tangonge fell seven feet, leaving long stretches of the former lake bottom exposed. On this he found numerous kapa-maories.

Wilson also recalled an oral tradition related to him:[71]

> The Maoris at Pukepoto relate an incident that happened there about eight generations ago. At that time Rua Kurapete, a chief, lived at Kaitaia with his hapu, and a chief named Kauri dwelt similarly at Pukepoto on the border of the Kaitaia swamp. These two chiefs quarrelled. Rua Kurapete dug a drain from the Kaitaia

[58] *Northern Advocate* 20 December 1933:5
[59] Barber 1989
[60] Barber 1984: 23-32
[61] Wilson 1921, 1922
[62] Barber 1984: 23-32
[63] Skinner 1921:94
[64] Best 1976
[65] Barber 1989:24
[66] Walton 1982
[67] Barr 1998
[68] Gibb 2019
[69] Wilson 1921: 185-188
[70] Wilson 1922: 130-133
[71] Ibid. 1921

River to the Tarawhakaroa. I might here mention that the Tara-whakaroa is a fair sized stream that runs into Lake Tangonge.

The Kaitaia River is a much larger stream and drains a considerable tract of country.

Near Kaitaia the two streams are not more than about five chains apart. It was at this point that Rua Kurapete dug his drain or spillwater. The Kaitaia River becomes a very large river in times of flood, and when this happened the diversion of a considerable quantity of its waters into the Tarawhakaroa which is the main feeder of Lake Tangonge, had the effect of raising the water level of the latter and spread over its banks at Pukepoto and flooded Kauri and his hapu out, destroying their plantations. Kauri and his tribe then conceived the idea of digging a drain from the Kaitaia swamp to the sea on the West Coast, a distance of about two miles. This work was started and a drain was dug from the lake across the swamp to the foot of the hills. They found the hill formation too hard for their primitive tools after digging a drain a short distance from the edge of the swamp, and the work was relinquished.

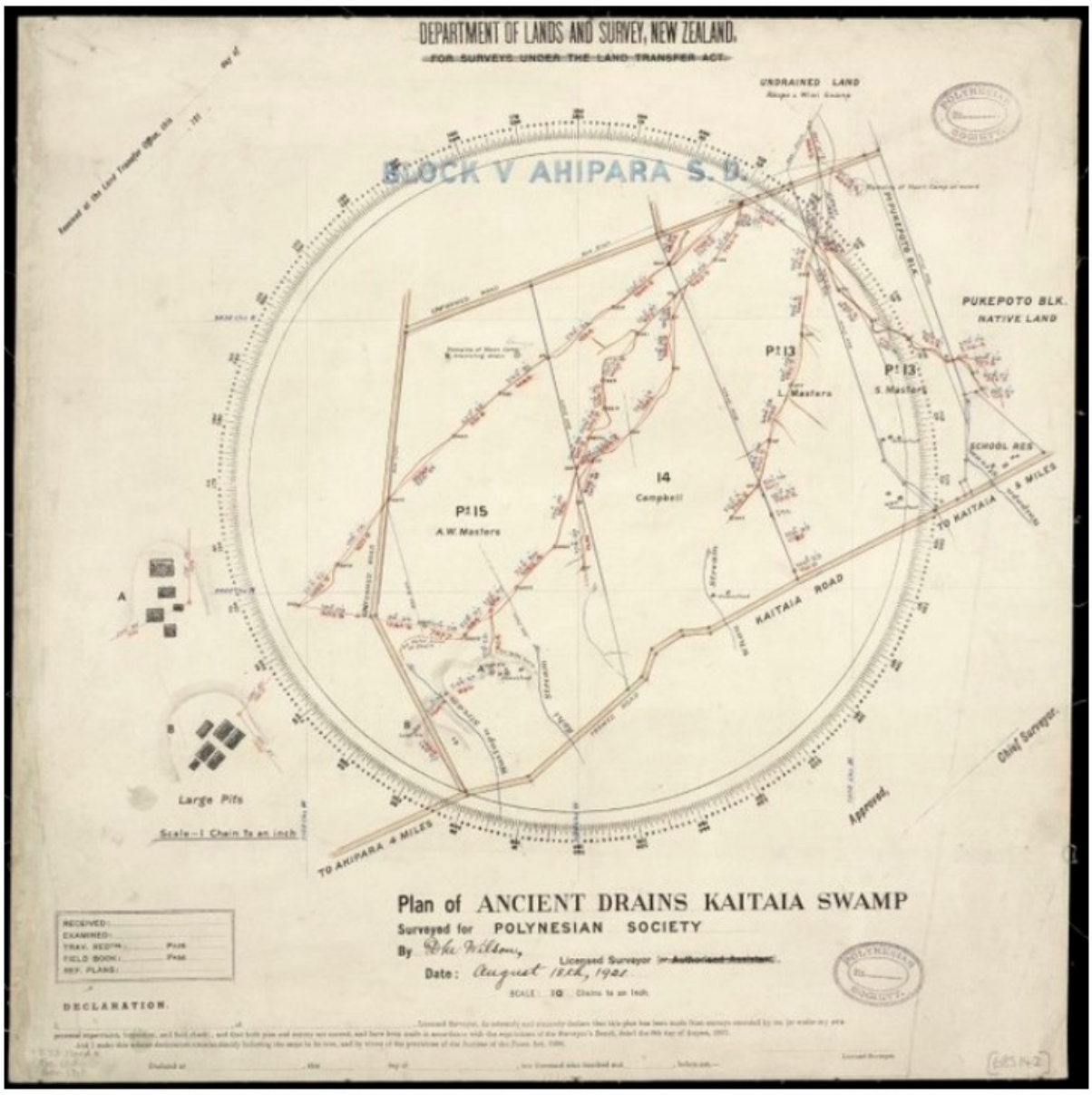

Figure 22: Wilsons map 'Plan of Ancient Drains Kaitaia Swamp' (1921). Source: JPS V30 1921:185

Continued efforts to drain the area commenced when the C.M.S. missionaries arrived. Under the supervision of Rev. Matthews and Mr G. Puckey, the work of constructing a spillway down the Whangatane was started, but was afterwards abandoned. Bell, based on his interviews with old residents, maintains that the drainage that has since been done by the (then) Land Drainage Department, follows the course

Matthews and Puckey adopted. The labour was provided by local Maori whom offered to open up the spillway for 40 blankets, but the missionaries neither had the blankets nor the money with which to procure them. It was thought by Colonel Bell that the original course of the river, known as the spillway, was blocked by the late Mr Jack Wells about 57 years ago, as the water going through the cut endangered the Awanui Road.[72]

Further development and drainage of the swamp land occurred when the gumdiggers starting arriving in the 1860s and modifying the wetlands by forming the initial drains and tracks in their quest to find and extract kauri gum.

Swamp Drainage Acts

In 1913, the Kaitaia Land Drainage Act was enacted which defined the Kaitaia Drainage Area and applied the provisions of the Land Drainage Act of 1908 to the new Act. Two years later the Swamp Drainage Act (1915) was enacted and the following year the Kaitaia Land Drainage Act was repealed with the Kaitaia Drainage Area now administered under the Swamp Drainage Act. This provided the legislative pathway for the Government to start the conversion of Northland wetlands to arable farmland an open it up for settlement. That year, the *Auckland Star* announced that the Awanui Drainage Scheme was shortly to begin with removal of bends in Awanui River suggested to the Prime Minister, who intimated that the Government had ordered two new dredges, one of which was for the north.[73]

Awanui Flood Scheme

By 1916 the official commencement of the Awanui Flood Scheme had begun, but progress was initially slow. The annual report presented to the Government at the end of March by the Department of Lands and Survey kept the Government appraised of the programme. The reports from 1916-1934 give an excellent overview of the type and progression of works being undertaken annually and are summarised below.

1916 Although it has not been found possible to commence actual drainage operations, much valuable work has been carried out in the way of inspections and the taking of the necessary preliminary steps preparatory to the constitution of drainage areas. The work done during the year was purely technical, and comprised the compilation of necessary data, together with engineering surveys.[74]

1917 Good progress has been made on the above works despite the very wet weather experienced and difficulties caused through scarcity of labour due to war conditions. Bullock teams (Figure 23) have been engaged during the year in clearing the Kaitaia River of snags, willows and other obstruction, the total distance cleared being seven miles, including numerous projected diversions. These diversions (of which there are about thirty between Kaitaia and Awanui) will shorten the river course by about five miles. It is unfortunate that the Priestman dredger on order from England cannot be delivered early on account of war exigencies, as much greater progress could then be made.[75]

1918 Throughout the early part of the year very little work of any description could be done on account of the excessive rainfall. Floods in quick succession caused all the low-lying areas to be in undated for several months, and the districts at Waipakauri (sic) and Awanui suffered severely. The works have also been handicapped by the inability of obtaining sufficient first-class labour. It is hoped that in the coming year the employment of Jugo-Slavs (sic) will materially help to solve this problem.

Work carried out: River clearing and snagging – the entire river from Kaitaia to Awanui, a distance of 15 ½ miles has been cleared of logs and stumps, this enabling a free passage at all times up and down the river.

River Diversions: Four cuts were commenced durng the year, all of which should be ready open shortly. Two cuts were carried out by day labour, and up to date 11,500 cubic yards of spoil have been removed. Much wheelbarrow work was necessary owing to the soft and boggy nature of the under clays. One cut is being carried out by contract, and so far, 3,3347 cubic yards have been shifted. The remaining cut was only started

[72] *Northern Advocate* 25 March 1937:2
[73] *Auckland Star* 30 May 1916
[74] AJHR C-04 1916
[75] AJHR C-04 1917

towards the end of the year, but should not take long to finish, as it follows an old watercourse for the greater part of its length.

Figure 23: Clearing land along the Awanui river near Kaitaia, probably during the drainage of the Kaitaia swamp. Ref: 1/1-010648-G. Alexander Turnbull Library, Wellington, New Zealand. /records/23125013.

1919 The early portion of the year saw much difficulty in securing first-class labour, and men could not be obtained from any quarter. It was hoped, however, that this would be overcome by the placing of a number of Jugo-Slavs on the work. Unfortunately, these men have not turned out as great a success as was expected, and there has been continued friction since their arrival. It is well known that they are expert spadesmen, but by adopting frequent go-slow tactics the cost of their work has been somewhat higher than a similar class of work done by European gangs. At the beginning of the summer quite a number of British workers (including several returned soldiers) were obtained and good gangs made up.

Kaitaia River Diversions: The year began with three spillways completed and one partly completed. These spillways have been pushed ahead, and I now have to report twenty-one completed. Of these some four have been done by Slav labour, two by British gangs, and the remainder by wheel scoops. Those cut by hand-labour are made through low swampy country unable to be worked by teams, or short cuts and points too small for team-work. On the other hand, as the teamsters became accustomed to their work several cuts considered almost unworkable have been carried through entirely by teams. Slavs have been employed trimming batters after all possible team-work had been done. Some 53,500 cubic yards have been removed from the cuts during the year.

Kaitaia riverbank work: The whole river from Awauui to the dredge-site has been widened out to its new section, and lined out in advance of the dredge to an average depth of 4 ft. This work entailed cutting points and straightening the river-channel, and was carried out by Slavs and a British gang by means of wheelbarrows, scoops (Figure 24). About 48,500 cubic yards have been removed in this work. On several occasions, it was possible to put scoops on, but bullock teams were soon found to be too unwieldy, and latterly horse teams have worked on points and long "slices." The new river from the dredge-site to Awanui Landing is 9 miles 30 chains, shortening the old course by 3 miles 60 chains.

Whangatane Spillway: Three cuts have been completed on this side, and two others are well in hand. Of these five, three have been let on contract. The work lies in heavy clay, the price given for contract being 1s. 3d. per cubic yard. It is anticipated that several more cuts will be completed during the winter. 10,860 cubic yards have been removed during the year. These cuts will be deepened by dredge later on.

Surveys: The traverse of Whangatane spillway, which was begun late last year, was completed, levelled, and cross-sectioned, and cuts laid out. Land plans for taking the lower portions were begun (Figure 25), but owing to pressure of other work have not been completed. Some 13 miles of new drains have been laid out, and a start made late in the year with the subdivision of the Crown land which is to be made available for discharged soldiers.

Figure 24: Cutting a bed in the Awanui River. Ref: 1/1-010646-G. Alexander Turnbull Library, Wellington, New Zealand. /records/23191343.

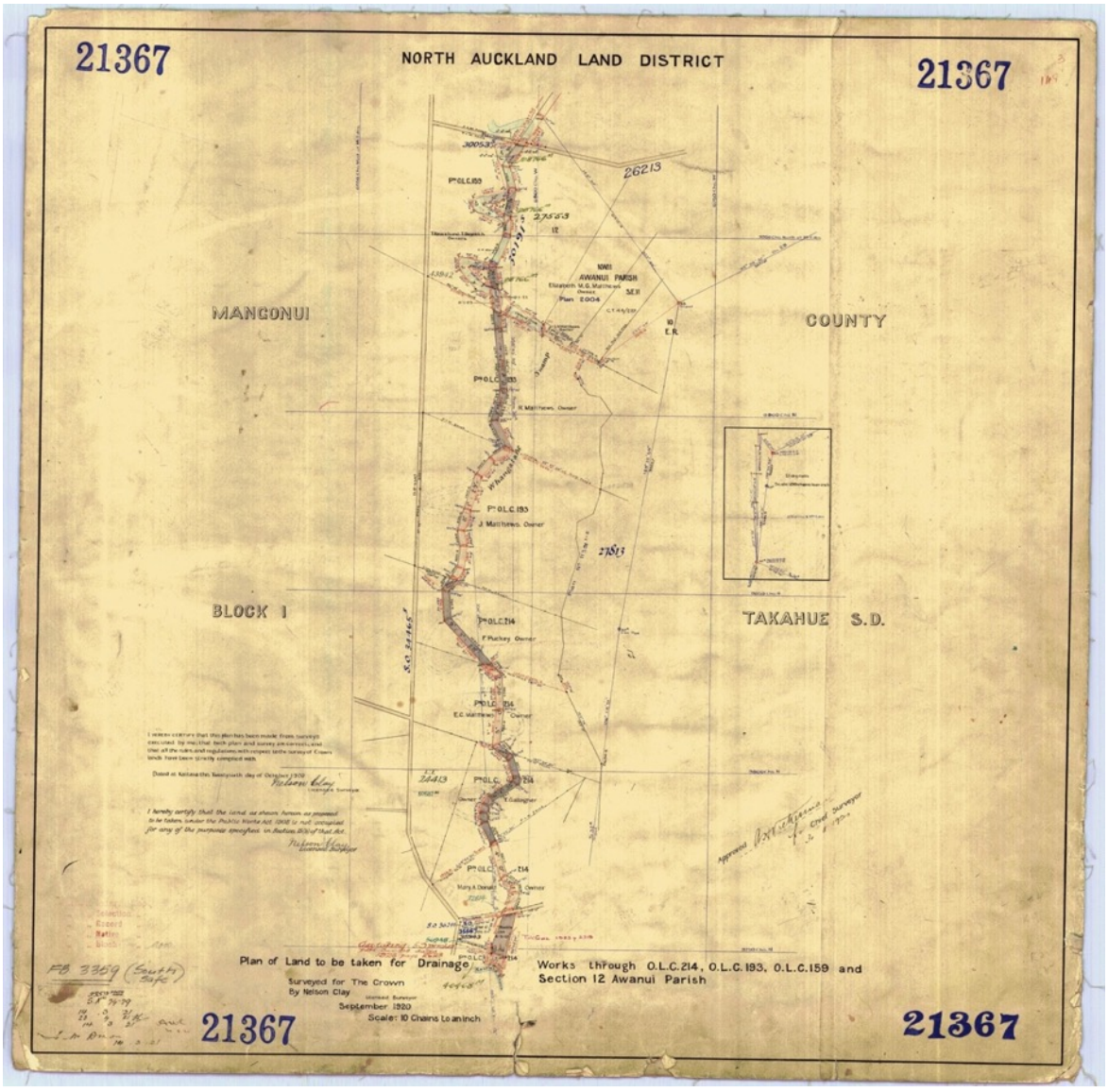

Figure 25: SO 21367 (1920) Plan of Land to be taken for Drainage.

1920 Progress has been exceptionally marked during the year, advantage having been taken of the plentiful supply of labour offering in the district. Climatic conditions generally have also assisted, as there was a, good summer and a mild winter.

River-diversions and Spillway Cuttings: The three cuttings on the main river remaining at 31st March, 1919, have been taken down to an average depth of 5 ½ ft., thus completing all river-diversion work between Awanui and Kaitaia. and all cuttings on Whangatane spillway are now constructed between Kaitaia and California Swamp (Figure 26). The work has been done by wheel scoops, and, with the exception of two cuts done by contract, all work has been done by day labour. The work has been economically performed, clay work averaging 3s. 3d. per yard. Total yardage removed during the year was 47,700 cubic yards.

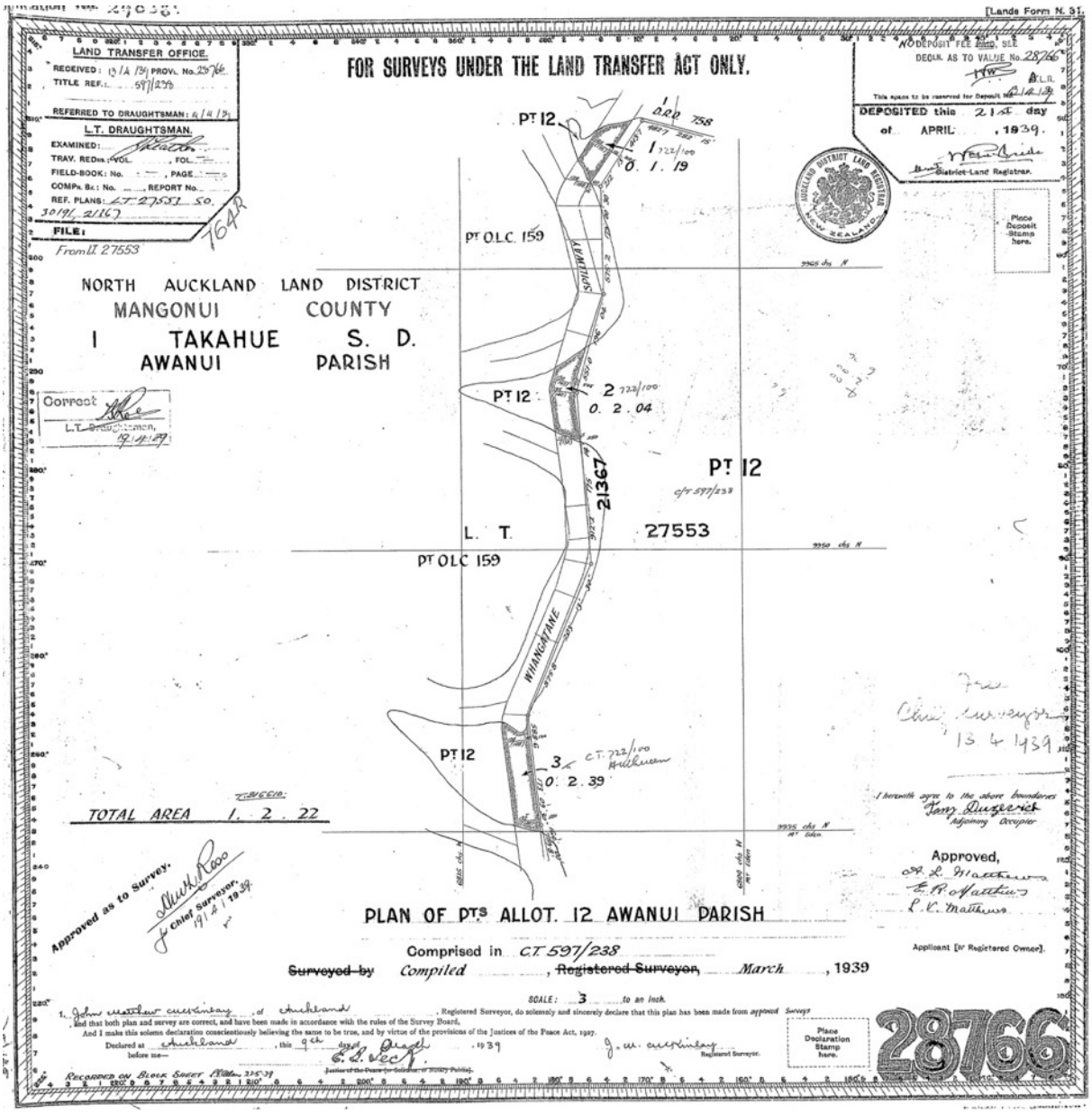

Figure 26: DP 28766 (926) showing diversions of the old Whangatane River during the spillway development undertaken in the 1920s.

1921 Kaitaia River Spillway: Owing to the fear that machinery for the excavation of the river spillway via Whangatane and Kareponia was not in sight, and that the districts around the lake were receiving too much water impounded by floods, it was considered advisable to open up the spillway to half-depth by hand, and take a

portion of the flood-waters through the old river-channel. The diversion cuttings made the previous year were deepened, and the lower end through the swamp was taken out 30 ft. wide by means of barrows. Some twelve scoop teams were employed in the heavy clay cuttings, and good and economical work was done. The opening of this auxiliary channel will enable work to proceed above Kaitaia, which, although urgent, has of necessity been held up till the lower portion of the work has been completed. The diversion of Tarawataroa Stream, snagging of Kaitaia River to Johnston's old store, opening of Showground cut and Church Gully swamp (Figure 27), have all been held up pending the increased capacity of the channels for flood-waters. These are now under way, and should be completed before the worst of the winter sets in. It is gratifying to know that the plant for the construction of the spillway will soon come to hand.

Kaitaia River: Steady progress has been made with the work on the river. The dredge-work has been of an exceptionally difficult nature on account of the heavy timber encountered and large quantities of sand. A further difficulty has been the height of the banks through which the plant is working. For the greater part of the summer the banks have averaged 8ft. above the deck of the pontoon, the ends of the chutes just clearing the banks. To aid better clearance damming was necessary, but, owing to the sandy nature of the country and abundance of timber, dams were difficult to secure, and burst after freshes on two occasions. Two diversions have been cut through during the year, hut the work has been heavy and difficult two and three drops of the grab being required to loosen sufficient for a load. The total amount of spoil removed during the year was 51,500 cubic yards.

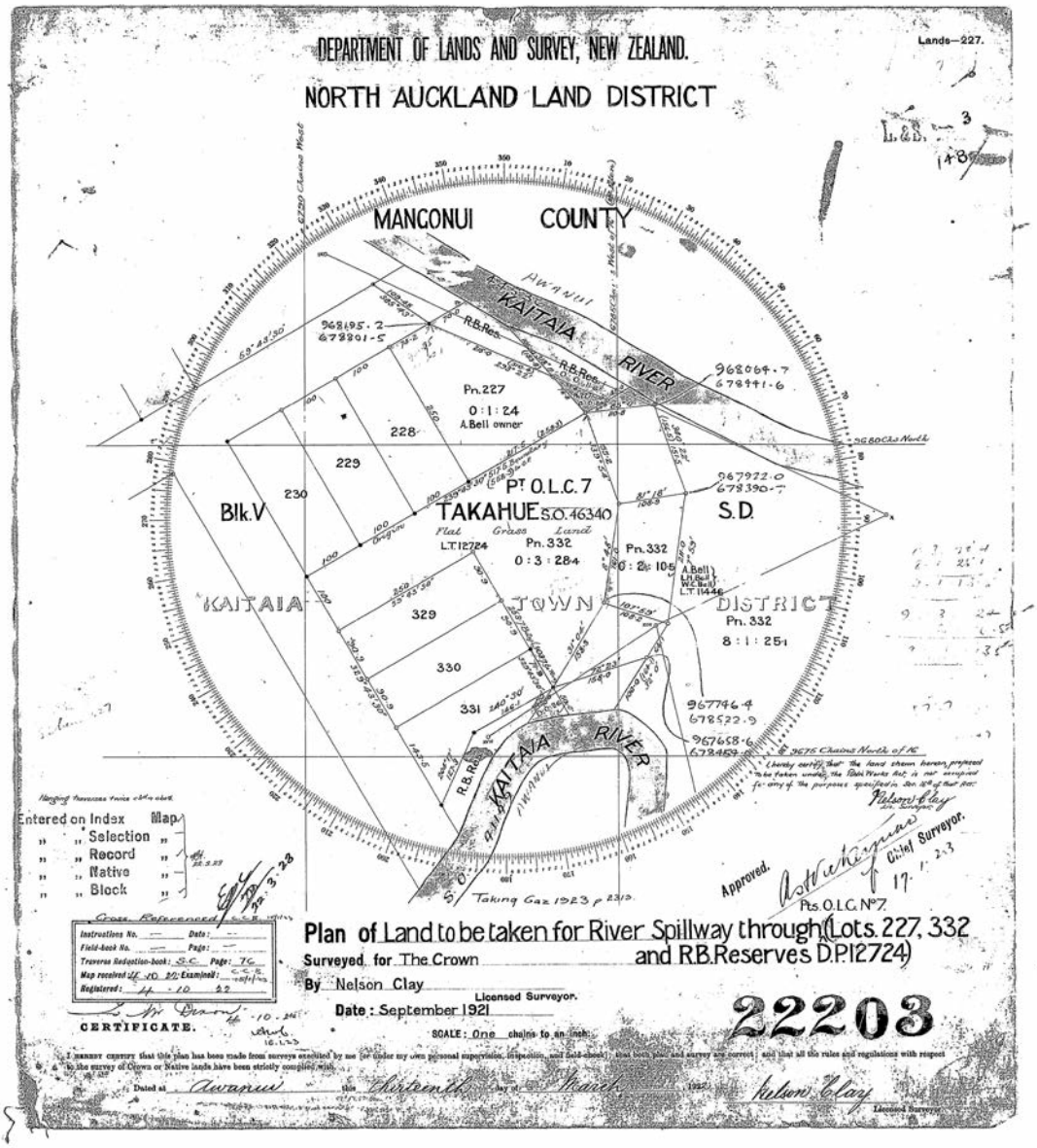

Figure 27: DP 22203 – Plan of Land to be taken for River Spillway through (Lots 227, 332 and R.B. Reserves

DP 12724).

1922 The key to the successful drainage of the whole area is the improvement to the Awanui River, and as this work progresses a larger area is benefited, and consequently is able to be more fully developed. This work has been progressing satisfactorily, and during the coming year progress should be more marked, as the dredging will not be so difficult. The Whangatane spillway is of great importance in this connection, and the dredging of this channel to the requisite depth has been commenced from the upper end. The design of the concrete weir at the junction with the Awanui River has been practically completed, but the construction will not be undertaken until the dredging is further advanced, when the concrete-work can be carried out without being interfered with by the water-level in the spillway.

Awanui River: The main work carried out on this river has been the dredging of the channel, which is being widened, deepened, and straightened. The total distance dredged was 125 chains, entailing the removal of 58,809 cubic yards of spoil, at a cost of 10.16 d. per cubic yard. Eight diversions of the river were completed whilst carrying out this work, and each diversion makes an appreciable difference in the lowering of the flood-level. This dredging has been especially difficult on account of the amount of timber in the channel of the river. Some of the clay country has also been exceptionally hard, but it is anticipated that this class will not be so pronounced as the work proceeds. Fortunately, there has not been the same difficulty with the high banks as during the previous year, and consequently the work has been much easier. At the end of the year the dredge was about 30 chains below the Waihoe Junction. The snagging of the Kaitaia River was continued above the Kaitaia Township. Some 229 chains of the river were cleared of willows, trees and the logs removed from the bed, all this timber being topped and piled so as to be burnt as soon as it is dry. Until the Whangatane spillway is completed it will be unwise to continue this snagging farther up the river without very close investigation, for the removal of the obstruction in the river naturally increases the intensity of the floods lower down. One diversion in the river near Awanui was deepened by hand so as to temporarily improve the drainage of adjacent lands. This measure will have to be resorted to in several other cases, as it will be two years before the dredging of the river in the vicinity is completed.

Whangatane Spillway: This channel was opened up to an average depth of about 5 ft., and although not opened up into the Kaitaia River the effect of the work has been felt in some of the Awanui country. A Bay City dipper dredge was obtained for this work, and the construction of the necessary pontoon was commenced in November. The pontoon is 60 ft. long, 20 ft. wide, and 5 ft. deep, and some 22,000 superficial feet of timber were used in its construction. The dredge is oil driven, the engine being a 45 horse-power two-cylinder opposed type, starting on benzine and, after warming, running on kerosene. The machinery has all been erected, and a trial run was given at the latter end of February. For a start the clay to be removed was very hard. During March, some 2,500 cubic yards of spoil were shifted; but it is satisfactory to note that since then the rate of progress has improved, and it is anticipated that when this dredge turns round into the munga the progress should be very marked. Scoops have been used to construct the channel through the clay country, and will be used again later in places where widening is required.

1923 The principal works carried out during the year have been the improvement of the Awanui River channel, excavation of the Whangatane spillway to provide an overflow channel for flood-waters, and enlarging of the Waihoe channel to provide an outlet for Lake Tangonge and Pukepoto watershed into the Awanui River. Dredging has been steadily carried on throughout the year on each of these channels.

Awanui River: Dredging of this river has been carried on throughout the year, the old channel being widened, deepened, and straightened. Eight diversions were cut through to straighten the river, and a total distance of 118.26 chains dredged, bringing the improved channel to a point below cut No. 12. Some 67,542 cubic yards of spoil were removed, consisting of sand and hard clay, which required blasting in some cases to facilitate work with the grab. A large quantity of heavy timber was also removed from the river-bed. Some snagging was done in the vicinity of Kaitaia, where scouring and erosion has taken place, thus undermining trees growing along the banks. Thirty chains of the river was cleared of willows along the stretch cut off by cut No. 30, so as to keep open the channel for outlet from Church Gully. Piles were driven in cut No. 30 for a bridge with 12 ft. roadway, and a temporary footbridge thrown across there to carry foot traffic till the permanent structure is erected.

Whangatane Spillway: Dredging of this channel was carried on with the Bay City dipper dredge, working from the upper end, an old munga being followed with cuts through high clay ridges to straighten the channel; 92-50 chains of this spillway was excavated 30ft. wide, the depth ranging from 15 ft. in the highest country to 6 ft. in the lowest ground cut through; 39,980 cubic yards of spoil were removed by the dredge, and also some heavy timber, but this has not been encountered in any great quantity so far. Very hard clay was dredged in places, and this entailed much blasting before it could be expeditiously handled by the machine. In addition

to the dredging 11,000 cubic yards of spoil was removed from the spillway with plough and scoop, this being necessary to allow the dredge to excavate to the required depth in the high country. Scooping was done mostly by bullock teams working on contract, the contract price being ls. 3d. per cubic yard. Three bridges were erected over the new channel excavated - one on Donald's road, for general traffic, and two on the properties severed, to take stock and light loads.

1924 The main works have been carried on by the three floating dredges, and the end of the year shows a big improvement in the drainage of the swamp country situated to the south of Bell's Road. This is due to the completion of the Waihoe channel, and also the dredging of the Awanui River for about four miles below the junction with the above channel. Although these works will not complete the major scheme in the vicinity, the freedom from floods has been marked. Formerly any normal fall of an inch of rain would have caused the river to overflow its banks in the vicinity of Kaitaia, but now, even with the scheme incomplete, falls of 3 in. per day have been successfully carried by the newly dredged portion of the river. Now that the two Priestman dredges are engaged in improving the river (Figure 28) it is anticipated that this work will be completed as far as Awanui within eighteen months. From this point out to Rangaunu Bay it is proposed to remove only the sand deposits near the Awanui Wharf, and also the willows along the river. The dredging of the Whangatane spillway will take over two years, and until this is completed it is impossible to divert any flood-waters from the river down this channel. The concrete regulating weir to be constructed at the junction with the river near Kaitaia has been designed, and the construction of same will be proceeded with.

Awanui River: Dredger No. 7 (Priestman) was engaged in widening, deepening, and straightening this channel. 123 chains was dredged and 64,410 cubic yards of spoil removed, and a quantity of heavy timber taken out of the old river-bed. Cut No. 30 in Kaitaia Township was deepened by 5 ft, allowing the water to run through this diversion at all times. All timber removed by dredge was hauled clear with bullocks, and banks cleaned up as the dredging proceeded.

Whangatane Spillway: Dredger No. 22 (Bay City Floater) was employed on this work: 97 chains of channel 30 ft. wide was excavated, and 10,895 cubic yards of spoil, and a quantity of timber removed by the dredge. A new engine was fitted on this machine during the year, and improvements effected in the hoisting-gear of bucket to give extra lifting-power required to effectively deal with the very bard clay encountered. Bullock teams were employed in scooping an opening in the high country to enable dredge to get through, and approximately 11,800 cubic yards of spoil was removed by this means. Bridges have been erected as required on properties severed by the spillway, and openings cut in the spoil-bank to tap all waterways which had been blocked by the spoil thrown up. Ahead of the dredge the partly constructed channel has been cleared of weeds, etc, and kept open to allow water to flow down to the outlet into the Pairatahi Stream.

Figure 28: Preistman dredge on Awanui River, during a drainage project on the Kaitaia swamp. Ref: 1/1-010674-G. Alexander Turnbull Library, Wellington, New Zealand. /records/22435673

1925 The principal works carried out during the year have been the completion of the Waihoe channel, widening and deepening of the Awanui River, excavation of the Whangatane spillway, improvement and maintenance of existing drains, and excavation of new drains by hand.

Awanui River: Dredges No. 7 and 10 (Priestman) were engaged in widening, deepening, and straightening this channel. A distance of 1386 chains was dredged, including five diversions to cut off bends in the original channel, and approximately 103,489 cubic yards of spoil was removed by the dredges. An extra diversion was laid off and excavated to facilitate the refloating of Dredge No. 7, which had sunk in the bend of the river, and to improve the channel by cutting off this bend. Owing to the sinking of No. 7 dredge, and the breaking of main casting on No. 10 dredge, operations were delayed for about two months. Spoil to the amount of 3,550 cubic yards was removed from high banks with scoops so that dredge chutes could operate, and 3,000 cubic yards of spoil was removed by scooping from cut No. 3a to enable dredges to work through this cutting. The forward dredge is now engaged in cut No. 3, at a point 91 chains from the Awanui Bridge, where the work in hand finishes. Other work in this channel consisted of the ringbarking of willows, which had commenced to grow in places previously cleared by snagging. The willows were treated with a chemical which has given satisfactory results and apparently killed the young growth. A breastwork was erected at the Kaitaia Hotel, to prevent erosion at this point, and some timber in the river-bed was loosened with explosives and hauled out.

Whangatane Spillway: Dredge No. 22 (Bay City plant) was engaged in excavating this channel. A distance of 99 chains was dredged, and approximately 46,300 cubic yards of spoil removed. Bridges required over the channel were erected as the excavation proceeded, and bullock-teams were employed in scooping back spoil in the high country to enable spoil dredged to be disposed of. Spoil to the amount of 1,400 cubic yards was removed by scoop. Flood-waters having broken into this channel at the intake to the Kaitaia River, a substantial dam was erected at the point of danger, and this has prevented any further overflow. Raupo and other growth in the lower end of the channel was cleared, as this portion is now overtaxed during heavy rain owing to the flood-waters being rapidly carried down over the dredged part. This causes congestion in the low country where the channel is incomplete.

1926 The principal works carried out during the year have been the improving of the Awanui River by dredging and scooping, excavation of the Whangatane spillway, maintenance and improvement of existing drains, and construction of new outlets. No severe floods were experienced this year. The river overflowed its banks at different points on several occasions, but the low-lying country was not covered to the same extent as in previous years.

Awanui River: Dredges Nos. 7 and 10 (Priestman) were engaged in widening, deepening, and straightening this river, whilst scoops were made use of where possible to remove the top soil from cuttings in high country where it was impossible for the dredges to dispose of the large amount of spoil necessary for the excavation of the channel. On nearing Awanui one settler's bridge had to be dismantled and re-erected, whilst at Awanui the centre span of the bridge on the main road had to be dismantled in order to allow the dredges to pass through. Owing to the limited space between the piles, only a few inches beyond the width of the pontoon being available, the chutes on both dredges had to be dismantled. From the bridge northwards, the river is used by both steamers and scows, and as the chutes on the dredges would have interfered with shipping a rearrangement of chutes was carried out. Only one chute was replaced on each dredge, special bracing for the chute retained being necessary, and in addition ballast had to be placed in the pontoons so as to keep them on an even keel. The river has been widened out to 60 ft. on bottom as far as Awanui, and from this point on the channel has been widened out to 70 ft. In addition, the silt and timber were removed where found necessary. At the end of the year both dredges as well as scoop teams were employed in excavating a diversion below Awanui, which will assist navigation as well as drainage. In carrying out this work some of the spoil had to be handled twice, especially when the dredges were commencing the cut. A total distance of 2 miles 60 chains was dredged, 108,358 cubic yards of spoil being removed by dredges, and 24,500 cubic yards by scoops. The cost of dredging has necessarily been more expensive this year on account of the dismantling at the bridges and the double handling of spoil at the cut below Awanui.

Whangatane Spillway: Dredge No. 22 (Bay City) was employed in excavating this channel, which will provide relief for flood-waters from the river at Kaitaia. This will benefit the whole district, and it is hoped to be able to open this channel for next winter. By the end of the year the dredge had reached tidal water, only 20 chains remaining to be dredged in order to give the spillway a good outlet into a tidal creek which provides a natural channel into Rangaunu Bay. Hard sandstone has been encountered at a depth of 7 ft. to 8 ft. at the lower end of the channel, and this formation continues for the remainder of the distance. As the plant cannot excavate this material, the spoil banks have been built up to 5 ft. above high-water mark, and these banks will protect the adjacent low-lying lands when the spillway is carrying flood-water. For some distance above the Kaingaroa - Awanui Road sand was located in the bottom of the channel, and the weight of the dredged banks caused the sides to slip, thus reducing its capacity considerably. In this locality, a wide berm will require to be left, so that the channel will not become blocked with the slips. A distance of 112 chains was dredged, necessitating the removal of 51,085 cubic yards of spoil. Bridges have been erected as required to give access to properties severed by the dredged channel, as well as at road-crossings.

1927 The principal works carried out during the year have been the completion of dredging in the Awanui River and Whangatane spillway as far as possible with the floating plant in use; maintenance and improvement of existing drains; and extension and improvement of stop-bank and flood-gate system in the tidal area. The Whangatane spillway has not so far been opened, as it was considered inadvisable to do so until the channel constructed by the Bay City dredge was enlarged. A Marion caterpillar drag-line has now been purchased for this purpose, and by June this machine should be in operation. When opened this channel will relieve a large portion of the area from flooding, and every effort will be made during next summer to work a double shift on this machine so as to hasten the date of opening.

Awanui River: Excavation of cut No. 1 below Awanui was completed early in the year. Bullock teams had been employed for the scooping of topsoil, which was practically completed by the end of last period. Priestman dredgers Nos. 7 and 10 were used to carry the excavation to 6 ft. below low-water mark. A distance of 14| chains was dredged, comprising the cut and approaches thereto, and approximately 8,900 cubic yards of spoil removed. One dredge has also been intermittently employed in removing sand and silt which is continually being deposited in the navigable portion of the river. Approximately 22,400 cubic yards, deposited since the channel was first dredged, have been removed in the past ten months. Some 70 chains of this river in the vicinity of Kaitaia has been cleared of "snags" which had lodged in the bed of the stream or been exposed by the scouring of the channel. Overhanging trees were removed from the banks where, owing to erosion, there was the danger of same falling inwards.

Whangatane Spillway: l3 chains of this cut was excavated by dredger No. 22, Bay City plant, and approximately 3,000 cubic yards of spoil removed. The cut was carried into a tidal creek for some chains, but could not be taken as far as required owing to the hard sandstone bottom not allowing sufficient depth at low tide to float the pontoon on which machine is carried. The dredge was therefore laid up for some time, and

has lately been dismantled. A regulating-weir, constructed of timber with stone filling on sides and bottom, was placed in position at the intake to the Awanui River to restrict the flow of flood-waters when channel is opened (Figure 29).

Figure 29: Regulating weir on the Awanui River/Whangatane Spillway. Ref: 1/1-010642-G. Alexander Turnbull Library, Wellington, New Zealand. /records/23062912

1928 Owing to the scheme nearing completion the programme of works has necessarily been curtailed. The most important works carried out comprised the maintenance and improvement of drains, natural channels, and other works, erection of flood-gate, dredging in Awanui River, and enlargement of stop banks on the Pairatahi Stream. This latter work was rendered necessary by the decision to increase the carrying-capacity of the Whangatane spillway, as previous to the arrival of the Marion drag-line there was no suitable excavating plant available on the works for carrying out improvements in this locality. The proposal to divert the river through the school and other properties in the Town Board's area has been investigated. This diversion will be of great assistance in reducing the overflow above the township.

Awawui River: For eight months dredger No. 10 was employed, in removing deposits of sand from the lower reaches of this channel, during which time 34,700 cubic yards of spoil, mostly fine sand, was removed. There is a natural tendency for the sand to accumulate in this locality during normal periods of flow, but the deposition is hastened when floods are experienced. The removal of this sand is a very serious problem, and one which affects the whole district, as the continued silting affects the navigation to Awanui, which is the port for the collection and distribution of goods for the western portion of the Mongonui County.

Whangatane Spillway: The enlargement of this channel was commenced last winter after the Marion drag-line (No. 27) was erected at Awanui. The scheme had necessarily to be commenced at the lower end of the Pairatahi Stream, where the stream spreads out into bold water. From this point, up to the straight cut of the Whangatane the line of the original bank has generally been followed, although a deviation of 11 chains has been made to improve the channel capacity in this locality. Throughout the above length, a distance of 1076 chains, the bank has been raised to a point some 5 ft. above the existing flood level, and at the same time considerably strengthened. The raising of these banks has now been completed, giving sufficient channel capacity between the bank and the hills on the eastern side to carry the flood-waters. Spoil for the construction of the banks has been obtained from a continuous borrow-pit inside the banks, which will provide a large storage reservoir for the run-off from the adjoining lands when the automatic gates are closed by flood and tide-water in the stream. The widening of the previously dredged channel was commenced towards the end of March, and from now on the progress should be more rapid, as the country will become more solid, consequently the working of the machine on pads will be rendered unnecessary. The amount of spoil removed during the year was 33,900 cubic yards.

1929 The principal works carried out during the year have been the maintenance of drains installing of flood-gates, and enlargement of the Whangatane spillway and stop-banks.

Awanui River: No work was done on this channel except the removal of some snags which impeded navigation below Awanui, and the hauling-out of overhanging puriri-trees and young willows near Kaitaia. A large quantity of sand has been deposited in the lower reaches of this stream during the past twelve months, and the navigation of the channel with vessels of any great draught will become increasingly difficult from this cause.

Whangatane Spillway: Dredger No. 27, Marion steam drag-line, was engaged throughout the year in enlarging this channel on the western side to the extended section required to carry eventual discharge, and dredger No. 18, a Monighan oil-driven drag-line, was engaged for six months in similar work on the eastern side. A distance of 2 miles 10 chains was covered by No. 27 dredge, excavating approximately 149,958 cublic yards of spoil, mostly stiff clay. No. 18 dredge widened for a distance of 76.08 chains, excavating 57,260 cubic yards of spoil, of which approximately half was light peaty soil and the balance stiff clay. Much of the work was carried out in country below or about high-tide level, where the spoil was required for construction of stop-banks. Owing to the presence of water the spoil could not be shaped by machines as excavated, and hand shaping had to be carried out after the spoil had dried sufficiently to stand to the required height at a reasonable batter. Internal drains leading to flood-gates under the banks have also been constructed by hand, and a certain amount of handwork is entailed at bridge-sites, especially as these structures could not be completed in advance of dredging owing to delays in arrival of timber-supplies from Australia. Certain alterations were made to No. 27 dredge, giving greater range and adaptability to the different kinds of work required. Dredger No. 18 was erected and placed in commission this year, and during six months consistent operation has proved a thoroughly efficient machine for the work required. A new one-yard bucket capable of dealing with stiff clay has been fitted, which, with the provision of " pads " for soft country, is the only alteration found necessary to suit local conditions.

Stop-banks: The maintenance of 10 miles of stop-bank and drain with eighteen flood-gate outlets was carried out, and 60 chains of new bank was erected on the west bank of the Awanui River, thus continuing the stop-bank system to a point higher up-stream. Six flood-gates, ranging from 18 in. to 3 ft. diameter, were placed in position to give additional outlets to the Awanui River. Five gates were installed to discharge through spoil-bank into the Whangatane spillway, and one culvert was lengthened for this purpose. Three gates were refitted with iron flaps. The shaping of stop-banks thrown up by drag-line excavators was carried on by hand as spoil dried out, and 80 chains of bank completed. About 30 chains of bank constructed of light peaty soil was planted in Kikuyu grass in order to bind and strengthen the embankment.

1930 The principal works carried out in this area during the year have been : (a) Excavation of Whangatane spillway and erection of bridges over same ; (6) shaping stop-banks ; (c) installation of flood-gates ; (d) maintenance of drains and other works.

Awanui River: The only work done was the poisoning and removing of young willows. No dredging has been done in the lower Awanui. River since November, 1927, but sand has now accumulated to such an extent that difficulty is being experienced in navigating the channel. Arrangements have been made to dredge the channel again, and the work of scooping back spoil to provide a bench on the banks for dredged spoil has been commenced. As soon as this has been completed a Priestman dredge will commence removing sand from the river-bed.

Whangatane Spillway: Two drag-lines have been employed on the enlargement of this channel to 60 ft. bottom at the lower end and 50 ft. bottom from the point where a steeper grade has been adopted. A distance of 3 miles 54.09 chains has been covered by the two machines, with a total of 221,500 cubic yards of spoil removed. Dredger No. 27, Marion steam drag-line, was engaged in widening original channel from 20 ft. to 50 ft. bottom, part of the work being done from west bank and part from east bank. Two shifts were worked, and 126,920 cubic yards of spoil removed from 189-65 chains of channel. Some difficulty has been experienced in maintaining this machine in continuous operation, as a certain number of breakages are inevitable and cannot be expeditiously replaced owing to distance from a foundry or machine-shop capable of handling repair jobs of any size. Dredger No. 18, Monighan oil-driven drag-line, was engaged in widening the channel at lower end from 40 ft. to 60 ft. bottom, working one shift only. This machine lost very little time waiting repairs, and was more easily maintained in operation. Some 94,580 cubic yards of spoil was removed from 104-44 chains of the spillway, and 21 chains of small channel for the Oinu Stream. Approximately two months' work for both machines remains to complete excavation of this channel to Donald's Road, 10 chains from the intake. This portion of the channel, already excavated through sound clay country, is of sufficient width and depth to carry the full amount of water which can be discharged through the temporary regulating-weir erected at the intake.

School Cut. —Surveys have been made and plans drawn for this work, which includes 20 chains of excavation and erection of bridge at Church Road. It is anticipated that excavation will be commenced in July.

Stop-banks: The maintenance of 13 miles of stop-bank and drain was carried out, and 35 floodgate outlets kept in operation. 140 chains of bank thrown up by drag-line was hand-shaped and kikuyu-grass planted over a stretch of 80 chains. A 20-chain deviation of bank was constructed to avoid encroachment, and 10 chains of new bank thrown up connecting Whangatane spillway bank and Kareponia Creek. Five flood-gate outlets and two open culverts were placed in position.

1931 The principal works carried out comprise: (1) Completion of excavation, Whangatane spillway and school cut; (2) improving Awanui River; (3) installation of flood-gates; (4) shaping stop-banks and maintenance of drains.

Awanui River: Bullock teams were employed to scoop back spoil previously dredged from the river-bed in order to provide space on the banks for further dredge spoil. Dredger No. 10 (Priestman) was engaged for six months in dredging sand from the bed of the channel between the Northern Steamship Co.'s wharf at Awanui and the Dairy Company's wharf. Approximately 27,662 cubic yards of spoil was dredged and placed on the river-banks. Some 20 chains of this channel was snagged by bullock team where a quantity of timber had lodged below the Whangatane spillway intake. Fallen poplar-trees and other timber were removed from the stream for 80 chains above Kaitaia Township, and young poplars and willows removed or ring-barked and poisoned wherever they appeared throughout the portion of the channel which had been cleared. Some 96 chains of the channel, from Sunray Park cut to spillway intake, was dredged by drag-lines, which removed overhanging trees from the banks and timber from the bed of the stream. 12,600 cubic yards of spoil was removed from the bed of the stream and in easing bends, and 4,350 yards was removed by drag-lines in widening and deepening 5-30 chains of this channel through Sunray Park cut.

Whangatane Spillway: Excavation of this spillway was completed in July, and flood-water passed down the channel in August and subsequently whenever freshes occurred in the river. Two draglines were employed on excavation, and enlarged 49.04 chains from 20 ft. to 50 ft. bottom, and 23.20 chains from 30 ft. to 50 ft. bottom, excavating 57,120 cubic yards of spoil. Bridging and flood-gates were completed throughout, and 190 ft. of concrete floor and stonework on batter was placed below the weir at intake to prevent scour. Two swing-gates have been erected on boundary fences crossing the channel, and further gates will shortly be placed on all boundaries intersected.

School Cut: Excavation of this cut was commenced by drag-lines in August and completed in December. 20.05 chains of new cut was excavated through heavy clay, and 5 chains of old river-bed cleared and deepened. The new channel has 30 ft. bottom at average depth of 18 ft., and the total excavation was 48,850 cubic yards. The new channel was bridged at Church Road, and flood-gates and culverts placed for drainage of adjacent lands into the cut. Other works entailed in connection with the cut were the erection of fences and the provision of a new playing-area for the Kaitaia School. This has been drained, cleared, and ploughed, and will be finally worked up and levelled for sowing of grass as soon as the ground is in favourable condition.

1932 The principal work carried out in this area during the year has been maintenance of works previously completed, while some work in connection with the School Cut and Whangatane spillway has also been undertaken as detailed below.

Whangatane Spillway: Eight swing gates were erected across this channel to connect section boundaries and road-crossings. 1 mile 15 chains of stop-bank and fillings were raised to correct subsidence, and fascines placed on 70 chains of bank at the toe where erosion was occurring or likely to occur; 80 chains of channel was cleared by cutting raupo and other growth. This channel has carried a fair volume of water on several occasions, but has not yet had occasion to operate at full capacity.

School Cut: Work carried out in connection with this cut consisted of preparing and sowing in grass 4 acres for a school playground, fencing same, and laying a concrete cricket-pitch. Four pumping plants previously operated from the portion of the river now diverted were rearranged and pipe-lines laid to enable water to be pumped from, the new channel. 10 chains of fencing was erected to complete fencing of the area taken for the cut.

1933 Maintenance of completed drains, stop-banks, and flood-gates comprised the principal work carried out in this area during the year, as, apart from maintenance, only a few small jobs were undertaken.

Whangatane Spillway: This channel was in operation on fourteen occasions during the year for periods of from twelve to forty-eight hours. The maximum amount of water carried was approximately 3,000 cusecs;

but it is apparent a much greater volume could be safely passed by the channel, also that the regulating weir at intake will effectually prevent any overtaxing of the spillway in the lower reaches. The only work carried out on the spillway was the placing of a fascine mat below the concrete apron of the regulating weir to prevent scour by flood-waters.

School Cut: This cut now forms the permanent channel for the Kaitaia River, and as the old channel is rapidly filling with silt and shingle, some fencing of properties was entailed. Fifteen chains of fencing was erected, together with one swing gate across the old channel.

1934 Maintenance of completed drains, stop-banks, &c, was the principal work carried out in this area. No new works were undertaken, but some expenditure additional to drain-clearing was incurred in clearing the river of timber and fallen trees.

Whangatane Spillway: The banks of this channel have now consolidated and curves are protected with growth, so that no trouble from scouring is anticipated except at the intake, where further work may be required.

Kaitaia River: Large poplars and other trees growing on the banks about Kaitaia Township are falling into the stream owing to scouring of the channel caused by increased velocity of the water during floods. Accumulations of these were removed during the year and stacked on the bank at a safe distance

By 1934, major development of the Awanui Flood Scheme was complete. Some deficiencies with the scheme were addressed in the following years, along with ongoing maintenance of the system. However, the development of the Awanui Flood Scheme was not without its problems. In 1931, seven claims for compensation had been made against the Public Works Department for damage to property caused during the construction of the Whangatane Spillway, with case heard in Kaitaia in May that year.[76] The settlers had claimed £4715 but were awarded £2529 15s by the Court.[77]

Also in that June year, a meeting of the Kaitaia branch of the Farmers' Union was held to discuss the inadequacy of the relief given by the Whangatane Spillway from floodwaters, where it was decided to request the local Drainage Board to call a meeting of ratepayers to further the discussion. The union chairman Lewis reported that the recent flood was the first since the drainage scheme was completed and gave a definite indication of the benefits of the scheme for property owners. He went on to note that although the scheme may have been a success up to a certain point, it was not success as far as the western side was concerned. Lewis had brought the matter before the drainage engineers some time ago and had stated that, until the trouble was dealt with at a point above his property, there would be a danger of flood, and this had now been proven to be accurate. The Farmers' Union been waiting to see what effect of the spillway would be, and now they contended, it was now shown that it had not gone far enough.[78]

Summary

Drainage development around the Awanui River and associated floodplains can be traced back to prehistoric times when Maori converted the low lying alluvial land using complex drainage systems to enable horticultural activity. These systems were observed by pakeha since the first settlers arrived in the area and included drainage systems recorded on H.B. Mathews property, drains north of Awanui River and near Lake Tangaone. Further evidence of drained garden systems along the Awanui was recorded by early explorers who ventured up the river noting the prevalence of gardens alongside the river banks. The early European missionaries attempted to build drains and spillways using local Maori as labour but discontinued their efforts shortly into the process.

The period between 1915 and 1934 resulted in the principal development of the Awanui Flood Scheme and Whangatane Spillway. From Kaitaia and Quarry Road the spillway generally followed the path of the Whangatane and Awanui Rivers with diversions cut between meandering bends to straighten and widen the channel. North of Quarry Road a straight cut was put through for the spillway channel, eventually connecting to the Pairatahi River and outflow to Rangaunu Harbour.

[76] *Auckland Star* 23 May 1931
[77] *Northern Advocate* 1 June 1931
[78] *Northern Advocate* 29 June 1934:11

Spoil from the diversion cuts was used for stopbanks and excess material was likely redistributed in the immediate area in the diverted bend. Material for constructing stopbanks was also obtained by digging borrow-pits inside the banks, which also provided a large storage reservoir (i.e. a benched platform) for flood waters. Similarly, the tailings from river dredging were transported across chutes that hung above and over the stopbanks. This material was then redistributed and levelled-off to form good ground. Not all the diverted river channels however were immediately filled. For example, after a diversion was cut through the northern showgrounds starting in 1928 the old river bed became the property of the Manganui Agricultural Association and most was gradually filled over a number of years. The remaining section of unfilled river bed was developed as the wood chopping area.[79]

5.6 Historic maps and plans

Historic maps and plans provide some information about the greater area and include original Deeds, Maori Land Court (M.L.), Old Land Court (O.L.C) and early Survey Office (S.O.) plans. Relevant plans that provide some detail relevant to the project are listed in Table 2 below. Most relevant information pertaining to archaeological sites is found on maps and plans dating to 1900 and earlier. Mapping from this period also details the course of the Whangatane River (Figure 30) and raupo swamps that were found throughout the area prior to the development of extensive drainage beginning in the late 1800s and then development of the Whangatane Spillway from 1915 onwards. With regards the development of the Whangatane Spillway, maps and plans from the period from 1900 to 1940 provide useful information relating to changes to the Whangatane River and development of spillways and deviations dug for the scheme.

Table 2: Relevant Historic Plans for the Awanui River Area

Map	Date	Description
OLC 119	1859	*Plan of Hayno belonging to Richard Mathews*. This plan names rivers on the property and shows the location of an old homestead alongside Awanui River and Mr Maxwell's house, an unnamed pa, and a ditch by the Pairatahi River. The unnamed pa is Matako Pa (O04/486), but neither the ditch nor homestead are recorded as archaeological sites.
OLC 242	1859	*Grant for the Church Missionary Station at Kaitaia. Claim number 2992*. Shows C.M.S. purchase and boundary names including; Tikiataiki, Manurewa Pa, Kanitatau, Pukepoto, Wahakarera, Pukimiro, Te Tou-a-a Mauku, Rawiri's Ground, Maunrewa Pa and Kirikiri Pa. Also shows mission station buildings at that time.
Deed C31	N.D.	Whangatane River channel south of Awanui.
Deed H46	1913	Awanui township subdivision plan.
Deed 747	1924	Whangatane Spillway connection to Awanui River.
Deed 758	1924	Drainage reserve deviation and original river bend.
ML 390a	1868	*Plan of California Native Reserve*. Shows Mangatawa section, and names areas/boundary markers on the upper Awanui; Te Kauri, Maimaru, Towai, Ranga toa toua, Pukeakura, Tupaea, Kaiwaka. Also shows cultivations and houses in northern area. The cultivated area and houses are not recorded as archaeological sites.
ML 800	1868	*Plan of Tawhiti, County of Manganui. Claimed by Tamaho*. Shows several names along the river (Te Wai Potaka, Purehua, Kaipaki) and inland (Manurewa and Te kani).
ML 9561	1919	*Plan of Tawhati A & B Blocks.*
ML 7322	1909	Plan of subdivision of Kareponia. Shows old dray track, raupo swamp alongside future Whangatane Spillway area. The dray track is not recorded as an archaeological site.
ML 7351	1905	*Plan of Maimaru A & C Blocks*. Shows landing reserve north of Awanui and the name Waimutu and various tracks, none of which are recorded as archaeological sites.
SO 44 1	1878	*Oinu, Parich of Awanui*. Shows area of old Maori cultivation north of airport. Not recorded as an archaeological site.
SO 45	N.D.	Plan of road from Kaitaia to Awanui. Shows Rawiri's land. Names Waikuruki area, Hobson's Point, shows old road alignment, old dray track to Manganui and buildings within the mission station.
SO 776 1	N.D.	*Takahue Block.* Shows old Whangatane River channel and names Puke Kahikatoa, twp

[79] Mangonui Agricultural Association 1988:15

		pa -Tututara Ki Pah and Parekahariki Pah the road to Awanui, and dray road to Manganui. Parekahariki Pah may be an unrecorded site as the closest recorded site is O04/135 Pairatahi Pa.
SO 776 2	N.D	*Oinu Block*. Names Te Toua Mauka, Pukemiro, Rawiri's Land, Paraka Tapu, Waipotaka, Kaikoru. Shows various tracks and several old buildings including R. Mathews House.
SO 1535	N.D.	Awanui River through Kaitaia and south.
SO 1035 E	1871	*Survey of line of road between Awanui landing place and Mangatete*. Shows Pickmere's
SO 1305 F	1872	*Plan showing traverse of middle of new road between Awanui landing place and the Kaitaia River bridge crossing.* Shows buildings and bleaching ground (O04/1069) around Awanui, and bridges, the store, Elder's house and the landing place.
SO 1535 C1	N.D.	Shows C.M.S mission station buildings, old northern road to Awanui, areas of cultivation.
SO 1628	1878	*Block No. V Takahue District*
SO 2004 A	1879	Shows Simpsons flax mill, mill race and buildings.
SO 4363	1887	*Plan of road through Tawhiti Block*. Shows area of cultivation adjacent to Awanui River.
SO 11446	1914	*Part of old land claim No.7.* Original subdivision of Kaitaia lands.
SO 21367	1920	*Plan of land to be taken for Drainage*. Land between Kaitaia and Awanui.
SO 22091	1922	*Plan showing land required for drainage easement*.
DP 909	1886	School Reserve
DP 2496	1901	Shows location of old Church Road bridge
DP 11589	16712	Deviations for Whangatane Spillway
DP 12724	1919	Subdivision plan for east of Kaitaia River
DP 15252	1921	*Plan of subdivision of O.L.C. 242*.
DP 27553	1937	Deviations for Whangatane Spillway south of Quarry Rd
DP 28766	1939	Deviations for Whangatane Spillway south of Quarry Rd

Figure 30: Old course of the Whangatane and Awanui Rivers as mapped from SO 776 1, SO 1035, SO 1535 and SO 1628.

5.7 Archaeological Context

A search of the New Zealand Archaeological Association records (Archsite 2019) shows a number of archaeological sites are recorded proximate to the Awanui Flood Scheme Project (Table 3; Figure 31-Figure 35). Many of the sites recorded in the area have not been revisited since first recorded, and the majority of the site records do not have plans of the recorded feature, nor is the positional accuracy of most of the sites particularly good. A brief summary of these sites follows Table 3.

Table 3: NZAA sites proximate to the subject property.

NZAA Site Number	Type	NZTM Coordinates		Description
O04/134	Pa	1625233	6121506	
O04/135	Pa	1625704	6120908	Pairatahi Pa
O04/139	Pa	1626154	6113713	
O04/198	Pa	1624851	6114809	Te Aute Pa
O04/199	Pit/Terrace	1624652	6114808	
O04/200	Pit/Terrace	1624552	6114808	
O04/207	Pa	1624562	6114622	Kerikeri Pa
O04/237	Maori Horticulture	1624024	6124601	
O04/455	Taro	1625727	6123507	
O04/456	Taro	1624640	6118906	
O04/457	Botanical Evidence	1624552	6114708	
O04/459	Ditch	1625624	6124606	
O04/460	Pa	1625424	6124405	Paekakari Pa
O04/485	Pa	1625626	6123906	Paerangi Pa
O04/486	Pa	1625727	6123407	Matako Pa
O04/487	Terraces	1625629	6122707	
O04/489	Pa	1623684	6121539	Wairau Pa
O04/515	Pa	1625132	6121606	Pungaungau Pa
O04/516	Pit/Terrace	1625182	6121656	
O04/517	Pit/Terrace	1625333	6121307	
O04/518	Pit/Terrace	1625334	6120907	
O04/519	Pit/Terrace	1625334	6120907	
O04/520	Pa	1624540	6119106	
O04/521	Pit	1624540	6119106	
O04/522	Pit	1624641	6118606	
O04/523	Burial	1624643	6117907	
O04/524	Ditch	1624542	6118106	
O04/525	Pits/Terrace	1624543	6117806	
O04/549	Pa	1624652	6114608	
O04/550	Pit/Terrace	1624752	6114809	
O04/551	Pit/Terrace	1624751	6114909	
O04/552	Pit/Terrace	1624851	6114909	
O04/553	Pit/Terrace	1624249	6115707	
O04/576	Pa	1626153	6114113	
O04/1069	Flax Mill	1623648	6121394	
O04/666	Pit/Terrace	1625831	6122008	ML 10955
O04/914	Transpot/Communication	1624853	6114109	Road
O04/1047	Industrial	1623967	6123258	Brickworks
O04/1069	Flax Milling	1623648	6121394	Flax Mill
O04/1071	Mission Station	1625042	6113648	

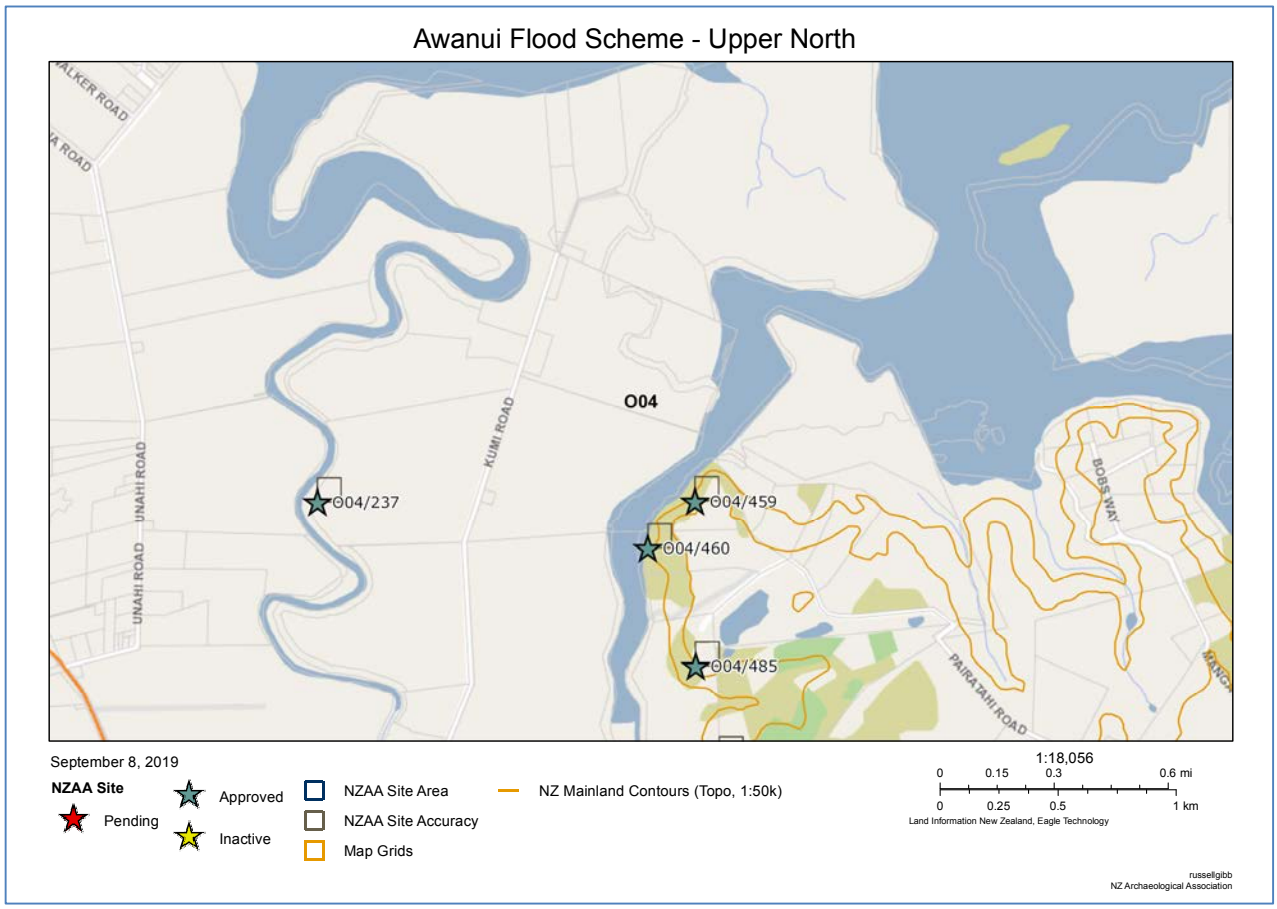

Figure 31: Archaeological sites - Upper North Section. Source: Archsite 2019.

O04/237: Ditch System located east and west of Kumi Road. Much of the site has been destroyed but some ditches were visible when recorded by I. Barber in 1982.

O04/459: A single ditch located near the end of a ridgeline, located about 25m from the end of the ridge. Recorded in 1982 by R. Pollock.

O04/460: Paekakari Pa. A small featureless pa located at the end of a spur that drops sharply away. A shallow 50-80cm deep transverse ditch defends the pa from the approachable side. Recorded in 1982 by R. Pollock.

O04/485: Paerangi Pa. Large platform featuring a continuous ditch, scarp and bank. Recorded in 1982 by R. Pollock.

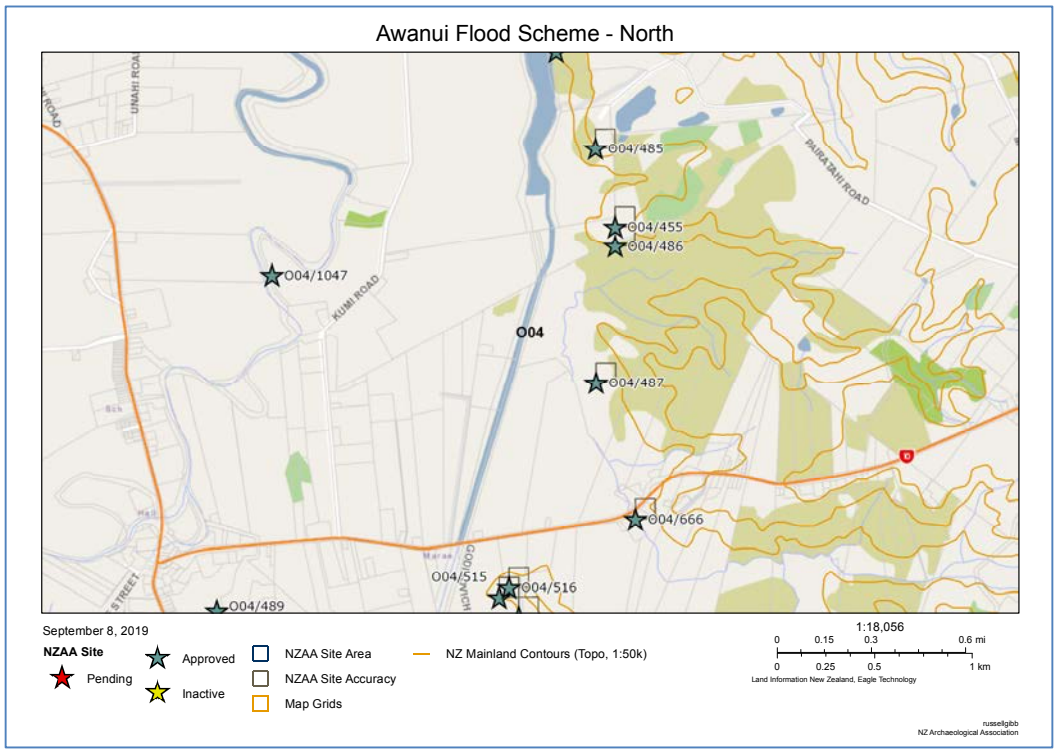

Figure 32: Archaeological sites - North Section. Source: Archsite 2019.

O04/455: An area of Taro that was not properly located, but described as being next to Matako Pa, apparently on a wet terrace and swampy streamlet.

O04/486: Matako Pa, located at the end of Pairatahi Road at the end of the ridge. Pa consists of one large ditch and bank complex and a second internal incomplete ditch, and numerous terraces. A grave belonging to C. H. Williamson is located on the northern side of the pa.

O04/489: Warau Pa, located on the Almond Family Trust property at 5 Far North Road/SH 1, Awanui (Pt Lot 1 DP 91522). This is a small swamp pa with one transverse ditch and another possible ditch, and two pits.

O04/515: Pungaungau Pa located at the end of a low ridge approximately 200m past the spillway bridge. Pa consist of a several terraces and a central transverse ditch.

O04/516: Three terraces located approximately 400m from Pungaungau Pa on a low ridge.

O04/666: The remains of the late 19th century and early 20th century settlement of the Popata family at the foot of California (Karaponia) Hill, destroyed in the construction of the realignment of SH10. The area of possible prehistoric agricultural ditches is now covered by spoil. No remains can be seen in this area. First recorded in 1996 by L. Johnson and revisited in 2000 following road realignment.

O04/1047: Location of possible brick works, thought to relate to missionary Richard Matthews, are currently buried under material dredged by the Northland Regional Council (NRC) river works in 2014. During the late 1960s and 1970s the remains of a rectangular depression, 2m by 5m (approx) and mound could be seen along the river edge as well as a number of complete and broken coarsely made red bricks. It is believed that these features relate to a small brick works located along the Awanui River used for local use and consumption. Local families within the area have examples of these bricks in their possession. The site has been recorded based upon local knowledge of the area and its features by long term residents. Should future works along the river edges be proposed, such as dredging, it is possible they may affect

archaeological features relating to European occupation of the area. Equally, sites relating to Maori occupation may also be uncovered.

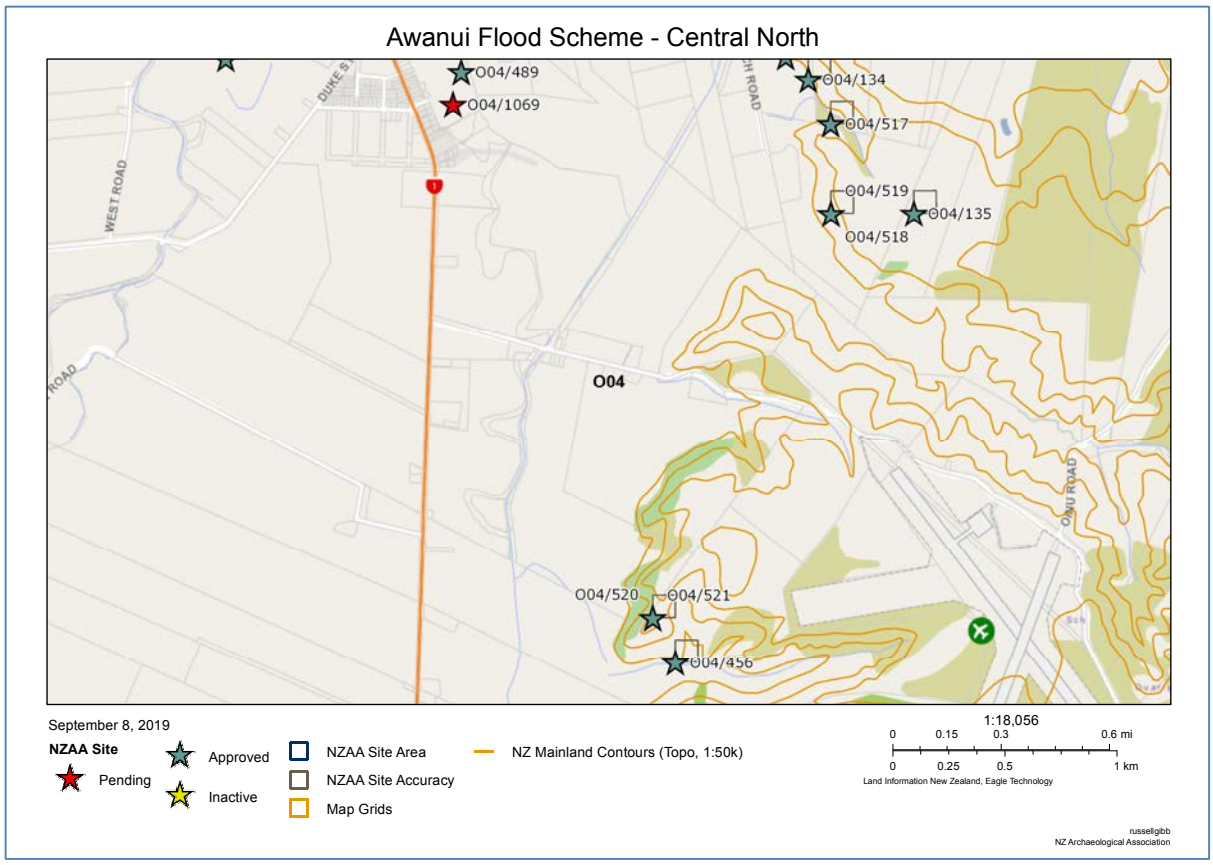

Figure 33: Archaeological sites – Central North Section. Source: Archsite 2019.

O04/134: A small ridge pa at the end of a ridge overlooking Awanui flats, consisting of a single platform. Recorded in 1971 and does not appear to have been revisited since.

O04/135: Pairatahi Pa. Incorrectly located in Archsite. Location needs amending. Consists of a large platform defended on two sides by a ditch and on the other sides by steep slopes, with terraces below.

O04/456: Taro plots evident in four different tributaries on edge and above the historic Whangatane Swamp, and reportedly dating to Maori occupation prior to the farm where they are located being purchased by the Mathews.

O04/517: A pit complex located on the first ridge southwest of Pungaungau Pa. The complex consists of five pits located along the top of the spur with a single terrace containing one pit running alongside one side of the spur.

O04/518: A single pit and two terraces located on the northern side of the gulley on the northern side of Quarry Road.

O04/519: Two pits located on the northern side of the gulley form Quarry Road 67 paces above pit/terrace site O04/518.

O04/520: A single platform pa with a transverse ditch on the southern end and a single pit further down the ridge outside of the pa.

O04/521: Pit as described in site record form O04/520 – single pit 87m down ridge from the pa.

O04/1069: Flax milling site - The remains of a "Bleaching Ground" (as shown on SO 1309 dated 1872). The drying and bleaching ground was associated with the late 19th century flax industry in Awanui. Located on the Almond Property, 5 Far North Road/State Highway 1, Awanui (Pt Lot 1 DP 91522).

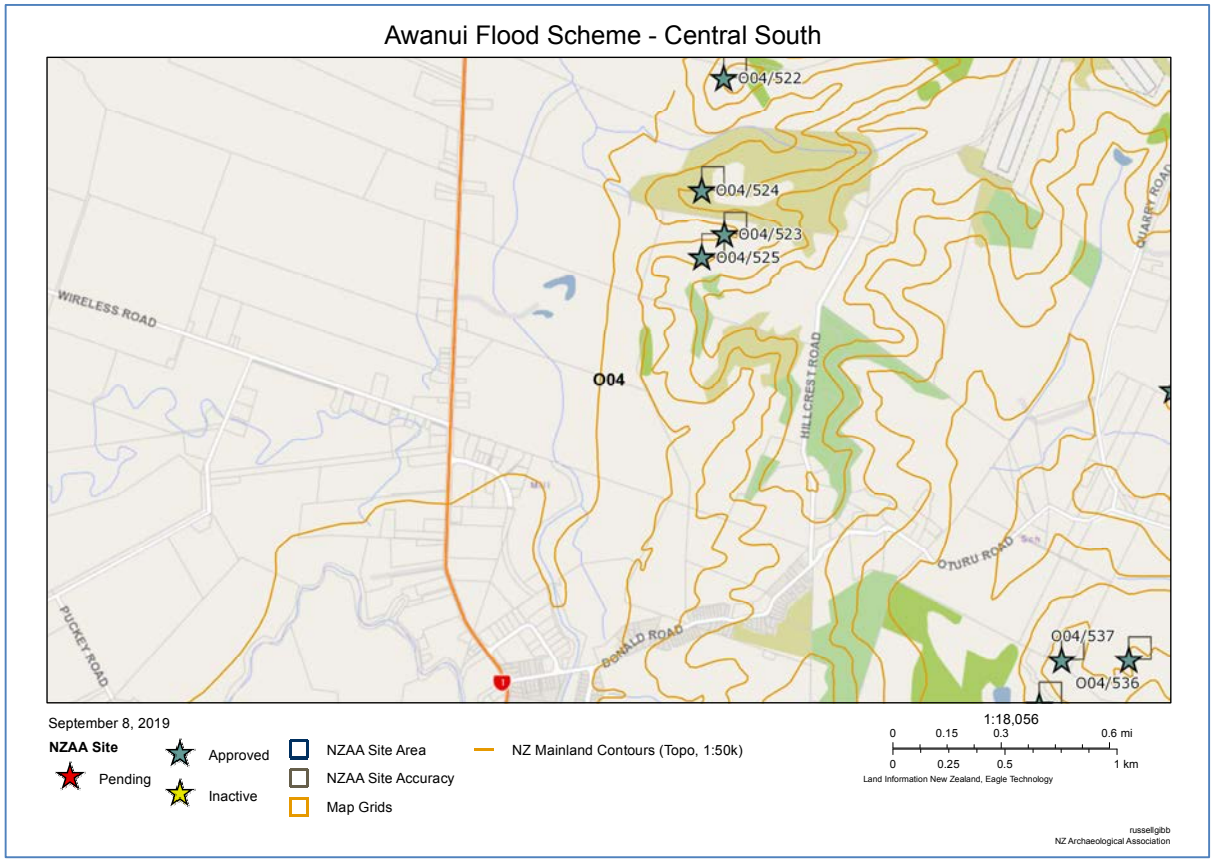

Figure 34: Archaeological sites - Central South Section. Source: Archsite 2019.

O04/522: Large single pit measuring 6.5 x 5.2 x 1.2m deep on a ridge above old swamp.

O04/523: Limestone cave that reportedly has at least one burial within. Was not entered during site visit in 1982 due to water filled entrance.

O04/524: Indistinct ditch located at the end of a ridge measuring 25m long and 1.5m wide. Noted as being in poor condition in 1982.

O04/525: Two pits located on a ridge located on the first ridge after the end of Hillcrest Road. Recorded by R. Pollock in 1982.

O04/536: Oturu Pa. A hilltop pa with ring ditch and double platform, the main platform having a raised rim. This could possibly be a gunfighting pa. Also has small terraces extending down the southwest ridge.

O04/537: Two pits located on a ridge on the second spur down from main ridge in a southwest direction from Oturu Pa.

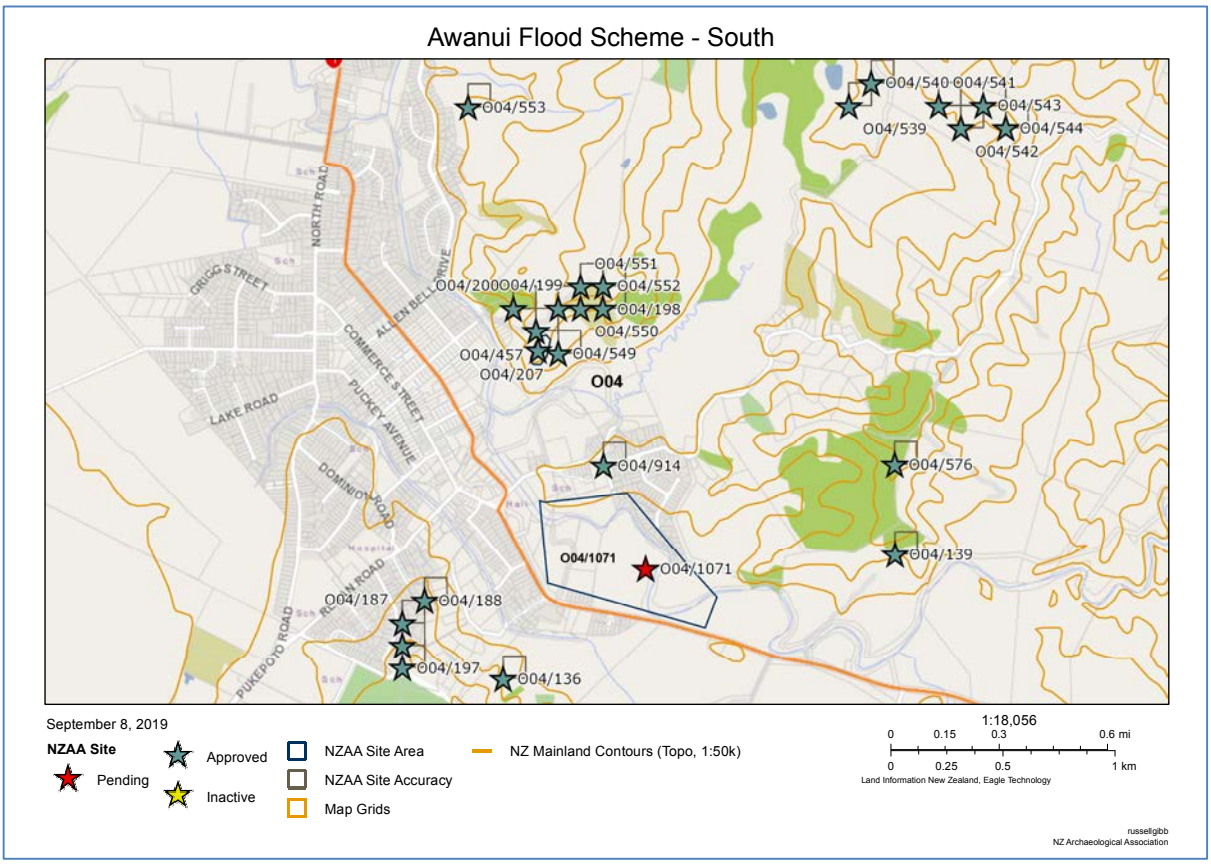

Figure 35: Archaeological sites - South Section. Source: Archsite 2019.

O04/136: The site consists of a single terrace, 10 x 8m, a group of pits and terraces, and a number of amorphous surface depressions. Located off Okahu Road overlooking southern end of town and showgrounds.

O04/139: A ridge pa recorded in 1971 and described at the time as being on a low bush-clad main ridge with terraces that can be seen on below bush edge on grassy face. This is most likely Manurewa Pa as shown on OLC 242.

O04/187: Complex of terraces and pits down a ridge north and below Okahu Road.

O04/188: Series of pits and two terraces on next ridge north of O04/187.

O04/197: Pa that appears to have been a terraced pa but now is almost all levelled.

O04/198: Te Aute Pa, recorded by R. Cassels in 1980 and described as being on high ground southeast of the centre of Kaitaia. A promontory defended by a transverse ditch and bank. The interior used to contain house site(s) with stone-lined fireplaces and most likely also pits. Visible most clearly from Church Road, to the east of Kerikeri Pa; about 100m east of the large wooden cross on top of the ridge leading down to the flats. Described at the time it was recorded as badly damage, but not totally destroyed. Bulldozed sometime between 10-21 January 1980. Half of defences remain, some interior features also.

O04/199: Reported by R. Cassels in 1980. A pit located above Kaitaia, to the northeast of the town centre, on high ground just south of the large wooden cross. Cassels describes at least two deep rectangular pits; the western one excavated by D. Vincent and others in the 1960s. The second pit is intact except for a small bulldozer slice.

O04/200: Recorded in 1980. Pits and a terrace overlooking the centre of Kaitaia, on high ground southeast of the main river up the track from Des Bell's farm, Kerikeri Pa is on the right, and the pits and terrace are

on the left, visible from the top of the hill. The south end of the spur has two deep rectangular pits, each which are approximately 4x2m. x 1m deep. The centre of the spur is covered in long grass and the north end of the spur has a large pit 7x4x1.5m in size and a shallow rectangular depression which Cassels speculated could be a house site. At the time the site was under pasture and it was considered that agricultural activity could cause damage. The site has been adequately preserved.

O04/207: A ridge pa recorded in 1973 located immediately east of the Kaitaia township on the end of the ridge overlooking town. The site was described at the time as having a prominent top with earthworks on the grassy ridge falling to the flat housing area. Some light fern and small bush pockets sit on the face of the site.

O04/457: Taro, recorded by P. Matthews in 1983 as being in a gully between an old house and pa N10/776 694. Derrick Vincent, and old time Kaitaia resident and editor of the Northland Age, believes the taro could be old. The location, however, suggests that post-European times is probable, noted Mathews.

O04/459: A ditch recorded by Robert Pollock in 1982 described as a small, faint ditch feature, 16m long x 4m wide and 50cm deep. It does not cross the ridge completely. The small, shallow ditch is in sloping grassland and is hardly visible in the undulations of the paddock. The ditch is located through a gate at the end of Pairatahi Rd. The ditch is located about 25m back from the point of the ridge in the direction you have come from. No immediate damage is reported as being likely at the time of recording.

O04/533: Complex of three pits and four terraces on a ridge with pine trees plantation on it.

O04/550: Two pits measuring 3.5 x 3.5 x 1m deep and 3.5 x 4 x 1m deep, located approximately 100m up the ridge from the Te Aute Pa. Recorded by R. Pollock in 1982.

O04/551: Four pits located on a slope up the ridge from O04/550. Recorded by R. Pollock in 1982.

O04/552: Two pits further upslope than O04/551. Recorded by R. Pollock in 1982.

O04/553: Recorded by R. Pollock in 1982, the site is a complex arrangement of pit and terrace features covering an area of between 500 and 1000m^2. Said to have been the largest village in the area, named Katakata.

O04/576: Tiki Aitiaiki Pa, described as two or possibly three pa sites with very well defined terraces and pits.

O04/914: Remains of the Aratonga Road located on the southeastern boundary of the St Saviour's Anglican church yard. The road was built by Rev Mathews and W.G. Puckey in 1834 to give access to Te Ahu – the Mission Station.

O04/1071: C.M.S. Kaitaia Mission Station. Site of Maori settlements and horticulture, an area known as Te Ika Hunuhunu, and European horticulture (orchards, whea fields, potato gardens) and houses associated with CMS missionaries Rev William Puckey and Joseph Mathews from 1834. Site of the first colonial land transaction in Muriwhenua, between Chief Panakareao and the CMS, site of local debate/signing of the Treaty of Waitangi.

5.8 Previous Archaeological Work

A review of archaeological reports held by Heritage New Zealand indicates that little archaeological investigation has been undertaken in the Kaitaia/Awanui area.

The first significant body of work was published in 1979, by Anne Leahy and Wendy Walsh who undertook a survey project looking at Northland sites over a period of nine weeks. The main impetus for the survey being that very few sites had previously been recorded in the area, and with the increase in forestry and large land block clearance, there was a requirement for more detailed site surveys.

In 1982, Ian Barber[80] undertook a comparative analysis of archaeological ditch systems in Northland. For this study, Barber defined a classification scheme for drains and ditches and then undertook site surveys of known wetland sites and previously unrecorded sites where he categorised the sites, interpreting them on slope values, attributing ditch type per his classification system and then comparing the different characteristics of each site. He also assessed the threat or vulnerability of the sites. In this study, Barber looked a number of sites around the Kaitaia/Awanui area. A later study by Barber published in 1989[81] presented a refined classification system for traditional horticultural ditch systems in northern New Zealand using four categories (A-D) to make functional interpretations of garden ditch systems, and provide a basis for modelling operational change over time and developing further research strategies. Barber's study addressed issues of field evidence and interpretative difficulties associated with background noise, systematic and consistent reporting and interpretation, and a lack of excavations and empirical data covering a range of site types.

Further studies of wetland ditch systems have been undertaken by Johnson[82] who identified several such systems in the catchment of the Oruru River valley along with comparative systems in the Kaitaia River valley, determining that in these settings, aspects of the natural alluvial topography and hydrological flow were adapted for wetland cultivation. He reasoned that it was these riverine processes that provided the primary context for far-northern prehistoric wetland drainage, rather than the more static wetlands of the Aupouri Peninsula.

In 1986, J. Maingay published an initial report on Northland archaeology that reviewed and described previous archaeological work, determined present land use, and defined research and conservation needs.

L. Johnson undertook an assessment on the proposed realignment of State Highway 10 at Kareponia in 1995, where site O04/666 was located.[83] This was followed up by a report in 2000 on the subsequent monitoring of the works.[84]

In 2004, S. Best and R. Clough undertook an assessment and S.18 exploratory investigation of a proposed subdivision at Ahipara[85] concluding that the area played a significant role in pre-European history, and that the general area was significant in the timber and gum trade. They also published a later report in 2016 on excavations at the site.[86]

There are likely to be a number of other unpublished archaeological assessments undertaken in the area that are not held in the HNZ digital library. The available reports show that very little archaeological excavation has occurred in the immediate Awanui Flood Scheme Area.

Summary

The distribution of recorded sites demonstrates varying scales of occupation on the hills to the east of the Awanui River including numerous pa and terrace/pit sites. Along the flats alluvial lands are evidence of drainage systems and gardens, swamp pa and small terrace/pit sites located on low ridges within what was historically swampy land. Many of the sites have not been revisited since first recorded or have had cursory updates since. Furthermore, most site are poorly mapped and have low locational accuracy with few site extents shown. There also appears to be large gaps in the records where archaeological survey is unlikely to have been undertaken. This dearth of survey data and general archaeological knowledge for the area is compounded by the low number of archaeological investigations undertaken in the area.

[80] Barber 1982
[81] Barber 1989
[82] Johnson 1986, Barber 1989
[83] Johnson, L. 1995
[84] Johnson, L. 2000
[85] Best, S. & Clough R. 2004
[86] Best et al. 2006

5.9 Unrecorded Archaeological Sites

A number of potential hitherto unrecorded archaeological sites around the subject area have been identified from the historic maps and plans listed in Table 2 and from information kindly provided by local resident Kevin Mathews, a descendent of the Rev. J. Mathews. This information is graphically represented in Figure 36-Figure 38 along with the location of recorded archaeological sites as derived from ArchSite. These figures show that a large number of potential sites are yet to be recorded and further research is required.

Figure 36: Archaeological sites – North Awanui Flood Scheme. Recorded archaeological site (dashed circle), archaeological sites interpreted from historic maps (red areas) and potential unrecorded sites from Kevin Mathews' data (solid grey circles).

Figure 37: Archaeological sites – Central Awanui Flood Scheme. Recorded archaeological site (dashed circle), archaeological sites interpreted from historic maps (red areas) and potential unrecorded sites from Kevin Mathews' data (solid grey circles).

Figure 38: Archaeological sites – South Awanui Flood Scheme. Recorded archaeological site (dashed circle), archaeological sites interpreted from historic maps (red areas) and potential unrecorded sites from Kevin Mathews' data (solid grey circles).

5.10 Wet Wood Artefacts

The potential for swamps to contain carved and other wooden artefacts has been borne out by the number of significant taonga which have been discovered in wetlands, usually found by chance during drainage works[87] or during archaeological investigations where swamp environments exist.[88] Maori understood the preservative qualities of wetlands and used them to conserve and store both their taonga and domestic utilitarian items.[89] Maori artefacts found in swamps can sometimes be used to roughly date some soils by providing a broad date based on stylistic or material forms, but only if there is an assumption that they are synchronous.[90] Despite a number of publicly documented wooden artefact finds in the Kaitaia area, almost none of these been recorded as archaeological sites (find spots), further adding to the gap in the archaeological records.

Perhaps the most famous discoveries of wooden artefacts in the Kaitaia area are Tangonge (Figure 39), also known as the 'Kaitaia Lintel', which was found during drainage digging in 1921, located three feet under the ground surface;[91] and the 'Awanui Slab'(Figure 40), which was discovered by George Evans, dug up in the course of excavations that were made for the diversion of the Awanui River to drain a swamp in 1927.[92] It is also highly likely that numerous other artefacts have been found in anaerobic settings over the years as land has been drained and old drains maintained and reworked. For example, a carved canoe prow was reportedly discovered near to where the Awanui Slab was found but the exact location of this discovery was not recorded.

Figure 39: Tangonge – the Kaitaia Lintel discovered in 1921.

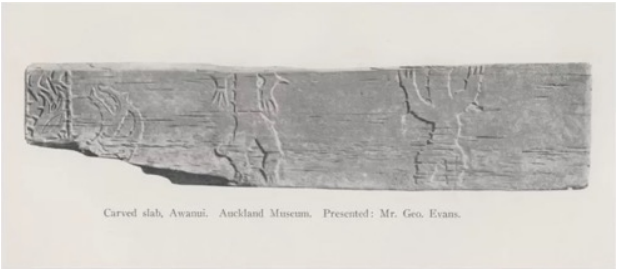

Figure 40: The Awanui Slab, discovered in a drain in 1927.

5.11 Other Heritage Sites and Features

Kerekere (Kirikiri) Pa (O04/207) is recorded as a Site of Significance to Maori in the Far North District Plan (No. MS05-72) and Kelly's Bush, to the north of Bells Hill, is recorded as a waahi tapu site (No. MS05-73).

Statutory Acknowledgement Areas
A statutory acknowledgement is a formal acknowledgement by the Crown recognising the mana of tangata whenua in relation to a specified area. It recognises the particular cultural, spiritual, historical, and traditional association of an iwi or hapu with the statutory area. The Whangatane Spillway is a Statutory Acknowledgement Area for Ngaitakoto (Plan: OTS-073-06) along with the Awanui River (OTS-073-07), which is also recognised by Te Rawara (OTS-07405).

[87] Barr 1989
[88] Irwin 2004 (ed)
[89] Johns 2001
[90] McGlone 1989:122
[91] *Evening Post* 28 June 1921:7
[92] *Otago Daily Times* 6 April 1927

6.0 Results

Site visits for the Awanui Flood Scheme Project area were undertaken by Russell Gibb over two weeks in August/September 2019 with all the areas that are proposed to undergo flood protection works were inspected. The scheme and findings are discussed per NRC scheme development map sheet below.

Map Sheet 1

Figure 41: Map sheet 1 and associated archaeological features.

Proposed Flood Prevention Work

A spillway will be excavated across the flat paddocks from the river near the eastern extent of the C.M.S Mission Station and join the river to the east on the Peterson property. Along with excavation for the spillway, earthworks will be required to batter back the bottom of a ridgeline that will border the spillway, where an unrecorded pit/terrace complex is located (annotated as Kanitatae on the above figure). This will result in the archaeological mitigation and removal of the lower two terraces on this site.

Archaeological Issues

The proposed spillway will pass over land where cultivations were recorded in 1887 (SO 4363) and earthworks will also affect the lower terraces of the unrecorded site. The closest recorded site to this pit/terrace complex is O04/139. The site record form for O04/139 is slightly ambiguous – it records this site as a pa with terraces seen below the bush edge on a grassy face, and notes it is possibly a doubling up of sites in this area. The location shown on Archsite is below the true location of Manurewa Pa as shown on OLC 242 and it is likely that this is the site the record refers to. There appears to be some confusion with the recording of O4/139 and O04/576 Tiki Aitiaki Pa to the north. The site record form for O04/576 describes it as 'two, possibly three adjoining pa sites' so it appears that the original record for this site has included Manurewa Pa (O04/139) as part of the site.

This unrecorded pit/terrace site at the bottom of the ridgeline is actually a set of well-defined terraces with pit/whare depression on several of the terraces and no indication of any defences aside from the natural slope of the ridgeline (Figure 42-Figure 45). The terraces can be seen at various points leading up the ridgeline that leads to the bush area where O04/139 is actually located, approximately 450m away. Kevin

Mathews attributes the name Kanitatae to this pit/terrace site. The name Kanitatau is shown on OLC 242 further upslope and appears to be a boundary marker name (Figure 46).

Figure 42: Looking east from the terraces at the area where cultivations were recorded in 1887.

Figure 43:Looking north across the top of the pit/terrace complex.

Figure 44: Looking south over a house/pit and lower terrace on the pit/terrace complex.

Figure 45: Looking east at the pit/terrace complex and ridgeline leading to O04/139.

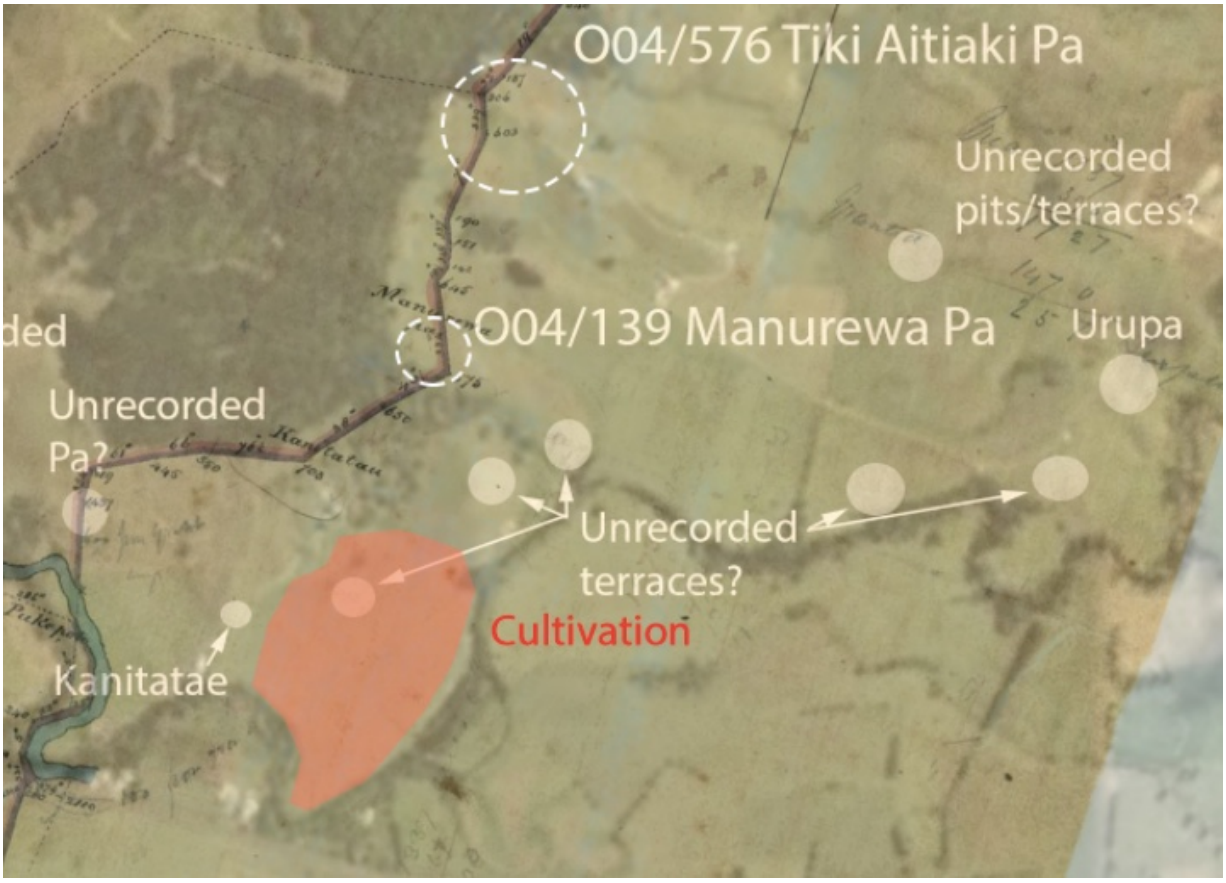

Figure 46: Overlay showing location of name Kanitatau on OLC 242 in relation to Kevin Mathews' Kanitatae (where the pit /terrace site is located), and Manurewa Pa.

Map Sheet 2

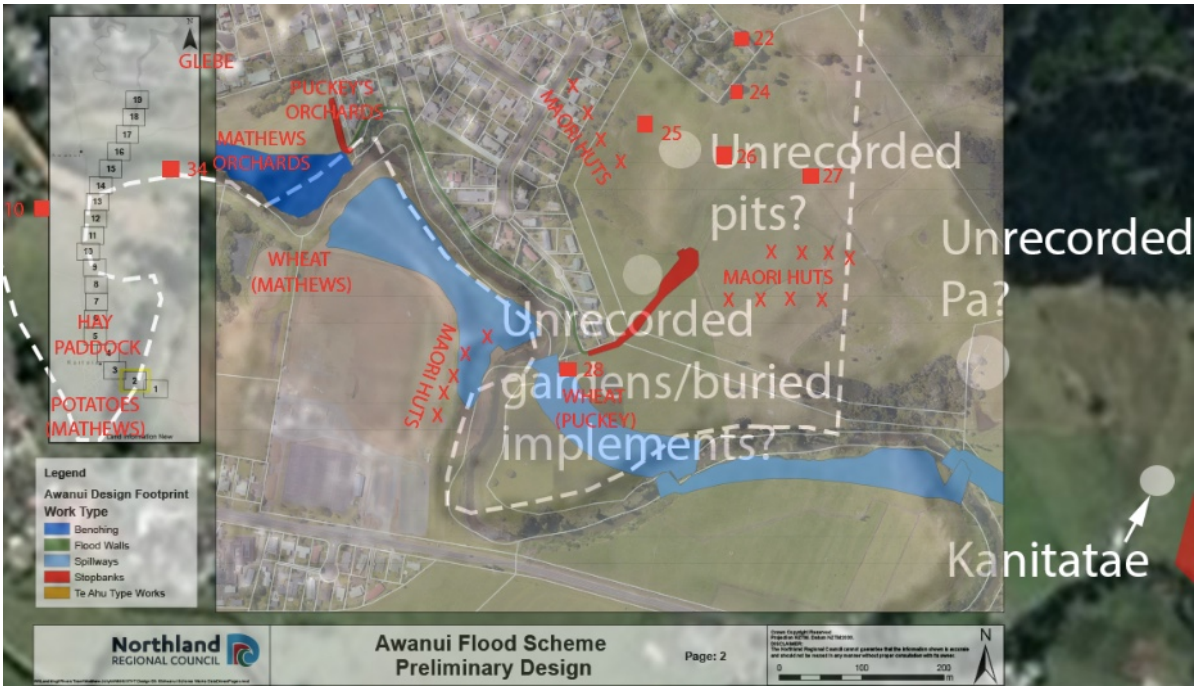

Figure 47: Map sheet 2 and associated archaeological features.

Proposed Flood Prevention Work

An existing spillway (Figure 48) across the end of the Te Hiku Sports Hub will be re-contoured and spoil heaps from the original spillway excavation redistributed, possibly to form a BMX park. Eroding river banks on the western bank of the river (Figure 49) will be battered and an extension of the spillway will be excavated on the flat bend to the east. The main area of Te Hiku Spots Hub consists of playing fields and a recently sealed car park with surrounding stopbank (Figure 50). Much of this area was Mathews wheat growing fields and also the location of a number of Maori whare.

Figure 48: Looking southeast over the spillway at northern end of Te Hiku Sports Hub. The playing fields are to the right of the image beyond the fence line and stopbank.

Figure 49: Eroding river bank and spoil mound on the east side of the Te Hiku Sports Hub.

Figure 50: Looking east over the Te Hiku Sports Hub from atop the eastern stopbank.

Archaeological Issues

The Te Hiku Sports Hub has been built over land formerly associated with the C.M.S. Mission Station - recorded as site O04/1071. Buildings and features associated with the Mission Station have been extracted from an overlay of the sketch plan of the station circa 1860s, and are shown in red in the above figure. These include the location of Maori huts, Puckey's and Matthews' wheat fields, and Puckey's barn (No.28).

The current spillway has likely destroyed any archaeological evidence within its footprint and the large stopbank that has been formed on the inland side of the spillway will have covered over any underlying in situ archaeological deposits. However, there is some archaeological potential between the stopbank and the river where the eroding banks will be excavated and stabilized, where evidence of Maori huts and occupation might be found. The new spillway that will cut across the river bend on the eastern flat, where Puckey's barn was located, has some archaeological potential and any barn remains would be a significant archaeological feature.

Map Sheet 3

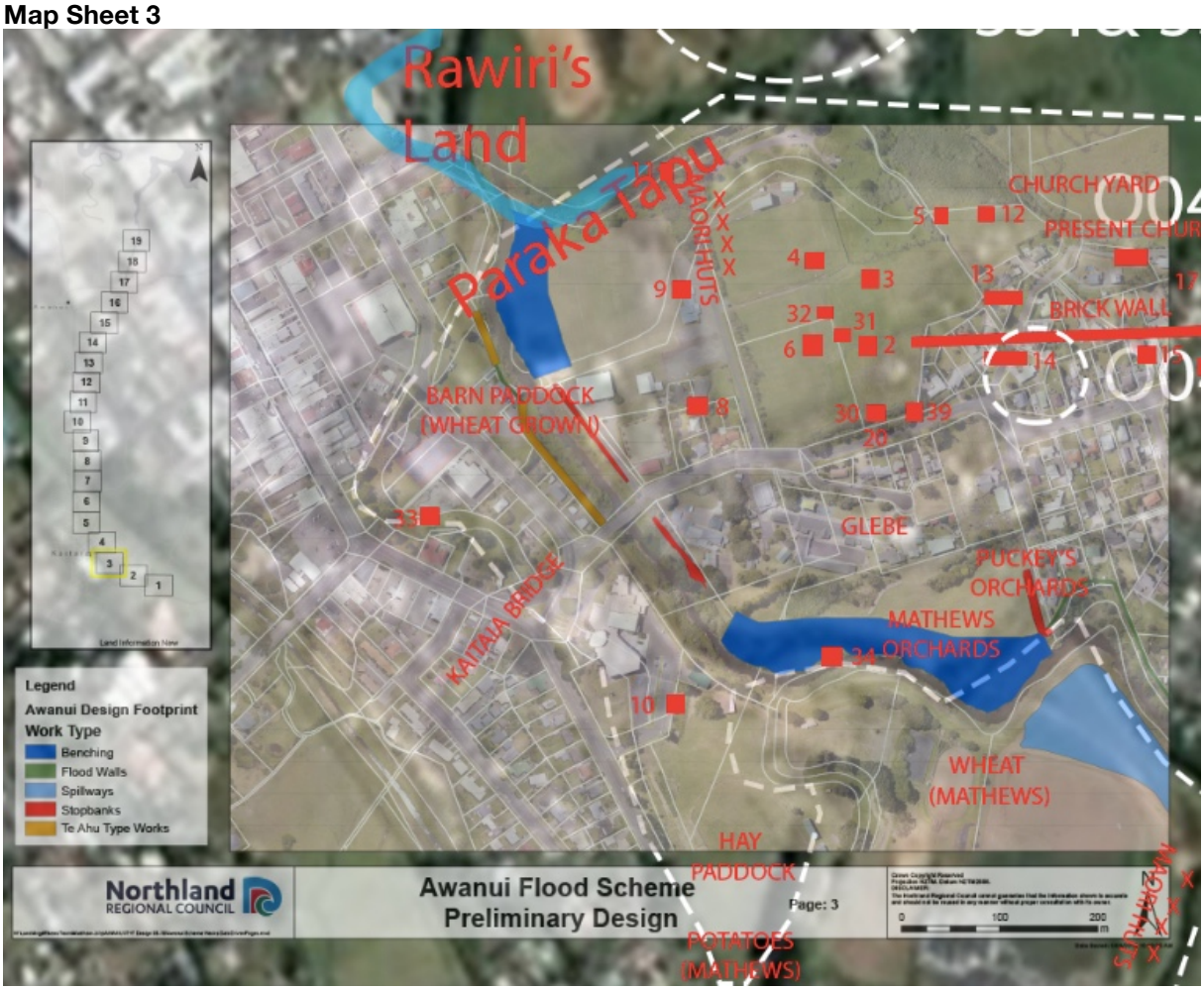

Figure 51: Map sheet 3 and associated archaeological features associated with the C.M.S. Mission Station.

Proposed Work

Two benches are proposed: one along the river edge on the school field with a north-south oriented stopbank on the eastern field boundary, and a second bench to the west along the river edge at the rugby club. The western bench area currently has a large stopbank over it (Figure 52-Figure 54). There is written evidence that spoil extracted from the river was used to build up or level the school field but the extent and depth of this fill is not known. This event was described in the 1931 annual Drainage Board report:

Other works entailed in connection with the cut were the erection of fences and the provision of a new playing-area for the Kaitaia School. This has been drained, cleared, and ploughed, and will be finally worked up and levelled for sowing of grass as soon as the ground is in favorable condition.

Archaeological Issues

The eastern bench is in the location of Mathews' and Puckey's orchards and the western bench is in the location of the Barn Paddock where wheat was grown - both are within the C.M.S. Mission Station grounds. Both areas have limited archaeological potential. The area where the western bench will be constructed is annotated as Paraka Tapu (Tapu Paddock) on SO 776 (1), but the reason for this naming convention is not known.

Figure 52: Looking north along the stopbank besides the rugby fields.

Figure 53: Looking north from the stopbank across the rugby fields with Kerikeri Pa in the background.

Map Sheet 4

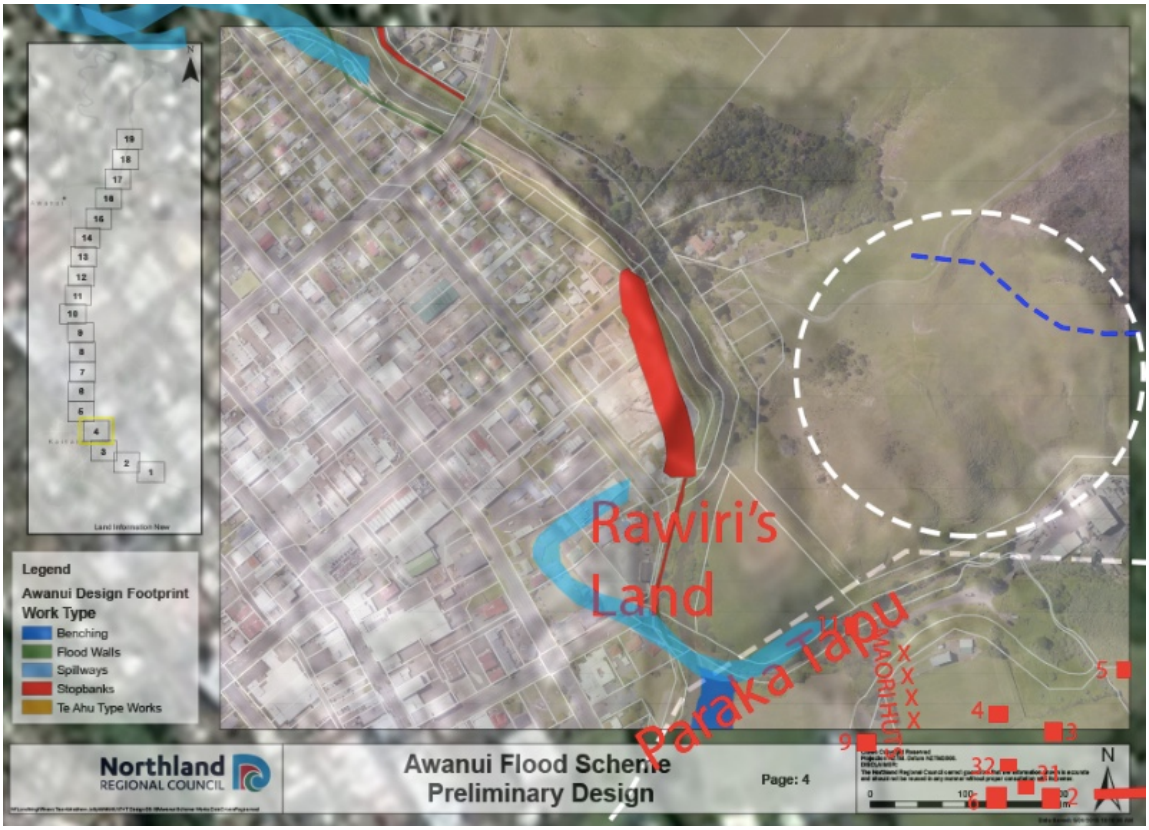

Figure 54: Map sheet 4 and associated archaeological features.

Proposed Work

The work proposed in Map Sheet 4 (Figure 54) has already been undertaken due to concerns that a historic slip face could potentially fail and block the river. This work included benching on the western river bank and distribution of spoil over the flat paddock on the eastern side – an area known as Rawiri's Land or Rawiri's Ground, as shown on plan OLC 242 (1859). Rawiri's Ground was delineated by the old course of the Awanui River and was subsequently modified by the river deviation known as the 'School Cut', which was dug during the 1930s to divert the Awanui River from central Kaitaia to its present course past the base of Bell's Hill. The western side was subsequently developed in the intervening years, while the eastern remnant remained as farmland until the recent flood prevention works.

Archaeological Issues

This area was assessed by the author[93] and three test trenches were dug on the eastern side to test for possible archaeological features. No features were identified and the NRC was advised to proceed under an ADP. An area of swamp at the base of the hill was interpreted as being a modern event, formed by water trapped by the raised track than ran west-east across the paddock near the base of the hill.

The Muriwhenua Land Report[94] cites records associated with Joseph Matthews, a Government official, who recorded 'many native plantations' on the Church Missionary Society's land in 1848, with 35 to 40 acres of wheat and potatoes there. Matthews also noted that Maori were cultivating 'Rawiri's Ground' on Joseph Matthews' farm as late as 1856, although there does not appear to have been any buildings associated with the Kaitaia Mission Station or Maori occupation erected on this land. Matthews testified in 1848[95] that Kaitaia Maori had a village and plantation on the mission station and the two chiefs guarding the settlement (Rawiri Tiro and Kepa Waha) were living inside his property on Otararau adjoining the mission station and had done so ever since the station was formed. Rawiri's Ground is also annotated as 'Rawiri's Land' on Block Sheet SO 1628 (1878).

[93] Gibb 2018
[94] Wai 97
[95] Joseph Matthews to Church Missionary Society, 13 April 1848.

Map Sheet 5

Figure 55: Map sheet 5 and associated archaeological features.

Proposed Work
Existing stopbanks will be enhanced and new stopbanks will be constructed along either eastern perimeter of Allan Bell Park (Figure 55). Some river deviation may be required to address erosion issues associated with large trees on the east bank at the north end of the park.

Archaeological Issues
There are no known sites within in the park and it appears as some spoil has been distributed in the park previously, and modern drains dug to drain to the river. Proximity to O04/533 – a large village area known as Katakata located in the low hills to the northeast of the park does suggest some archaeological potential, and to unrecorded cultivations shown in SO 1305 immediately to the north of the park suggest some archaeological potential (Figure 56-Figure 57).

Figure 56: Looking southeast across to the east bank of Allen Bell Park where the stopbanks will be built.

Map Sheet 6

Figure 57: Map sheet 6 and associated archaeological features.

Proposed Work

Some minor stopbank remedial work along a major junction between the Awanui River and Whangatane Spillway at the southern end of the map sheet area (Figure 57).

Archaeological Issues

These works are proximate to an area of unrecorded cultivation (SO 1305) that may have extended to the river's edge but this is almost completely under commercially developed land, and given the minor scale of works which will be limited to enlarging the exiting stopbanks, are not likely to impact this area (Figure 58).

Figure 58: Looking southeast from the west bank at the area to be benched on the east bank.

Map Sheet 7

Figure 59: Map sheet 7 and associated archaeological features.

Proposed Work

Large benching, stopbank construction and excavation of a large spillway (Figure 59).

Archaeological Issues

Given the close proximity to the large village of Katakata (O04/553), unrecorded cultivations to the south and the historic path of the Whangatane River, this area is assessed as having a degree of archaeological risk associated with the proposed development given the scale of works (Figure 60-Figure 61).

Figure 60: Looking northwest from Donald Road over the area to be benched.

Figure 61: Looking east at paddocks where spillway will be excavated.

Map Sheet 8

Figure 62: Map sheet 8 and associated archaeological features.

Proposed Work

Works through this area consist of a continuation of the spillway from the south and a large bench along the eastern bank (Figure 62).

Archaeological Issues

Although there are no recorded sites in the immediate area, the works are in close proximity to the large village of Katakata (O04/553) as well as two possible unrecorded pa sites to the east - Puke Kohikatoa and Tarapunga.

Map Sheet 9

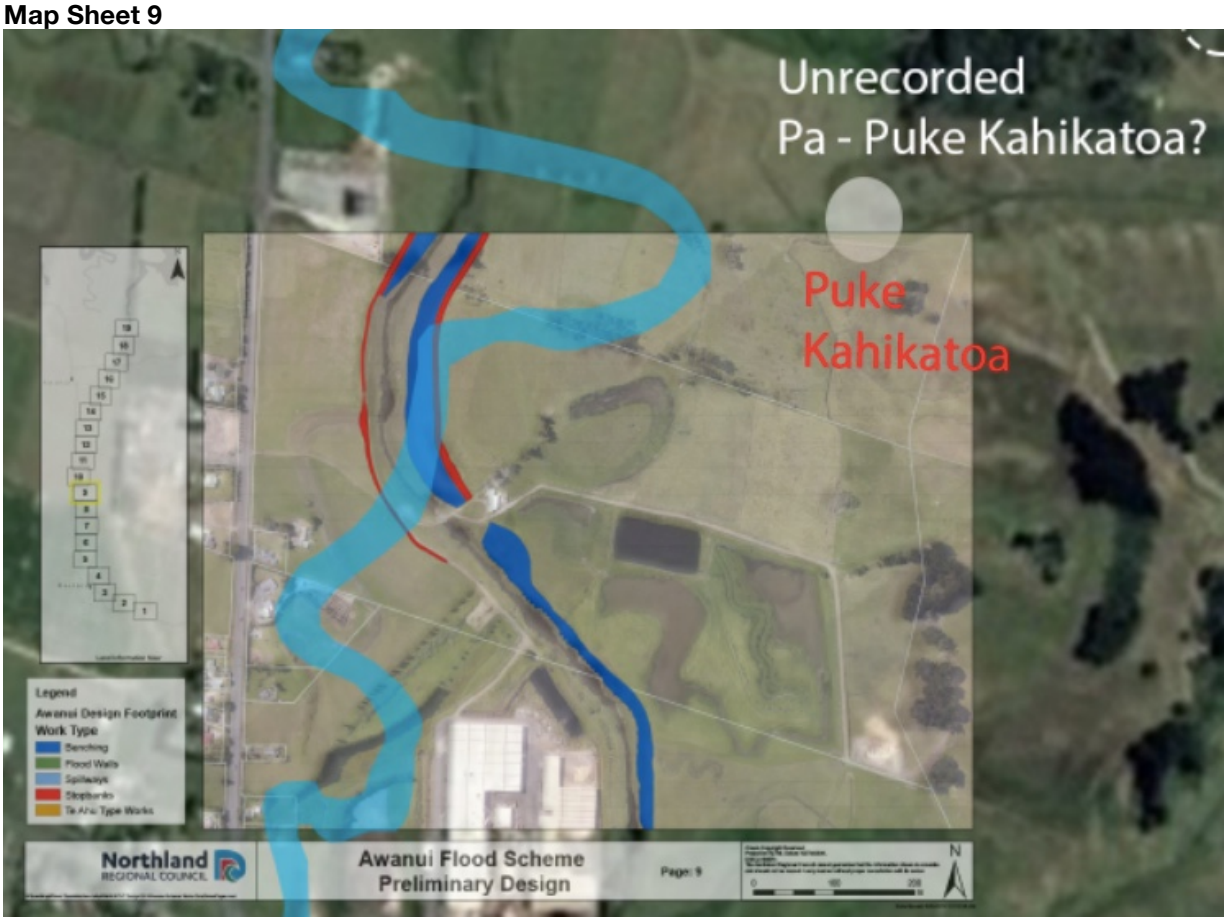

Figure 63: Map sheet 9 and associated archaeological features.

Proposed Work

A continuation of the benching from the south and stopbank development along both banks (Figure 63).

Archaeological Issues

The scale of works through this area with significant areas proposed for benching as well as the proximity to the old river path, several munga and a possible unrecorded pa site named Puke Kahikatoa suggest some archaeological risk.

Map Sheet 10

Figure 64: Map sheet 9 and associated archaeological features.

Proposed Work

A continuation of the benching from the south and stopbank development along both banks (Figure 64).

Archaeological Issues

Proximity to two possible unrecorded pa sites to the east and north and the old Whanagtane River channel suggest a high level of archaeological risk.

Map Sheet 11

Figure 65: Map sheet 11 and associated archaeological features.

Proposed Work

Benching and stopbank construction on either side of the spillway on an historic bend of the Whangatane River.

Archaeological Issues

Close proximity to a possible unrecorded pa site and a number of archaeological sites in the hills to the west (Figure 65).

Map Sheet 12

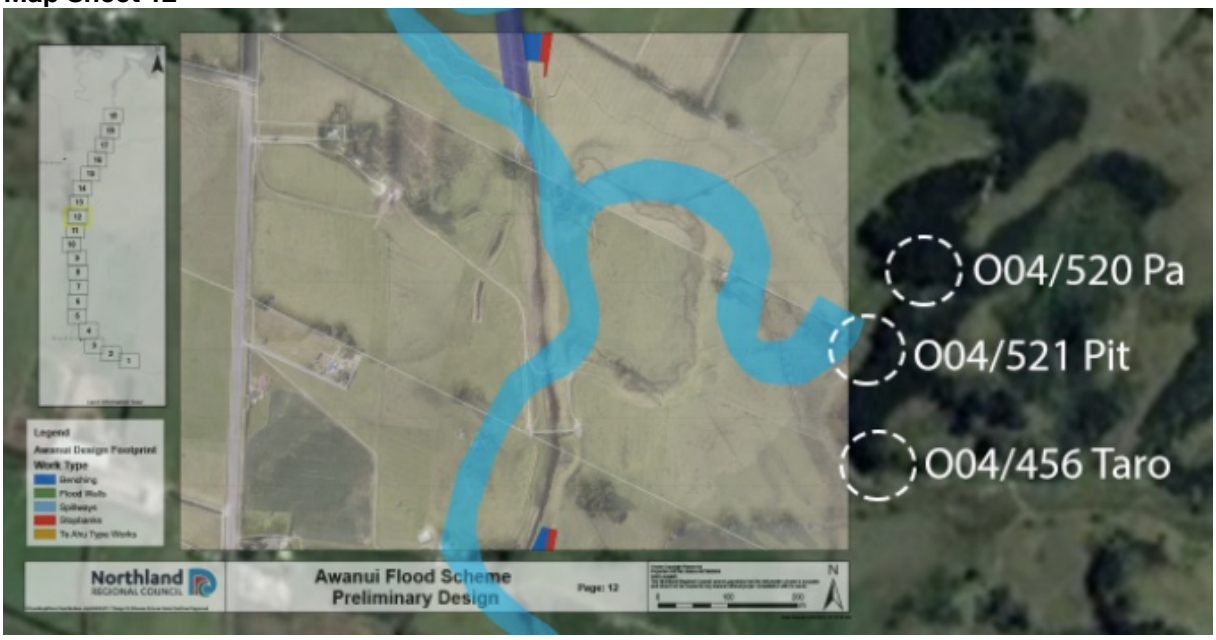

Figure 66: Map sheet 12 and associated archaeological features.

Proposed Work

Minor benching and stopbanks at the north and south of the area (Figure 66).

Archaeological Issues

Close Proximity to a number of archaeological sites in the hills to the west that were probably accessed by via the old Whangatane River channel. This munga was likely a main waterway used in prehistoric times to gain access to the foothills below the pa.

To the immediate north of this area is the location where several significant wet wood artefact finds have been discovered during drainage works.

Map Sheet 13

Figure 67: Map sheet 13 and associated archaeological features.

Proposed Work

Benching and stopbank construction on both sides of the spillway in an area where historic deviations have been undertaken and artefacts discovered (Figure 67).

Archaeological Issues

This is the area where the Awanui Slab and a carved canoe prow were discovered during separate drain digging episodes. The slab was found near the northern deviation (purple section) and the canoe prow somewhere near the southern deviation. The old Whangatane River channel branched off here to the west towards the hills where a number of sites are located. This is an area of high risk of archaeological discovery.

Map Sheet 14

Figure 68: Map sheet 14 and associated archaeological features.

Proposed Work

Benching and stopbank construction on either side of the Whangatane Spillway in what was the old Whangatane River channel (Figure 68).

Archaeological Issues

Given the close proximity to the artefact find areas immediately south, and similar old-channel river environment, this is area with a high-risk of archaeological discovery (Figure 69-Figure 70). There is also a possible unrecorded pa named Parekahariki Pa to the north, identified from historic map SO 776.

Figure 69: Looking north from Quarry Road at area of proposed benching area.

Figure 70: Looking south from Quarry Road at area to be benched on the left bank.

Map Sheet 15

Figure 71: Map sheet 9 and associated archaeological features.

Proposed Work

No work is scheduled for this area (Figure 71.

Archaeological Issues

None

Map Sheet 16

Figure 72: Map sheet 16 and associated archaeological features.

Proposed Work

Benching and stopbanking along the west bank of the spillway and a small section of stopbank on the east bank (Figure 72).

Archaeological Issue

This area of spillway passes through an area with many archaeological sites to the east and possible unrecorded sites to the east. Some of the drainage sites in this area have been poorly mapped with little detail as to the extent of sites.

Map Sheet 17

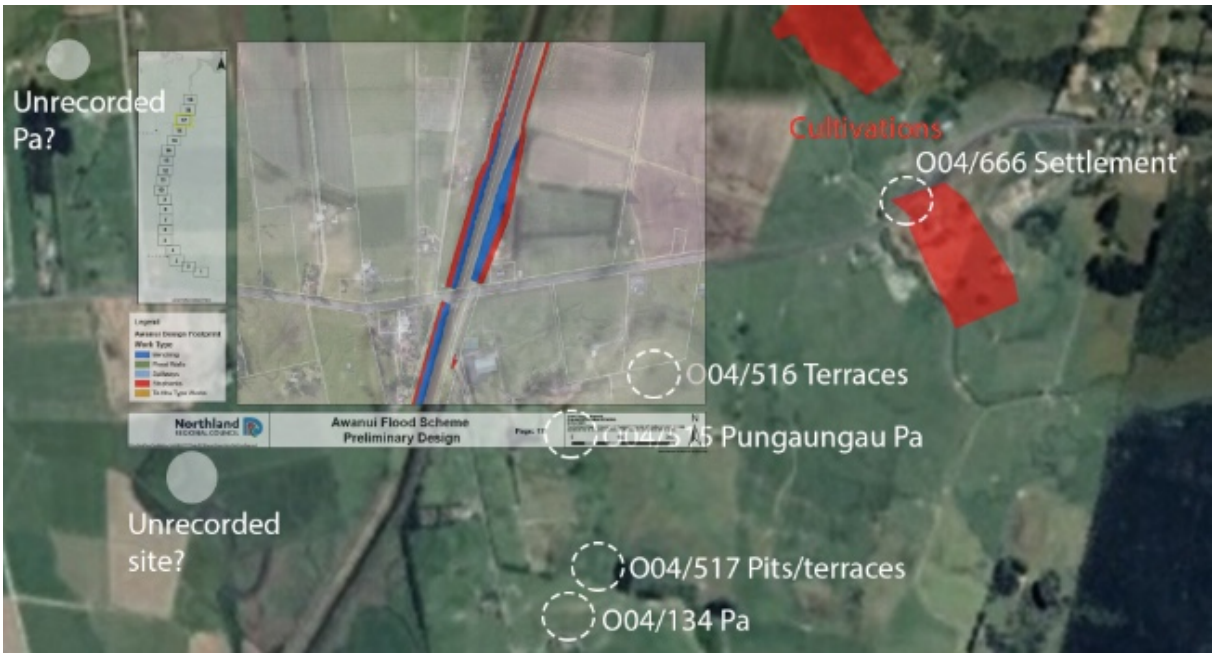

Figure 73: Map sheet 17 and associated archaeological features.

Proposed Work

Benching and stopbank development along both sides of the spillway north and south of SH10 (

Archaeological Issues

This area of spillway passes through an area with many archaeological sites to the east and north and possible unrecorded sites to the east, as well as large cultivation areas to the east shown on historic maps. It is an area where drainage sites are historically known but not recorded (Figure 74-Figure 75).

Figure 74: Looking south along the Whangatane Spillway from SH10. The right bank will be benched and the stopbank rebuilt.

Looking north from SH10 at the Whangatane Spillway. Both banks will be benched and stopbanks upgraded.

Map Sheet 18

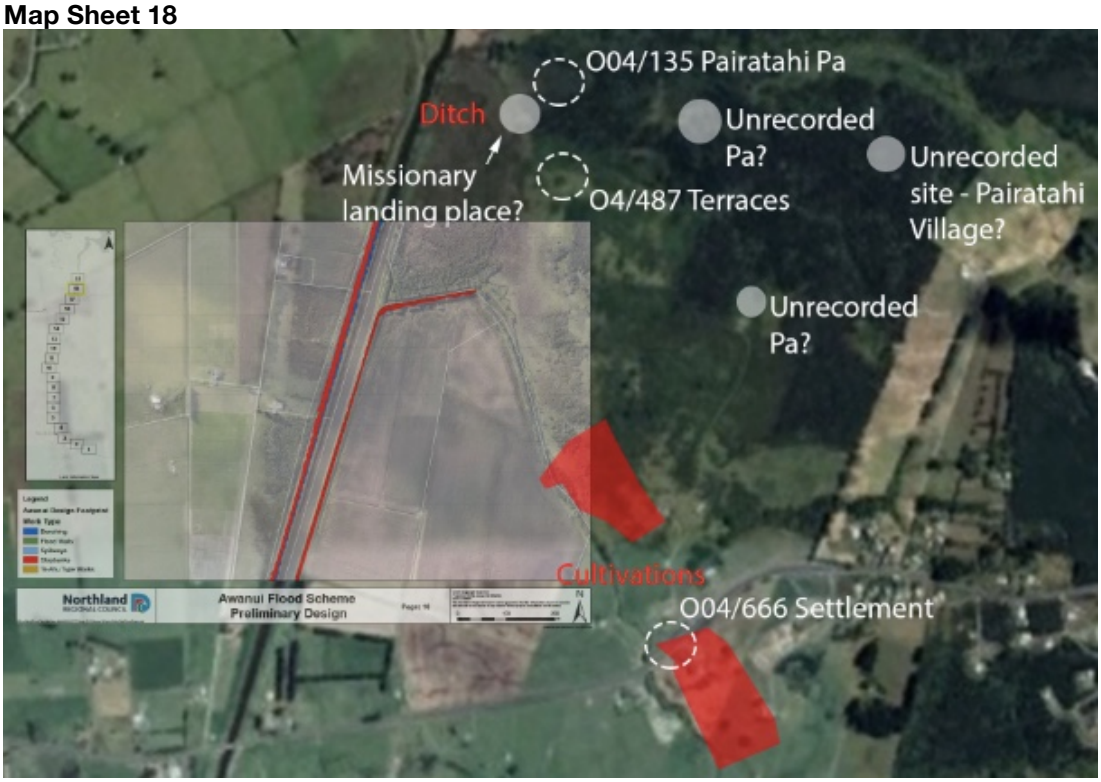

Figure 75: Map sheet 18 and associated archaeological features.

Proposed Work

Extensive stopbanks along each side of the spillway (Figure 75).

Archaeological Issues

This area of spillway passes through an area with many archaeological sites to the east and north including large cultivation areas to the east shown on historic maps. It is an area where drainage sites are historically known but not recorded and also where the Whangatane Spillway connects to the Pairatahi River – an important waterway used by both Maori and early European settlers.

Map Sheet 19

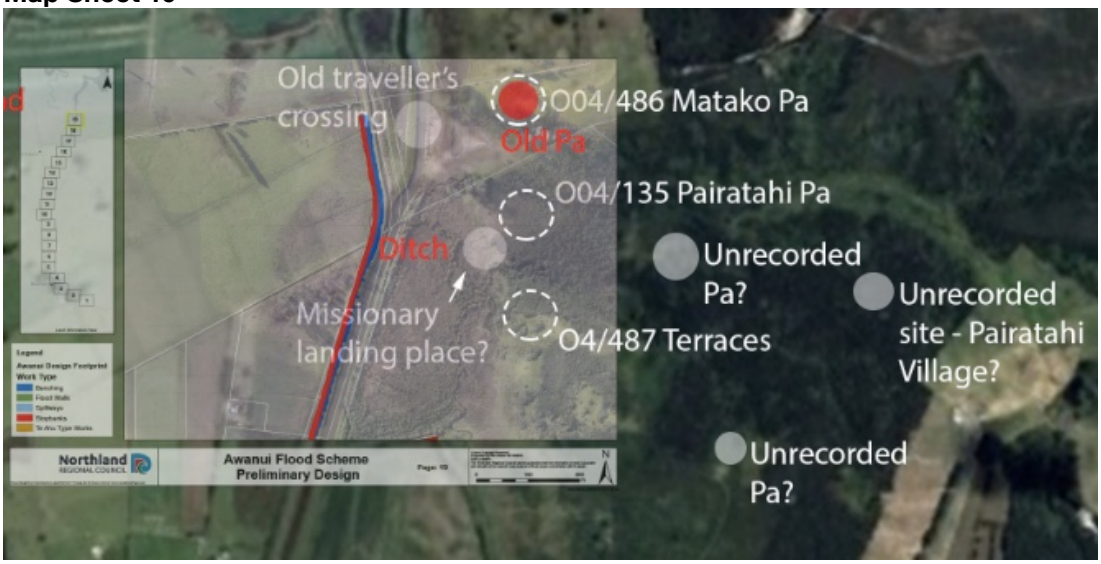

Figure 76: Map sheet 19 and associated archaeological features.

Proposed Work

Benching and stopbank construction on the east bank of the Whangatane Spillway/Pairatahi River (Figure 76).

Archaeological Issues

The eastern area has a high density of recorded and unrecorded sites and the connection to the river here was an important landing place for both Maori and Europeans, both via river travel and overland.

6.1 Field Survey Summary

The river channels and banks of the Awanui River, Whangatane Spillway and Pairatahi River have been significantly modified over time at various points along their respective paths. Today these waterways are shaped largely by the flood control measures that have been constructed over time, such as benched terraces, stopbanks, spillways and lateral drainage ditches. No obvious archaeological features were noted along the waterways. In general, the stopbanks are covered in kikuyu of varying lengths, and the benched flood terraces similarly covered with rank grasses. It appears that in most cases that the stopbanks have been formed utilizing material directly excavated from benches and from dredged material deposited over the stopbanks and levelled off. No historic bridge remains were encountered but there are a number of culverts and lateral drains that feed into the waterways.

None of the sites that were identified on the historic maps and plans, or detailed by Kevin Mathews, have been visited, simply because the majority are not located within the development corridor and this assessment doesn't have the scope to investigate these fully. However, there are several potential sites that are contiguous with the AwanuiRiver/Whangatane Spillway and these will require further inspection prior to works beginning, but none of these are in areas to be developed during the 2019/20 work schedule.

Although many areas appear to have undergone significant modification the potential for archaeological discovery is high in a number of areas. The density and proximity or recorded archaeological sites and potential sites that have yet to be investigated and recorded suggest a rich and diverse archaeological landscape. This, coupled with previous archaeological finds, suggests a high risk of archaeological discovery in some areas to be developed during the flood scheme programme.

Areas such as the C.M.S Mission Station grounds - although highly modified and to the general observer completely reworked – has a number of areas with high archaeological potential. This site is one of the most important early European sites in Northland, yet no archaeological investigation has taken place on any of the station areas. Similarly, areas where significant wooden artefacts have been recovered have been given little consideration as archaeological sites.

It is apparent from the research material gathered for this assessment, and also provided by Kevin Mathews, that the site distribution in the area is far greater than is currently demonstrated by the archaeological records and further research is imperative for several reasons. There are a large number of unrecorded sites and areas that should be investigated further. The quality of the existing site records for the area is poor and would benefit greatly from resurvey with updated plans and accurate locations for each site. This is important as more land is developed and sites are lost through lack of public knowledge.

6.1 Constraints and Limitations

Change to the land surface through farming and infrastructure development tends to remove the surface signature of archaeological features. Field inspection, probing and limited sub-surface testing cannot necessarily detect all sub-surface features which is a general limitation to field survey on modified ground, especially where this modification is long-term and repetitive, or where deep fill events have taken place. In Kaitaia, urbanisation has destroyed or covered over many archaeological sites, and farming removed the surface signature of prehistoric agricultural drainage systems.

7.0 Archaeological Values

HNZPT has provided guidelines setting out criteria that are specific to archaeological sites (HNZPT 2006:9-10). The archaeological values of sites relate mainly to their information potential, that is, the extent to which they can provide evidence relating to local, regional and national history through the use of archaeological investigation techniques, and the research questions to which the site could contribute. The surviving extent, complexity and condition of sites are the main factors in their ability to provide information through archaeological investigation. Only one recorded archaeological site will be directly affected by the proposed works: O04/1071 – the C.M.S Mission Station (Appendix 1). The archaeological values for O04/1071 are assessed in 4 below.

Table 4: Significance assessment table for 004/1071.

Value	Assessment
Condition and Integrity	The site is in poor condition having been developed into sports fields, residential areas, car parks, spillways and school grounds. Very little original sub-surface archaeological material is thought to remain.
Rarity/Uniqueness	The site is quite rare due to its northern location and history of expansion, and fairly unique given its size and its peak.
Contextual Value	The Mission Station was one of several early European religious missions from competing denominations established in the Far North in the 1800s. It was an important link between early European settlers, Government and local Maori.
Information Potential	The site offers limited information potential from an archaeological perspective having been significantly modified and now largely devoid of any original buildings. Information that may be gathered through archaeological excavation includes analysis and interpretation of ceramics and other historic artefacts, historical mission structures, and Maori settlement areas and artefacts and datable material.
Amenity Value	The location is mainly in the public domain but currently has very little amenity value.
Cultural Associations	The Whangatane River is associated with NgaiTakoto, Te Rawara and Ngati Kahu nd their traditional use of the waterway for transport and mahinga kai.

8.0 Assessment of Effects

The Awanui Flood Scheme programme will be spread over several years and be largely undertaken during the drier summer months. Some areas signalled for flood prevention work will require significant earthworks and there is a chance that unrecorded archaeological material may be encountered during earthworks. The earthworks required for the project will essentially be excavation for spillways and benches, and construction of stopbanks using excavated material.

Given the density of sites near the waterways, history of archaeological finds associated with drains, and general historical use of the waterways as transportation conduits, the probability of encountering archaeological material is assessed as quite high, regardless of previous modification. Especially when considering that research has shown there to be a large number of unrecorded sites in the area. The likelihood of further wetland agricultural systems being encountered outside of the areas of known archaeological features is also likely given the presence of these as shown in the historic maps. Areas of old unmodified stream channel or mungas also have the potential for the discovery of buried wooden artefacts, especially near areas where these have previously been discovered.

The sheer scale of the works on areas of largely unmodified pastoral ground between the waterways and the eastern hills, where the densest prehistoric occupation occurred in the area, supports a hypothesis of archaeological discovery during the works programme.

Archaeological monitoring of all initial earthworks will be required and archaeological investigation of any features discovered during this process. This will be done under authority from Heritage New Zealand with an authority required for all the projected works.

However, the planned works will be staged over several years and the current schedule planned for the 2019 season is to only undertake works at three sites identified on Map Sheets 2, 5 & 7, and known as the Te Hiku Sports Hub Spillway, Allen Bell Park Channel Improvements and Juken Spillway works.

Juken
A new spillway will be dug across the paddock to connect to the existing spillway corner immediately east of Juken's yard. Spoil will be used to form the new bund/spillway bank on the west bank of the new spillway and the excess spoil will be spread adjacent to this area and on the flat paddocks to the east and south with permission of the local farmer. The old path of the Whangatane River will be avoided where possible as will any small mungas feeding from it. Access to the site will be organised by PW and will likely come from the Donald Street entrance. On completion of the new spillway and once the diversion is breached and flowing, the old path of the spillway will be retained and allowed to develop as a wetland.

The initial earthworks (topsoil stripping) for both the spillway cut and the spoil dumping area will be monitored by RG and the appointed kaitiaki. The archaeological potential is assessed as very low due to previous modification, but if any archaeological features are discovered in the spillway zone then works will cease in that immediate area and will not be able to recommence until the archaeological authority from Heritage New Zealand is active. If archaeological features are discovered in the spoil dumping area these will be covered and protected with a geotextile cloth and the type of feature and location recorded, thus enabling work to continue.

Allen Bell Park
Site work consists of some minor bank stabilisation, excavation to increase the size of the spillway with spoil placed on the park to raise and level the park grounds in this immediate area. It was agreed that there are no known archaeological issues with this area. Kevin Mathews recalls it as previously being an old raupo swamp.

Only one known archaeological site – the C.M.S mission station site (O04/1071) – will be affected by the proposed works. Therefore, an authority shall be applied for to permit investigation and modification of O04/1071 to proceed at the Te Hiku Sports Hub Spillway. The authority should also cover the other two sites in case of accidental discovery. Future authorities will be applied for once detailed engineering drawings and work schedules are finalised.

Sports Hub
Work planned at the Te Hiku Sports Hub Spillway (O04/1071) during the 2019 season is largely cosmetic tidying up and re-sculpting of the current spillway and old spoil heaps, as well as some river bank protection work. Although heavily modified, there is still some archaeological potential here. Bank scouring has been occurring for some time and requires urgent mitigation. The eroding river bank will be battered and a rock spall toe established to stabilise this corner of the river. The existing spillway the cuts across the back of

the sports hub will have each end widened and the new and existing spoil with be likely used to form a BMX track, and if any is left over it may be offered for free to locals who may require some topsoil.

These works will require an authority from Heritage New Zealand as this is part of the CMS site and as such is a recorded archaeological site. The HNZ authority will cover all three sites for this season and subsequent work for future seasons will require a new authority application.

9.0 Conclusion and Recommendations

Geometria Ltd. were commissioned by Joseph Camuso from Northland Regional Council to undertake an archaeological assessment of the proposed Awanui Flood Scheme Project. The site works extend from south of Kaiataia township to North of Awanui and SH10.

One recorded archaeological sites will be affected by the proposed works, and the potential for archaeological discovery for the other two sites to be worked in 2019/20 is assessed as very low. Therefore, it is recommended that NRC apply for an archaeological authority from Heritage New Zealand for the 2019/20 programme of works, then further develop the future scheme plan works programme and apply for another authority for the remainder of the works for 2020 onwards. This will enable the first season of works to proceed whilst further planning and consultation can be undertaken for the projected future works without compromising the coming seasons works.

Therefore, the following recommendations are made to the client with respect to the proposed development as detailed in this assessment:

1. An application is to be made to Heritage New Zealand Pouhere Taonga under section 44(a) of the NZHPTA to cover the Te Hiku Sports Hub Spillway, Allen Bell Park Channel Improvements and Juken Spillway works and all affected land parcels. This is a legal requirement.

2. NRC, or their appointed representative, should continue engagement with Te Rawara, Ngati Kahuu and NgaiTakoto as part of their consultation towards a HNZ authority application and future applications.

3. An archaeological management plan should be developed to guide the archaeological mitigation process for the Awanui Flood Scheme Project for the 2020 season onwards.

4. Monitoring of all initial earthworks is recommended.

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11.0 Appendices

Appendix 1: Site Record Form

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

ARCHSITE archaeological site recording scheme

Site Record Form

NZAA SITE NUMBER: O04/1071

SITE TYPE: Mission station

SITE NAME(s):

DATE RECORDED:

SITE COORDINATES (NZTM) Easting: 1625042 **Northing:** 6113648 **Source:** On Screen

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:** O04/1071

Finding aids to the location of the site

River bank and adjacent flats, north of SH1 to developed area around Church Road.

Brief description

Recorded features

Other sites associated with this site

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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	**NZAA SITE NUMBER:** O04/1071

Site description

Updated 13/12/2018 (other), submitted by jonocarpenter
Grid reference (E1625042 / N6113648)

Site of Maori settlements and horticulture, an area known as Te Ika Hunuhunu, and European horticulture (orchards, wheat fields, potato gardens) and houses associated with CMS missionaries Rev William Puckey and Joseph Mathews from 1834. Site of the first colonial land transaction in Muriwhenua, between Chief Panakareao and the CMS, site of local debate/signing of the Treaty of Waitangi.

Condition of the site

Statement of condition

Current land use:

Threats:

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD INVENTORY	**NZAA SITE NUMBER:** O04/1071

Supporting documentation held in ArchSite

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thority) of the tribal leaders making the agreement (Waitangi Tribunal 1997, 66, 118).[8] The Waitangi Tribunal also report that this understanding was shared by the missionaries themselves (1997, 71–2, 159–60) and was confirmed by Captain Fitzroy (later Governor of NZ) in 1838: 'It is a sort of conditional sale, such as, "we sell them to you to hold as long as we shall permit you"' (Waitangi Tribunal 1997, 67). This land-sharing/land use agreement between chiefs and missionaries was the first significant re-configuration of land and people of the colonial era, bringing a new use to the land at Te Ahu and a new people into a relationship of co-existence with the local hapū.

Six years after the mission was established, on 28 April 1840, a further significant meeting took place when around 500 local Māori gathered outside William Puckey's house to debate Te Tiriti o Waitangi.[9] Panakareao arrived the evening before to question Puckey and the government officials closely about the nature of the treaty and particularly the word 'sovereignty'. A range of views was canvassed in the debate, and Willoughby Shortland, representing Governor Hobson at Kaitaia, assured the gathering 'The Queen will not interfere with your native laws or customs' (Waitangi Tribunal 1997, 114). Panakareao

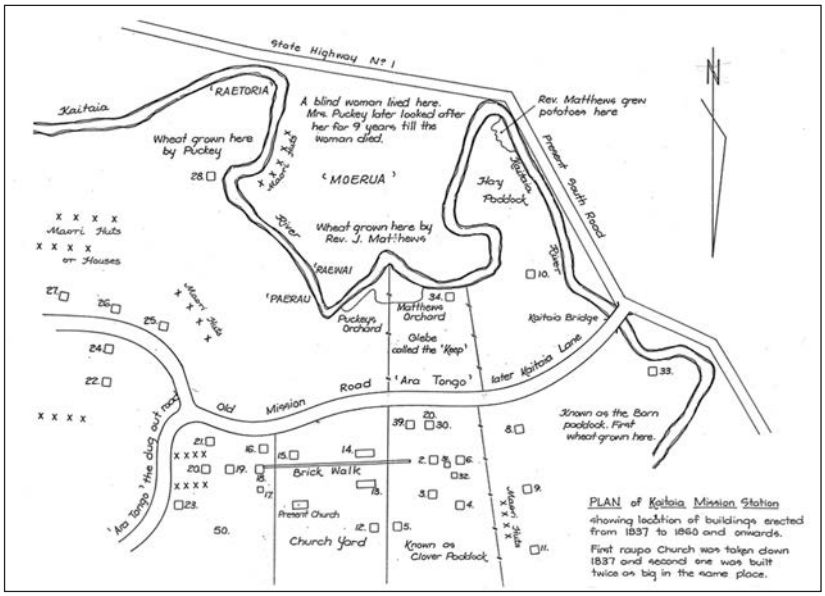

Figure 2. Plan of Kaitaia Mission Station, Te Ahu Heritage Museum & Archive, VF490/50.

Document: Plan of Kaitaia Mission Station from 1833 onwards

Collection: Maingay Collection

Acquistion

Box Number: 2
Name: Three Kings, Te Paki, Aupouri