

# ***GREENHITHE BRIDGE WATERMAIN DUPLICATION AND CAUSEWAY PROJECT: HERITAGE IMPACT ASSESSMENT***

Report prepared for

Watercare Services Ltd

By

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# INTRODUCTION

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## Introduction

Clough & Associates has been commissioned by Watercare Services Limited (Watercare) to assess the potential effects on archaeological values related to the construction, operation and maintenance of the proposed Greenhithe Bridge Watermain Duplication (GBWD) and Causeway Project (Figure 1, Figure 2).

In summary, the project involves the duplication of a section of the existing NH1 watermain, construction of a section of the Northern Interceptor (NI) wastewater project, and widening of the State Highway 18 (SH18) Causeway in order to accommodate these pipelines.

The existing NH1 is located within the southern side of the Greenhithe Bridge. The proposed new watermain will be attached under the northern side of the Greenhithe Bridge.

In order to provide the necessary space for the GBWD and NI projects to the west of Greenhithe Bridge, Watercare proposes to widen and extend the existing SH18 Causeway.

The proposed water and wastewater infrastructure is required in order to maintain water and wastewater service levels and to provide for future growth.

Key elements of the project include:

- The new watermain and NI Phase 1 pipelines;
- Structure to connect the new watermain to the Greenhithe Bridge and to transition to and from land at either end of the bridge;
- Connections between NH1 and the new watermain to the east and west of Greenhithe Bridge; and
- Provision for future wastewater pipelines, which may be installed as part of the causeway widening or at a later date.

The proposed Greenhithe Bridge Watermain Duplication and Causeway project requires various resource consents under the Resource Management Act 1991 (RMA). This technical report provides specialist input for the *Greenhithe Bridge Watermain Duplication and Causeway – Assessment of Effects on the Environment* report ('the main AEE') report prepared by URS New Zealand and Jacobs New Zealand Limited which supports the resource consent application. The works described in the AEE have been considered in the technical assessment presented in this report.

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# INTRODUCTION, CONTINUED

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## **Introduction,** *continued*

This report provides the following:

- A brief overview of the proposed works.
- A historical background of the general area.
- An overview of the archaeological background and archaeological landscape of the project area.
- Results of the field assessment.
- An assessment of the actual or potential effects of construction, operation and maintenance on the archaeological and historic heritage landscape.
- Recommended mitigation and management measures made in accordance with statutory requirements.

The new watermain will eventually form part of Watercare's future North Harbour 2 Watermain project. The proposed widening of the motorway causeway will also incorporate wastewater pipelines and associated facilities which form part of Watercare's proposed Northern Interceptor project. Separate technical reports have or will be prepared for the future North Harbour 2 Watermain project and for the balance of the Northern Interceptor project.

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## **Proposed Works**

The proposed Greenhithe Bridge Watermain Duplication and Causeway works assessed in this report are the construction, operation and maintenance of:

- The proposed watermain from Station Street in Hobsonville, under the motorway to the coastal edge – this will involve open trenching from Station Street to the motorway, and trenchless construction under the motorway;
  - Proposed causeway widening to accommodate the proposed watermain and wastewater pipelines – the proposed widening is approximately 860m in length and 15m in width along the northern side of the existing motorway causeway;
  - The proposed watermain attached to the underside of the Greenhithe Bridge; and
  - A proposed watermain cross connection chamber close to the eastern abutment of the Greenhithe Bridge.
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# INTRODUCTION, CONTINUED

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## **Proposed Works, *continued***

Base on the preliminary design to date, the proposed internal pipeline diameters and materials are:

- Water: A single 1200mm diameter concrete lined steel pipeline on the causeway and 800mm diameter fixed to the Greenhithe Bridge;
- Wastewater: Phase 1 750mm diameter polyethylene (PE) pipeline installed as part of the proposed causeway widening and which bifurcates to twin 450mm diameter pipelines in readiness for crossing the harbour; with provision for two 1200mm diameter pipelines to be installed as part of future phases of the Northern Interceptor project.

The proposed works are described in detail in the AEE. Key drawings showing the proposed works footprint are copied in Appendix A of this report. The works described in the AEE and shown on the appended drawings are assessed in this report.

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## **Methodology**

The New Zealand Archaeological Association's (NZAA) site record database (ArchSite), Auckland Council's Cultural Heritage Inventory (CHI), District Plan schedules and the Heritage New Zealand (HNZ) List of Historic Places were searched to determine whether any archaeological sites had been recorded on or in the immediate vicinity of the project area. Literature and archaeological reports relevant to the area were consulted (see Bibliography). Early plans held at Land Information New Zealand (LINZ) were checked for information relating to past land use.

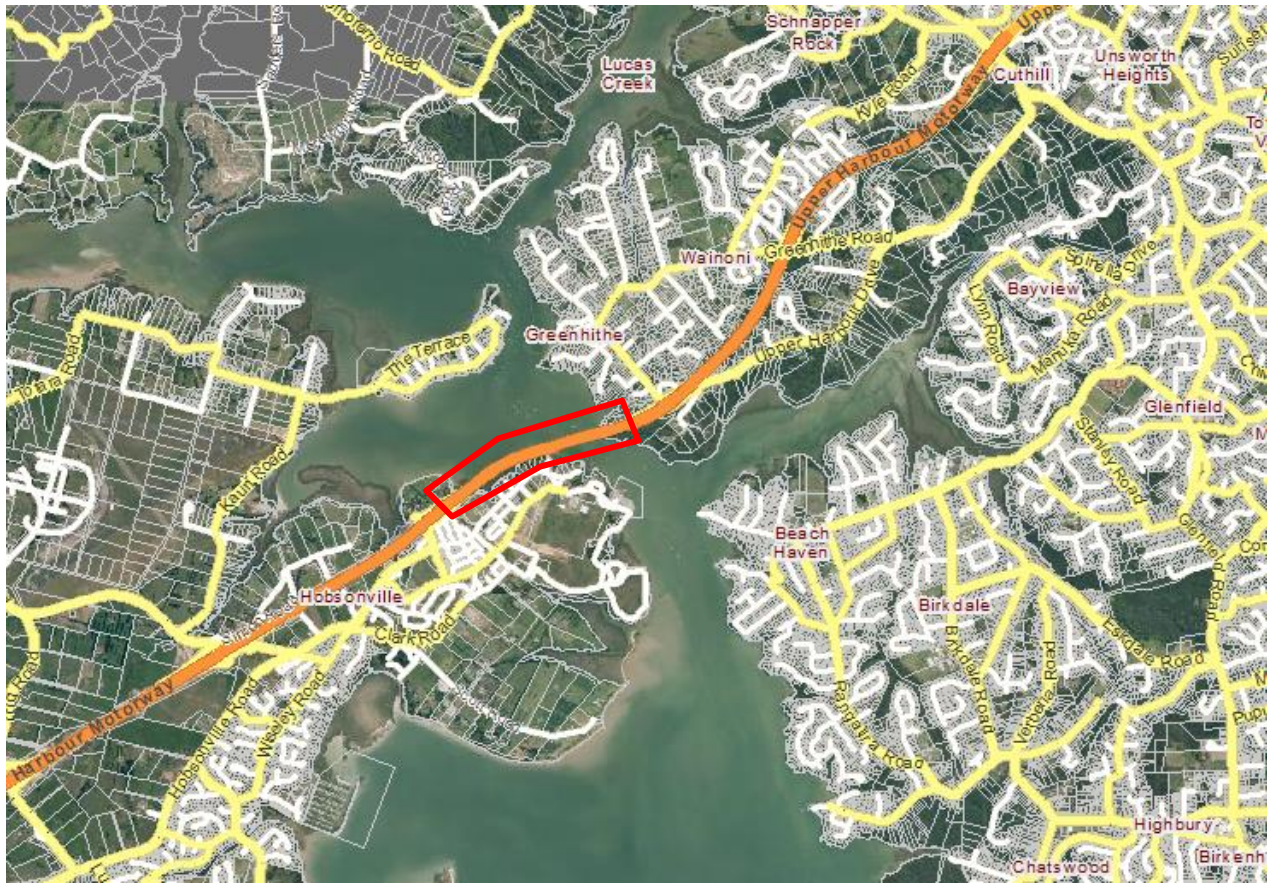
A visual inspection of the area was conducted on 23 December 2013. The ground surface was examined for evidence of former occupation (in the form of shell midden, depressions, terracing or other unusual formations within the landscape, or indications of 19th century European settlement remains). Exposed and disturbed soils were examined where encountered for evidence of earlier modification, and an understanding of the local stratigraphy. Photographs were taken to record the area and its immediate surrounds.

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# INTRODUCTION, CONTINUED

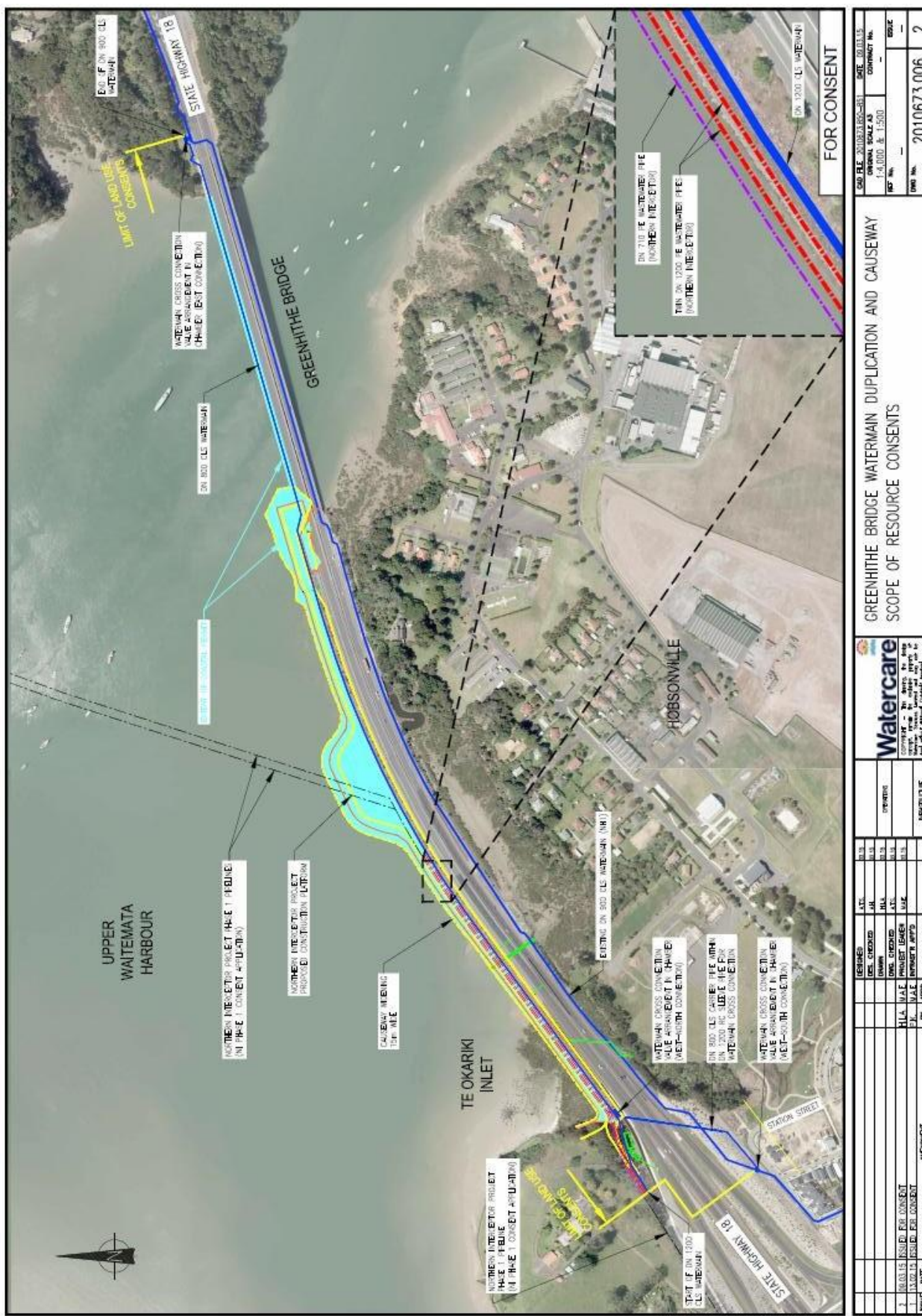
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**Figure 1. Project area – outlined in red. Map source: Auckland Council GIS 2015**

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**Figure 2. Greenhithe Bridge Watermain Duplication – Location plan (Watercare Services Ltd 2015)**

# HISTORICAL BACKGROUND

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## **Pre-European Maori History<sup>1</sup>**

The Hobsonville and Greenhithe areas, and other locations along the creeks and inlets of the inner reaches of the Waitemata Harbour, were occupied by Maori for generations before the arrival of Europeans, evidence of which survives in the form of recorded place names, oral traditions and archaeological sites (although many have been destroyed by 19th and 20th century development and natural processes).

The harbour provided not only abundant marine resources but also access to some significant communication and portage routes, such as the Rangitopuni River and Lucas Creek. The Waitemata harbour was part of an inland water route stretching from north of Dargaville through to the centre of the North Island (via the Kaipara, Waitemata and Manukau Harbours and the Waikato River).

Through time a number of iwi have had influence over the region. Of particular significance were Waiohua, Te Kawerau and Ngati Whatua and the many hapu related to these groups (Clough & Tanner 2004). However, other hapu from outside the region also maintained rights to fish in the waters of the Waitemata through the summer months, and sites in the area may relate to any of these groups. For the most part the archaeological sites in the vicinity of Greenhithe Bridge relating to Maori occupation are small and dispersed around the shoreline of the upper harbour, with the exception of Tauhinu Pa (R11/285) located on the southern side of the Greenhithe headland.

The Maori place name Onekiritea refers to the general area of Hobsonville Point near the Greenhithe Bridge. The Waiarohia Inlet is known as Te Waiarohia o Ngariki, and is described by Te Kawerau a Maki as ‘a significant fish and shellfish gathering place referring to an earlier tribe searching for water’. To the north the name Te Okoriki refers to a small eroding headland and to the Inlet ‘at that point that is traversed by SH18 and cut off from the Harbour’. (NZHPT 2008, citing Te Kawerau a Maki).

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<sup>1</sup> Adapted from Macready & Clough 2008



# HISTORICAL BACKGROUND, CONTINUED

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## Early Hobsonville<sup>2</sup>

In 1853, the Waipareira block was purchased from Ngati Whatua by the Crown (Dawson 2007). An early hydrological plan of the area dated 1854 describes the peninsula at the time of purchase as ‘undulating fern land 40 feet’ (Macready & Clough 2008: figure 3<sup>3</sup>).

The Hobsonville Peninsula was divided into four large Crown Grant blocks, the first of which (block 21 of Waipareira) was bought by R.O. Clark in 1854 (Figure 3). He founded a brickworks and pottery in the 1860s at Limeburners Bay which, with Carders and other local potteries, dominated the development of the Hobsonville area until the 1920s (Clough, Macready & Plowman 2008). These 19th and early 20th century potteries were located on the southern side of the peninsula, with one outlier (J. & W. Ockleston) on the western side of the Waiarohia Inlet.

Block 12, originally a 375 acre block granted to the Rev. D. Bruce on 1 August 1855, makes up the northern part of the peninsula. Bruce sold some of the land to the Waitemata City Council for a road access to the wharf on his land on 19 June 1883 (Deeds Index 8A.243, 10A.253) (Figure 3). Bruce later sold 120 acres to R.O. Clark, which he gave to his daughter and her husband, and 170 acres on the eastern side of the property to Henry Clark (most of which was sold in 1925 to the Defence Department). (Eaves 1990: 96).

The clays which provided the basis for the pottery industry on Hobsonville Peninsula were initially unfavourable for agriculture, and considerable effort and expense were required to convert the land for pasture and crop cultivation. The land was swampy and poorly drained, requiring drainage systems and deep ploughing, and problems were exacerbated by the activities of gumdiggers who had repeatedly burned off the land and excavated areas to retrieve gum. Gumdigging would probably have been carried out on the peninsula, and the site of a whare belonging to a former gumdigger (Mr Kingdom) was noted near the southern boundary of block 12 by Len Smithies.<sup>4</sup> By the early 20th century, however, the Hobsonville area was known for the commercial growing of grass seed and oats were successfully cultivated. After World War I most of the farmland was converted to pasture for stock grazing (Dawson 2007: 15-17). Dawson records that tobacco was grown in the Hobsonville area in the 1920s until the Depression.

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<sup>2</sup> Extracted from Macready & Clough 2008.

<sup>3</sup> Sir George Grey Special Collections, Auckland Libraries, NZ Map 3909.

<sup>4</sup> Former head of grounds at the Hobsonville station and local historian: Smithies 1983, plan reproduced in Holman 2000.

## HISTORICAL BACKGROUND, CONTINUED

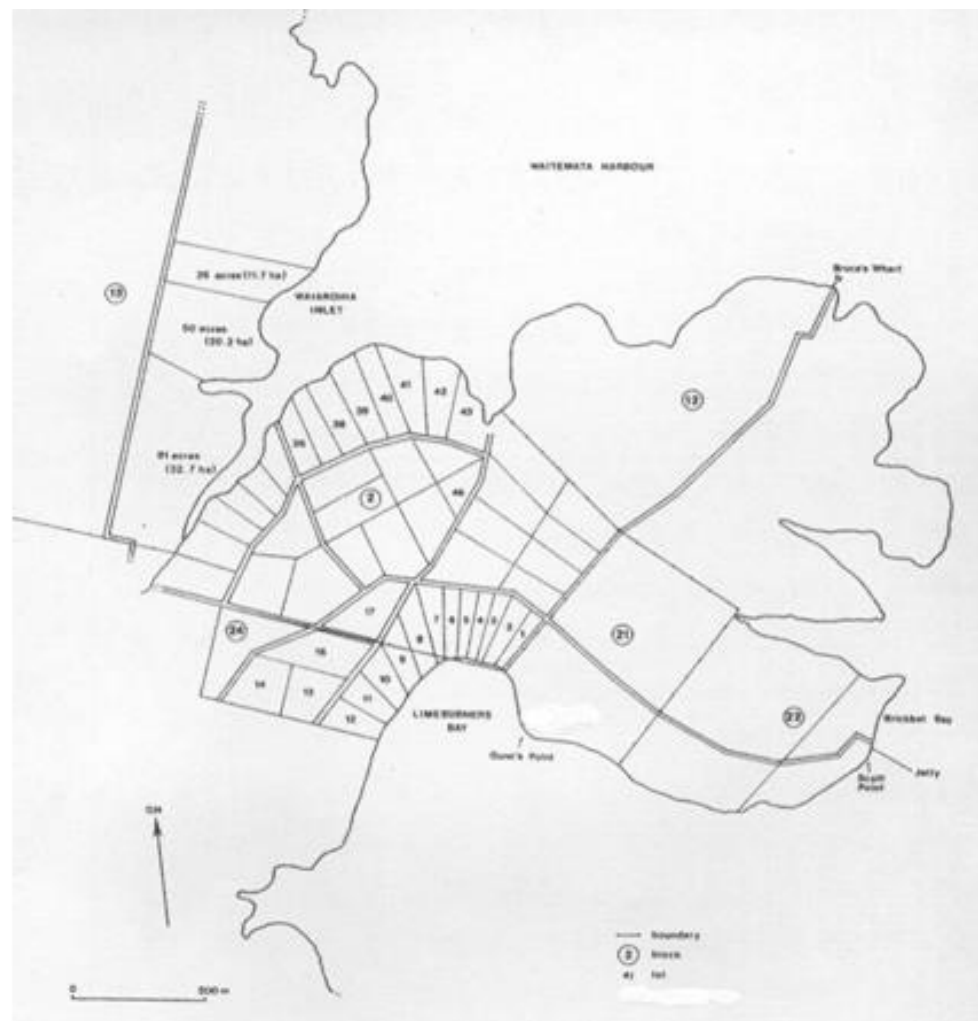
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### Early Hobsonville, *continued*

For the first few decades of European settlement Hobsonville was a fairly isolated place. The early settlers had to organise their own transport to Auckland and elsewhere, although a weekly ferry service to Riverhead may have called in on Hobsonville from about 1865 (Dawson 2007: 19). Boats could be hired to transport people and goods and some acquired their own water transport – the Clark pottery acquired its first boat in 1883 (*The Lady of the Lake*) to transport its wares to Auckland (Smithies 1983; Scott 1979: 106). Communication became easier with the opening of a Post Office in 1886 and the start of a regular steamer service in 1892, running from Riverhead to Auckland, calling at Brigham's Creek, Hobsonville, Beachhaven and Greenhithe (Dawson 2007: 18-20). Motor transport gradually developed in the early 20th century, but it was not until c.1930 that the Auckland to Helensville bus service was started (Dawson 2007: 21).

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**Figure 3. Plan showing the original Crown Grants in the Parish of Waipareira (circled numbers) and subsequent subdivision (after Eaves 1990: figure 6.2)**



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# HISTORICAL BACKGROUND, CONTINUED

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## Development of the Hobsonville Airbase<sup>5</sup>

In the late 1920s, when the clays that had supported the local pottery industry for many decades were running out and the remaining potteries were closing, the Hobsonville Airbase was established. The military potential of aircraft had been clearly demonstrated during World War I and in the years following the war the New Zealand government gave priority to establishing its own air force. The New Zealand Permanent Air Force (NZPAF) was officially established in June 1923 as a unit of the army, and a small number of surplus British aircraft were acquired. In that year the Walsh Brothers Kohimarama flying school (which had previously played the main role in training New Zealand pilots) closed, and its stock of planes was also bought by the government, although most were by then obsolete.

The NZPAF established its first training base in Canterbury (the Wigram Aerodrome), but the need for an aircraft station for both seaplanes and land planes to defend the port of Auckland was soon apparent. In 1924 the Hobsonville Peninsula was selected for this purpose, and an area of 167 acres (74ha) was purchased from Henry Clark in November 1925 to establish an Air Force station. The land at this stage was farmed, and included a house, five cottages and associated structures. Work began on building the airfield in 1927, and involved the removal of buildings, farm fences and trees so that the land could be leveled, using local manual labour. The first Commanding Officer, Major Len Isitt, was appointed in 1928.

By the end of 1929 official records noted the completion or near completion of the Commanding Officer's residence, a central office, a control hut, a boat shed, six cottages for airmen, a large hangar for planes with workshops and offices, a transport shed in reinforced concrete, a timber jetty 286ft long, and a slipway for seaplanes, as well as the sewerage and stormwater system, an elevated water tank, an electricity supply and telephone cables (NZHPT 2008, citing *AJHR* 1929: 80). A seaplane hangar was completed shortly afterwards (*Auckland Star* 1.11.1929) on the seaplane apron, which had been constructed by cutting back the cliff edge and using the fill to build a reclamation. The hangars and associated structures were of similar design to those that had been built at Wigram, and the design is thought to have originated in New Zealand rather than having been adopted from Britain (LA4 & Salmond Reed 2003). One unusual feature of the station was an expensive pigeon loft for carrier pigeons, which were initially carried on the aircraft in lieu of wireless equipment (the structure was later converted to a wireless workshop). Figure 4 shows the work in progress at around this time with the large hangar completed and work on the seaplane apron still under way.

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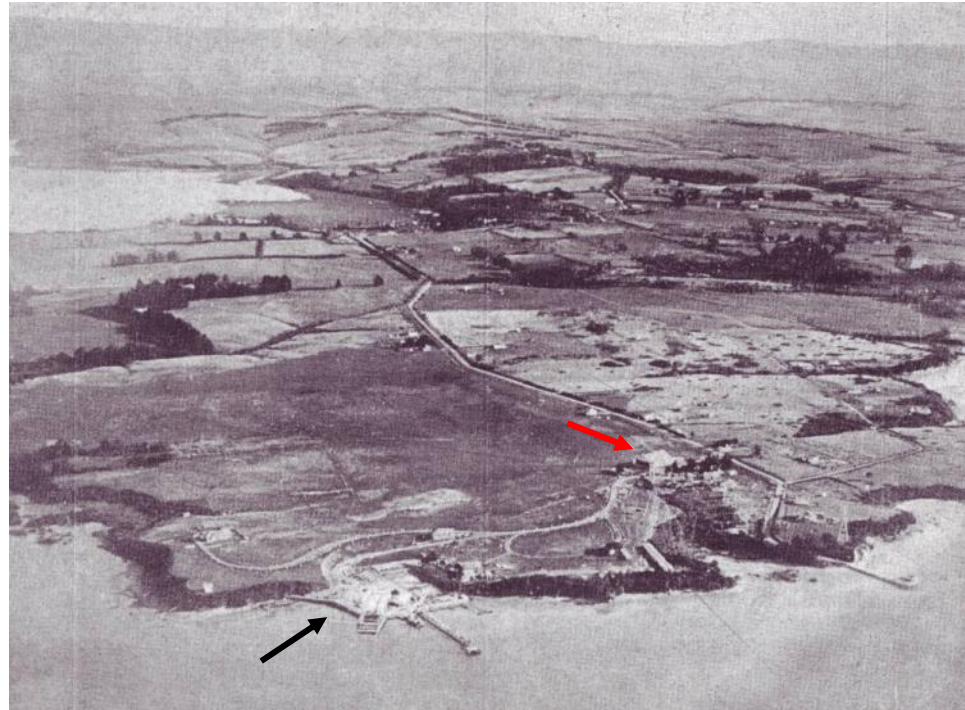
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<sup>5</sup> A detailed history of the Hobsonville seaplane station has been published by Bee Dawson (2007), and the following summary has been extracted from that source unless otherwise indicated (Clough & Macready 2008).

## HISTORICAL BACKGROUND, CONTINUED

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**Figure 4.**  
Construction of  
the airfield  
c.1929, looking  
south, showing  
the completed  
aircraft hangar  
(red arrow) and  
seaplane apron  
(black arrow)  
under  
construction.  
Photo  
reproduced in  
Boffa Miskell



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### **Hobsonville Airbase, *continued***

The NZPAF in 1928 consisted of only 5 officers and 17 airmen, with 6 training aircraft and 12 service-type aircraft (comprising three Bristol fighters and a range of obsolete aircraft). While capacity gradually increased in the following years, the Depression meant that little investment was possible. In 1931-32 expenditure on military aviation was cut and the work at Hobsonville was halted before some of the basic amenities had been completed.

However, from 1934, with improvements to the economic situation and the threat of military build-up in Germany, the Government again gave priority to defence spending, including strengthening the air force. Recruitment increased, and men were posted to Trentham for basic training prior to technical training at Hobsonville or Wigram. Six new Vickers Vildebeest torpedo bombers were acquired in 1935. In 1937 the Royal New Zealand Air Force was created as a separate defence service, replacing the NZPAF (under the Air Force Act 1937). The New Zealand government had sought advice from the British government in establishing the RNZAF. Wing Commander Ralph Cochrane was sent out to assess the needs of the new Air Force towards the end of 1936 and his report recommended sweeping changes which were to take the station at Hobsonville in a new direction.

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## HISTORICAL BACKGROUND, CONTINUED

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### **Hobsonville Airbase, *continued***

Major improvements and expansion to the Hobsonville Airbase were carried out in 1934-36 with the increased government funding, and an additional 55 acres of land were acquired (Stewart 1997). Facilities and aircraft strength were still fairly basic at the start of this period, consisting of one landplane hangar, two seaplane hangars, a block of workshops, the Marine Section, the equipment store, a small headquarters, five officers' houses, eight married NCOs and other ranks' houses, and a 20 room single men's accommodation block (formerly a Public Works Department building). New personnel were housed in bell tents until more permanent accommodation could be built. The aircraft comprised one Fairey IIIF with floats and undercarriage, one Saunders Roe Cutty sark flying boat and three DH60 Gypsy Moths, including one seaplane. There were only two qualified pilots on the base, and whenever a seaplane was launched all hands were called to assist. Transport vehicles consisted of an Austin tourer for the CO, a Bedford truck, a model T Ford fire engine, a large caterpillar tractor for launching the seaplanes, and a motor launch for transport to Auckland and to support the seaplanes.<sup>6</sup>

The improvements carried out in the mid 1930s to cope with the increase in personnel and aircraft included new officers' quarters and barracks, and the extension of the airfield involving further levelling and turfing work (carried out manually by Public Works labourers, until bulldozers were introduced to reduce costs and speed up the rate of progress in 1936). The seaplane apron was extended eastwards, involving further downcutting of the cliff edge and reclamation.

Plans for the Hobsonville station changed in 1937 as a result of the Cochrane Report, which recommended the separation of land and seaplane operations and other functions. The Hobsonville station would now serve primarily as a Repair and Equipment Depot and seaplane base, while two aerodromes for bomber squadrons were built at Whenuapai and Ohakea. Munitions were also to be stored at Hobsonville, and plans were drawn up for an ammunition storage area at Bomb Bay. Approval for the work was given in January 1938, and a network of roading and structures was built on Bomb Point, comprising 8 single wall magazines and several other storage buildings (LA4 & Salmond Reed 2003).

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<sup>6</sup> As recollected by Aircraftman Ted King in Dawson 2007: 52-3.



## HISTORICAL BACKGROUND, CONTINUED

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### **Hobsonville Airbase, *continued***

The base also provided facilities for non-military aircraft. In December 1937 the first mail flight across the Tasman was successfully carried out by the Imperial Airways flying boat *Centaurus* and the company announced plans for a trans-Tasman passenger and mail service to be run by a new company, Tasman Empire Airways Ltd [TEAL]. Three Short S.30 Empire class flying boats were ordered for the Tasman service, and the main base for the flying boat operations was established at Mechanics Bay. TEAL was formally incorporated in 1939 following agreement between the New Zealand, British and Australian governments and, as Hobsonville station had the only available slipway and seaplane apron, maintenance of the seaplanes was carried out there. A large hangar was constructed in 1939 for the maintenance of the TEAL flying boats on the slipway adjacent to the existing seaplane hangar and workshops. During the war TEAL craft were adapted for long range maritime reconnaissance and other defence purposes, but after America's entry into the war they were able to resume their trans-Tasman air service (NZHPT 2008, from Harrison et al. 1997).

By mid 1938 there were 168 personnel on the station, requiring additional married men's quarters and barracks. The number of personnel on the station increased significantly following the outbreak of WWII the following year, and included the Auckland Territorial Squadron, who were immediately mobilised and brought to Hobsonville, being housed initially on mattresses in the seaplane hangar and later in tents. Many new technical buildings, workshops and accommodation buildings were required in the build up to and early years of the war. Amenities for personnel were also improved in the late 1930s and early 1940s, with the addition of tennis courts, a swimming pool, a 9-hole golf course, a YMCA building and a chapel.

The Hobsonville station played a crucial role during the Second World War in assembling and testing thousands of aircraft before they were sent to stations in New Zealand and the Pacific. The aircraft were barged from the Auckland docks for assembly. By August 1941 personnel numbers had increased to 10 officers and 425 men, who were joined the following month by Women's Auxiliary Air Force (WAAF) personnel. The WAAs were involved in various aspects of assembly and repair (such as instruments), and also undertook marine duties such as the ferry service to Auckland. The attack on Pearl Harbour in December 1941 brought America into the war, and greatly increased the rate of aircraft assembly at Hobsonville, which now included American Catalina flying boats.

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# HISTORICAL BACKGROUND, CONTINUED

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## **Hobsonville Airbase, *continued***

Flying and technical training also continued to be carried out at Hobsonville. Training requirements intensified just before the start of the war, with the Technical Training School becoming a separate unit. In 1940 the Flying Instructors School moved from Mangere to Hobsonville.

In 1942 the Repair Depot and Stores Depot were moved to Hamilton, as Hobsonville was considered too small as well as too vulnerable to attack. The Erection and Assembly Sections remained at Hobsonville, and the School of Administration was moved to Hobsonville from Christchurch. A Marine Training School was formed in 1943 and attached to the Marine Section, which played an important role in training marine crews for deployment in the Pacific. The Marine Section provided small craft to support the seaplane operations, and also provided towing facilities for the barging of aircraft from Auckland for assembly, and of fuel supplies to Hobsonville and Whenuapai. At one stage the Marine Section had 36 watercraft of various sizes.

Towards the end of the war four Sunderland flying boats from the UK were brought to New Zealand for transport duties in the Pacific, and the Sunderland Flying Boat Section was formed (1944). This required extension of the seaplane apron, which was already being used to capacity by Walrus, Catalina and TEAL aircraft.

After the war Hobsonville continued to play a key defence role, and functioned as the New Zealand base for all technical training. It also played an important role in the Pacific, supporting No. 5 Squadron and the RNZAF Station in Fiji (at Laucala Bay). No. 6 (Maritime) Squadron was established in 1952, when 16 reconditioned Sunderlands were acquired for duties in the Pacific, and provided reserve training for territorials and military service trainees in maritime operations. Both squadrons travelled to and from Fiji on a regular basis for many years, and No. 5 Squadron provided service to other areas when transport was required, including the Chatham Islands and Wellington. No. 6 Squadron was disbanded in 1957, largely because of the unreliability of its territorial component.

The layout and function of the buildings at the Hobsonville Airbase in 1962 is shown in Figure 5.

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## HISTORICAL BACKGROUND, CONTINUED

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### **Hobsonville Airbase, continued**

The seaplane era at Hobsonville ended in the mid 1960s, when the ageing Sunderlands were finally replaced with land based Lockheed P-3 Orions. No. 5 Squadron was withdrawn from Fiji in 1965, and the marine training unit disbanded. The last Sunderland seaplane flew from Fiji to Hobsonville in 1967. The RNZAF continued to use the airbase as a land station, but it was amalgamated with Whenuapai in 1965 to form the RNZAF Base Auckland. The focus turned to from seaplanes to helicopters, acquired in the late 1960s for use on Leander class frigates, and in later years a number of Army units were stationed there, including the No. 1 Army Air Supply Organisation (from 1989 the No. 5 Movements Squadron); the No. 5 Signals Squadron (from 1993); and the Special Air Service.

Hobsonville Airbase finally closed in 2002, surplus to Defence requirements, and is now being developed as a new urban centre.

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**Figure 5. Airbase buildings in 1962 (photo: Air Force Museum, Christchurch, reproduced in Dawson 2007: 174)**

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# HISTORICAL BACKGROUND, CONTINUED

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## Early Greenhithe

Greenhithe was acquired under private and other Crown purchases concluded by the mid 1840s, as it was part of the extensive Mahurangi Block. From 1853 the land was further divided through Crown Grants under the provisions of the Waste Lands Act 1853 (King 1984; Dunmore 2001).

The settlement at Greenhithe was initially very sparse due to its isolation and lack of access via roadways. The first known permanent settler was George Deane, who purchased 69 acres in 1858, and a few other settlers acquired land after this. In 1865 Mary Forgham purchased land from the Revd Thomas Hamer, and the land was named 'Fern Bank', which was the first European name given to the area (Dunmore 2001). A later landowner, Henry James Blyth, named the land Greenhithe after a small village on the banks of the river Thames in England. This became the official name of the area as accepted by the Post Office in 1884. However, the whole peninsula was still known by two names – Lucas Creek and Greenhithe are listed on the 1891 census (Dunmore 2001).

From its establishment in 1840, Auckland provided a growing demand for timber which was easily extracted from the bush adjacent to the harbour and transported down the estuaries. The accessibility of the general area via the estuary is reflected in its European history and archaeology, with Lucas Creek becoming the centre of one of the very early timber industries in Auckland, as it was one of the early sources exploited for kauri. Both the Okahukura and Okura waterways were the scene of considerable industry, with barges plying their waters throughout the latter part of the 19th century (Rickard 1984).

It is generally remarked that the timber industry greatly increased the environmental degradation of the area (King 1984; Scriven 1981). The gum diggers also moved in directly after the first wave of government land purchases. Two main camps are recorded: (1) Cut Hill situated at the head of Hellyers Creek just inside the northeast border of Greenhithe; and (2) Schnappers Rock Camp.<sup>7</sup> Gum extraction required deep diggings to get easy access to the gum, with burn-offs further contributing to the degradation of forests and soils.

After the ephemeral industries of gum and timber extraction more permanent settlers moved into the area. The early farmers remained bound to the estuaries, dependent on them for transport and supplies, and encountered very poor quality leached soils resulting in many abandoning their land in disgust. Some horticulture was established, but purely at the subsistence level until the late 19th century, when commercial fruit growing was established. Henry James Blyth was shipping apples, peaches, plums, pears and lemons to the Auckland market by 1887 (Dunmore 2001).

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<sup>7</sup> King (1984) gives no indication of the exact location of this camp, though it could well relate to Schnapper Rock Road reserve.

# HISTORICAL BACKGROUND, CONTINUED

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## **Early Greenhithe, *continued***

In 1866 a passenger ferry service was established by Jeremiah Casey, with jetties at Greenhithe and Albany, and it is possible that there were other stopping points along the estuary. The remains of a jetty on the Schnapper Rock Reserve might well relate to this service.

The population stood at around 40 at the turn of the century. By 1906 development was taking place over much of Greenhithe due to years of scrub and bush clearance, along with the construction of new roads allowing subdivisions to be developed. This led to higher settlement numbers over the ensuing early 20th century, with the population reaching 134 by 1926 (Dunmore 2001).

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## **Construction of Greenhithe Bridge**

The Greenhithe Bridge (or Upper Harbour Bridge) was originally constructed in the 1970s to provide a much needed upper harbour crossing. By the turn of the century, increased traffic demands put increasing stress on the two lane bridge which was then expanded with a duplicate bridge constructed next to it. The new bridge was constructed between 2003 and 2006 (The Fletcher Construction Company Ltd 2013).

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# ASSESSMENT RESULTS

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## **Historic Aerial Photographs**

An examination of historic aerial photographs shows the gradual modification which the project area has undergone over the last fifty years. An aerial from 1959 (Figure 6) shows the area prior to the construction of the first Greenhithe Bridge. A track cut through extensive areas of bush/scrub is evident on the Greenhithe side, on the alignment of the future highway. The air force buildings are clearly visible on the Hobsonville side, surrounded by open grassland.

A much later aerial dating to 1996 (Figure 7) shows the first Greenhithe two lane bridge with associated road extensions along both the Greenhithe and Hobsonville sides. Both areas have also undergone some degree of development by this date.

The 2010 aerial photograph (Figure 8) shows the bridge as it is today with highway approaches from both sides. Extensive residential and infrastructure development is being undertaken within both areas.

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**Figure 6. Aerial dating to 1959 showing project area. Source: Auckland Council GIS 2013**

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## ASSESSMENT RESULTS, CONTINUED

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**Figure 7. Aerial dating to 1996 showing project area. Source: Auckland Council GIS 2013**

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**Figure 8. Aerial dating to 2010 showing project area. Source: Auckland Council GIS 2013**

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## ASSESSMENT RESULTS, CONTINUED

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### **Archaeological Background**

The Greenhithe Bridge is located within the upper reaches of the Waitemata Harbour and straddles a narrow channel of water that runs between the Hobsonville Peninsula to the west and the Greenhithe headland to the east.

Previous archaeological work undertaken within the area has tended to focus on the Hobsonville Peninsula, where ongoing residential subdivision and infrastructure and service upgrades have resulted in widespread modification to the landscape in recent years. Assessments include: Bioresarches' assessment of the Upper Harbour SH16 and SH18 corridor (Bioresarches 1998), and Clough & Associates' assessments of the former Hobsonville Airbase land (Macready & Clough 2008; Clough & Macready 2008, 2009, 2012, 2013).

Assessments undertaken within the general area of the proposed works at the Greenhithe end include: Foster's assessment of the Upper Harbour Corridor (2001), the Auckland Regional Council coastal survey (Brassey 2010) and Clough & Associates' assessment for the Albany/Greenhithe structure plan (Clough 1995).

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### **Recorded Historic Heritage Sites**

There is currently one previously recorded archaeological site located within the immediate vicinity of the proposed works at Greenhithe Bridge (Figure 9). The site comprises a shell midden that was originally recorded by Hayward and Diamond in 1977 in the cut road bank around what is now the Squadron Road On-Ramp (R11/495; CHI 5955). Subsequent inspection by Prince in 2001 failed to locate any remains of the site.

Other sites located within the general vicinity comprise shell midden deposits evident on Clark Point to the northeast of the proposed works (R11/496, R11/497 and R11/498) and along the coastal embankments to the south of the Greenhithe Bridge around the end of Hobsonville Point (R11/2140, R11/493 and R11/494). There are currently no archaeological sites recorded on the Greenhithe side within the vicinity of the proposed works (Figure 9).

The Auckland Council CHI does not record any other archaeological sites within the immediate vicinity of the proposed works (Figure 10). However, the CHI does record the coastal walkway at the end of the Greenhithe headland which is located to the south of the Greenhithe bridge (CHI 17746) and the remains of a WWII airplane that crash landed in the mudflats to the north of the bridge at the Hobsonville end (CHI 844). Being that the crew are reported to have attempted to swim ashore towards Herald Island (see CHI record in Appendix), it seems likely that the crash site is closer to Herald Island than is currently recorded within the CHI.

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## ASSESSMENT RESULTS, CONTINUED

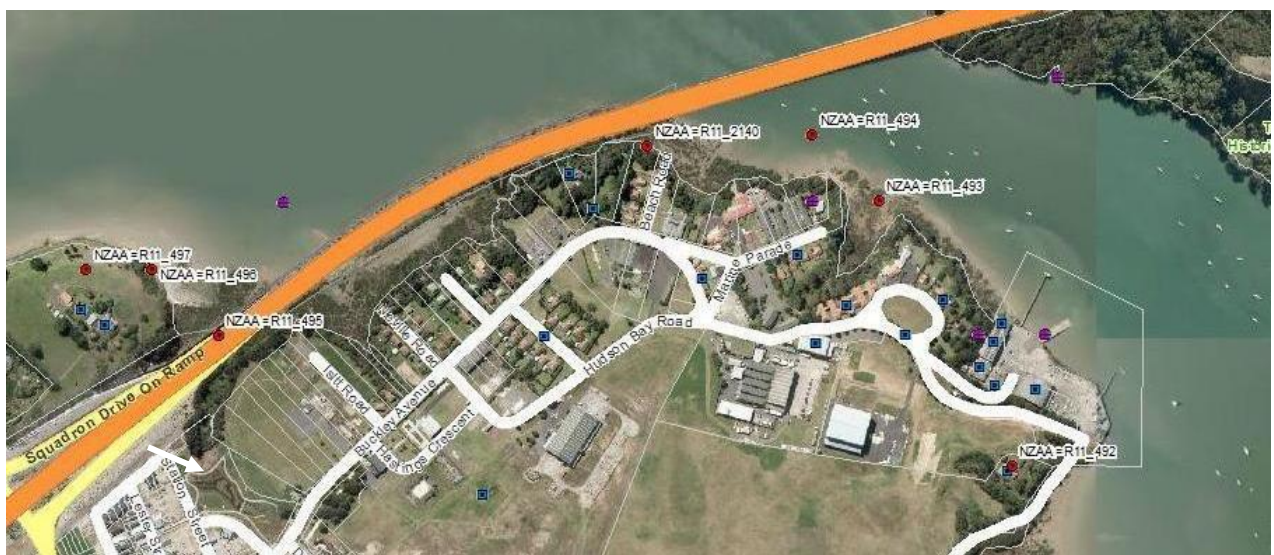
### Recorded Historic Heritage Sites, *continued*

Historic buildings are also recorded on Clark Point (CHI 3039 and 3507) and towards the end of Hobsonville Point on the southern side of the peninsula (CHI 12882 and 12883).

Three heritage items close to the Hobsonville end of the bridge and its approach are scheduled in the Heritage Appendix to the Auckland Council Operative District Plan: Waitakere Section 2003. These are Duke House and Servants Quarters on the northern side of Upper Harbour Drive (ID 1460, Category I – see site record for CHI 3039 in Appendix), and the Base Chapel (ID 1801, Category II) and Base Commander's House (ID 1802, Category II) within the former Airbase land. The Chapel is no longer present.

The Proposed Auckland Unitary Plan (notified September 2013) identifies two scheduled Historic Heritage Places in the same locations, with defined extents (Figure 11). That to the north of Upper Harbour Drive is ID 130 (Duke House and Servants Quarters), while that to the south is presumably ID 235 (Base Commander's House).<sup>8</sup>

The current proposed works are located primarily within the road reserve; however, some of the proposed works do extend into the south-eastern edge of the PAUP identified historic heritage extent of place for Duke House and Servants Quarters (ID 130).

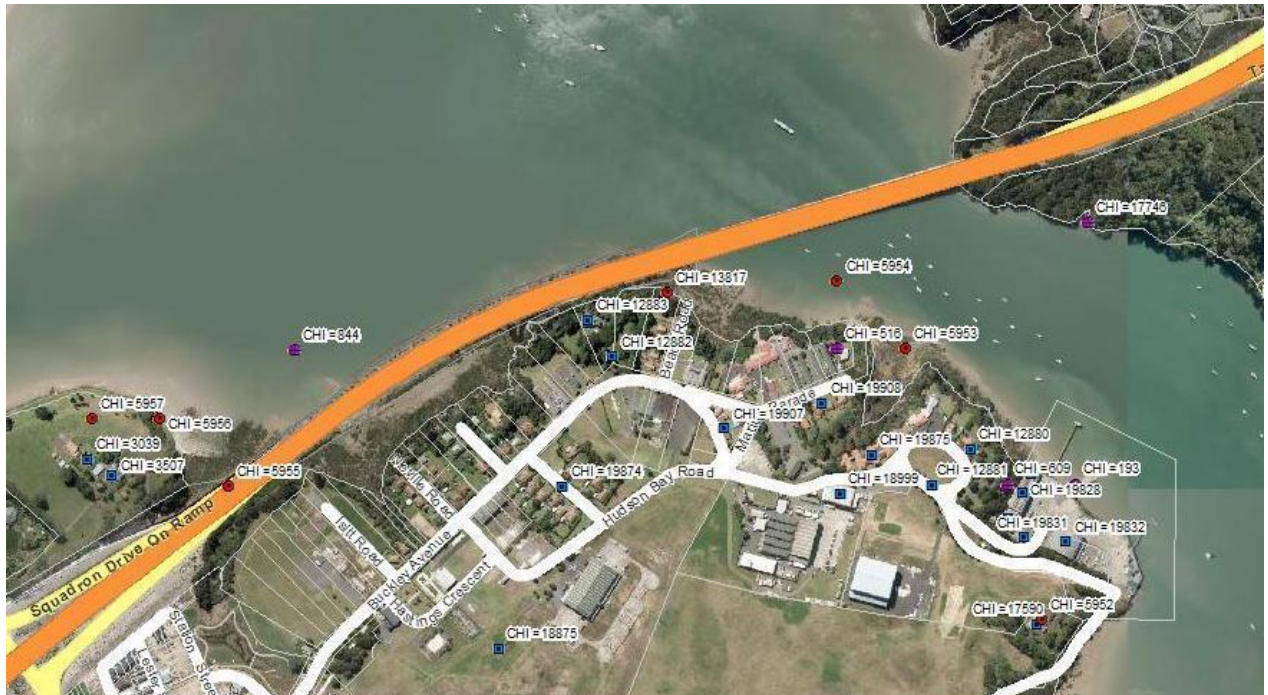


**Figure 9. Aerial showing distribution of recorded archaeological sites within the vicinity of the proposed works. R11/495 indicated with an arrow. Source: Auckland Council GIS 2013**

*Continued on next page*

<sup>8</sup> Where several scheduled places appear on the map on the same property, their locations and numbers are listed but individual items are not identified by number, making it difficult to determine which item is which without additional research.

## ASSESSMENT RESULTS, CONTINUED



**Figure 10. Aerial showing distribution of recorded cultural heritage sites within the Auckland Council CHI.**  
Source: Auckland Council GIS 2013



**Figure 11. Map showing historic heritage areas (marked with arrows) as identified within the Proposed Auckland Unitary Plan (notified 2013).** Source: Auckland Council Unitary Plan Viewer 2013

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## ASSESSMENT RESULTS, CONTINUED

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### Field Survey

A field inspection of the general proposed areas of works for the Greenhithe Bridge advanced works was undertaken on 23 December 2013. The inspection focused upon the proposed area of works and their immediate surrounds only.

As expected, the area was found to have been extensively and significantly modified through the development of the motorway and construction of Greenhithe Bridge (Figure 12). Exposed soils were noted across the survey area and showed exposed yellow clay with no or very minimal topsoil evident (Figure 13–Figure 15).

Previously recorded shell midden site R11/495 was not located. The area within which it was originally recorded has been completely modified through the construction of the bridge/motorway and pedestrian/cycleway as well as the motorway fence and rock wall revetment (Figure 16). The site has presumably been destroyed since it was originally recorded in the 1970s (see Appendix).

No archaeological or other historic heritage sites were identified within the project area as a result of this appraisal and there is little potential for any unidentified subsurface remains to be present. The proposed works do however extend into the PAUP identified historic heritage extent of place for Duke House and Servants Quarters (ID 130; Figure 18).

The property was not entered but contains a number of buildings, with the scheduled item described in the operative district plan as ‘Ornate, 19th Century Clark’s glazed ceramic block villa and attached building. Significance attributed to architectural, historical & pattern values. Interpretation at “Ngaroma”.’ The house was T.E. Clark’s house (now Monterey Park) and connections with the Hobsonville pottery industry (see Historical Background). The buildings are set in an open grassed landscape dotted with planted trees, and with several mature trees along the southern boundary which screen the house from the Upper Harbour motorway (Figure 17). They are well set back from the proposed works and will not be affected.

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## ASSESSMENT RESULTS, CONTINUED

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**Figure 12.**  
Looking over the  
western  
approach to the  
Greenhithe  
Bridge  
(Hobsonville  
side)



**Figure 13.**  
Modified  
landscape and  
exposed soils  
evident along the  
northern side of  
the motorway  
(Hobsonville  
side)



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## ASSESSMENT RESULTS, CONTINUED

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**Figure 14.**  
**Greenhithe end**  
**of bridge**



**Figure 15.**  
**Approach to**  
**bridge**  
**(Greenhithe end)**



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*Continued on next page*



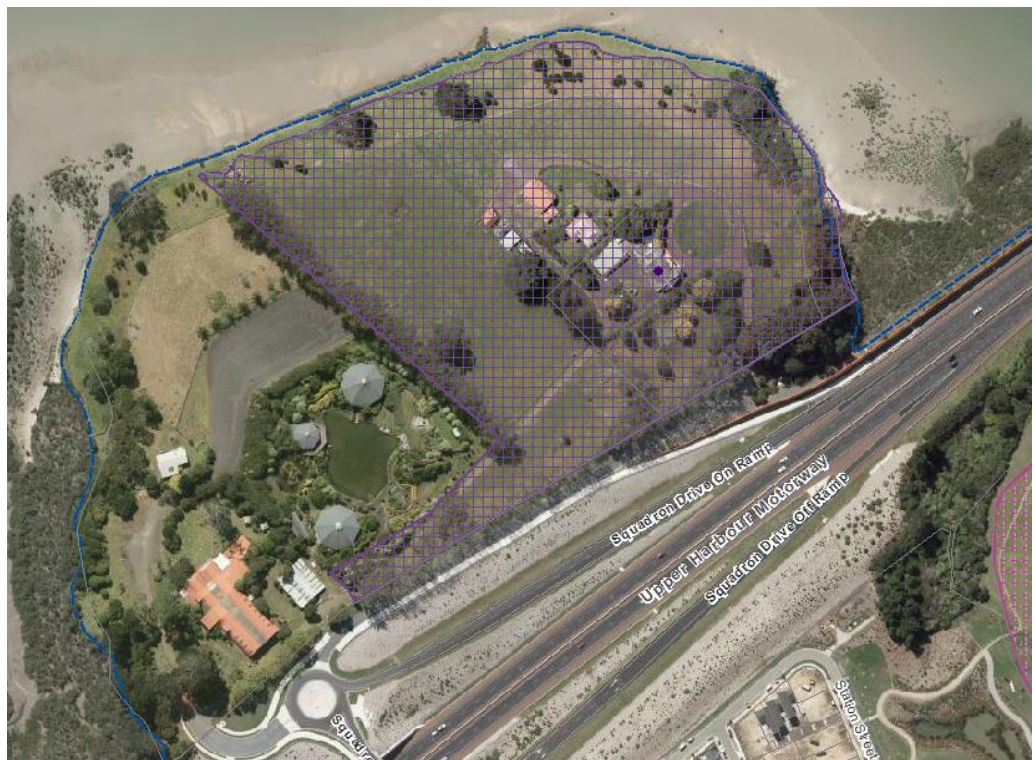
## ASSESSMENT RESULTS, CONTINUED

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**Figure 16**  
Recorded  
location of  
R11/495



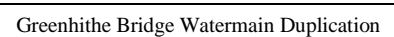
**Figure 17. Close-up view showing the location of Duke House and Servants Quarters within the scheduled extent of place (PAUP ID 130)**



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# DISCUSSION AND CONCLUSIONS

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## **Summary of Results**

No archaeological or other historic heritage sites were identified within the proposed area of works as a result of the current appraisal. Shell midden site R11/495, which was recorded in the 1970s in the immediate vicinity of the proposed area of works, could not be relocated and is presumed to have been destroyed by construction works associated within the motorway and bridge development. In addition, works at the south-western end of Greenhithe Bridge do extend into the scheduled extent of place around Duke House and Servants Quarters (PAUP ID 130), although the proposed works are well removed from the scheduled features.

The project area was found to have been extensively modified through works over the last few decades and it is considered unlikely that any subsurface archaeological remains will have remained intact along the existing road reserve and around the bridge abutments.

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## **Maori Cultural Values**

This is an assessment of effects on archaeological values and does not include an assessment of effects on Maori cultural values. Such assessments should only be made by the tangata whenua. Maori cultural concerns may encompass a wider range of values than those associated with archaeological sites.

The historical association of the general area with the tangata whenua is evident from the recorded sites, traditional histories and known Maori place names.

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## **Survey Limitations**

It should be noted that archaeological survey techniques (based on visual inspection and minor sub-surface testing) cannot necessarily identify all sub-surface archaeological features, or detect wahi tapu and other sites of traditional significance to Maori, especially where these have no physical remains.

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## **Historic Heritage Value and Significance**

The Hobsonville and Greenhithe areas both retain significant archaeological value related to both Maori occupation and early European settlement and industry. The proposed area of works, however, is considerably modified and has no known archaeological value or significance.

Duke House and Servants Quarters is a scheduled historic heritage place on the PAUP (ID 130) and has therefore been assessed against the relevant statutory. It is scheduled under Category A\* , and its primary features are the house and the servants quarters. The place has been scheduled for its Historical, Physical and Contextual values.

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## DISCUSSION AND CONCLUSIONS, CONTINUED

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### Effects of Proposal

The proposed works will extend slightly into the scheduled extent of place of Duke House and Servants Quarters (Figure 17, Figure 18). The works within the historic heritage extent of place will involve vegetation removal, topsoil stripping and levelling for the construction of the temporary access and the construction lay down area. There may also be some deposition of fill to create a level surface. Vegetation removal and earth working will also be required for the development of the proposed causeway extension that terminates at the existing foreshore bank. Open trenching for the laying of the new wastewater and watermain pipes will also extend into the historic heritage extent of place. Future plans for the reinstatement of the area are currently being developed with the landowner. The proposed works will have no effect on the primary features Duke House and Servants Quarters.

The proposed watermain installation works along Greenhithe Bridge will have no known effects on archaeological values as there are currently no known archaeological or other historic heritage sites located within the proposed area of works.

However, in any area where archaeological sites have been recorded in the general vicinity it is possible that unrecorded subsurface remains may be exposed during development. It is considered possible that previously unrecorded subsurface archaeological sites (e.g. shell midden deposits, historic rubbish deposits) may be exposed during development particularly at the Hobsonville end of proposed works, and it is therefore recommended that consideration is given to applying for an Authority prior to the start of earthworks so that potential delays can be avoided should sites be exposed.

Archaeological features and remains can take the form of burnt and fire cracked stones, charcoal, rubbish heaps including shell, bone and/or 19th century glass and crockery, ditches, banks, pits, old building foundations, artefacts of Maori and early European origin or human burials. In this case it is possible that shell midden may be exposed when works extend into previously unmodified areas south of Duke House.

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## DISCUSSION AND CONCLUSIONS, CONTINUED

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### **Resource Management Act 1991 Requirements**

Section 6 of the RMA 1991 recognises as matters of national importance: *‘the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga’* (S6(e)); and *‘the protection of historic heritage from inappropriate subdivision, use, and development’* (S6(f)).

All persons exercising functions and powers under the RMA are required under Section 6 to recognise and provide for these matters of national importance when *‘managing the use, development and protection of natural and physical resources’*. There is a duty to avoid, remedy, or mitigate any adverse effects on the environment arising from an activity (S17), including historic heritage.

Historic heritage is defined (S2) as *‘those natural and physical resources that contribute to an understanding and appreciation of New Zealand’s history and cultures, deriving from any of the following qualities: (i) archaeological; (ii) architectural; (iii) cultural; (iv) historic; (v) scientific; (vi) technological’*. Historic heritage includes: *‘(i) historic sites, structures, places, and areas; (ii) archaeological sites; (iii) sites of significance to Maori, including waahi tapu; (iv) surroundings associated with the natural and physical resources’*.

Regional, district and local plans contain sections that help to identify, protect and manage archaeological and other heritage sites. The plans are prepared under the rules of the RMA. The Auckland Council District Plan: Operative Waitakere Section (2003) and the Proposed Auckland Unitary Plan (PAUP) (notified September 2013) are relevant to the proposed activity.

This assessment has established that the proposed activity will have no effect on any scheduled heritage items or known archaeological remains, but will extend slightly into the south-eastern part of the extent of place of a scheduled heritage site on the PAUP. This is Duke House and Servants Quarters, scheduled on the PAUP as a Category A\* historic heritage place (ID 130). It is also scheduled on the operative plan as a Category 1 heritage item (no. 1460), but without the defined extent of place. The works are well removed from the scheduled features and will not affect them. However, there is some potential to affect unrecorded subsurface archaeological remains in the form of shell midden.

If resource consent is granted, it is recommended that a condition requiring archaeological monitoring of works within the identified historic heritage extent of place for Duke House (ID 130) at the Hobsonville end of the proposed works is included. It is also recommended that an advice note regarding the provisions of the HNZPTA is included.

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*Continued on next page*

## DISCUSSION AND CONCLUSIONS, CONTINUED

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**Heritage New  
Zealand  
Pouhere  
Taonga Act  
2014  
Requirements**

In addition to any requirements under the RMA, the HNZPTA protects all archaeological sites whether recorded or not, and they may not be damaged or destroyed unless an Authority to modify an archaeological site has been issued by Heritage NZ (Section 42).

An archaeological site is defined by the HNZPTA Section 6 as follows:

*‘archaeological site means, subject to section 42(3), –*

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

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

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

*(b) includes a site for which a declaration is made under section 43(1)’<sup>9</sup>*

Authorities to modify archaeological sites can be applied for either in respect to archaeological sites within a specified area of land (Section 44(a)), or to modify a specific archaeological site where the effects will be no more than minor (Section 44(b)), or for the purpose of conducting a scientific investigation (Section 44(c)). Applications that relate to sites of Maori interest require consultation with (and in the case of scientific investigations the consent of) the appropriate iwi or hapu and are subject to the recommendations of the Maori Heritage Council of Heritage NZ. In addition, an application may be made to carry out an exploratory investigation of any site or locality under Section 56, to confirm the presence, extent and nature of a site or suspected site.

While no known archaeological sites will be affected by the proposed works, it is possible that unidentified subsurface archaeological remains may be exposed during development.

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<sup>9</sup> Under Section 42(3) an Authority is not required to permit work on a pre-1900 building unless the building is to be demolished. Under Section 43(1) a place post-dating 1900 (including the site of a wreck that occurred after 1900) that could provide ‘significant evidence relating to the historical and cultural heritage of New Zealand’ can be declared by Heritage NZ to be an archaeological site.

## DISCUSSION AND CONCLUSIONS, CONTINUED

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**Heritage New  
Zealand  
Pouhere  
Taonga Act  
2014  
Requirements,  
*continued***

In order to avoid any delays should unidentified subsurface features be exposed by the proposed works, consideration could be given to applying for an authority under Section 44(a) of the HNZPTA to cover all works undertaken for this project, as a precaution. This should be obtained before any earthworks are carried out. The conditions of the authority are likely to include archaeological monitoring of preliminary earthworks in selected areas, and procedures for recording any archaeological evidence before it is modified or destroyed. This approach would have the advantage of allowing any archaeology uncovered during the development of the property to be dealt with immediately, avoiding possible delays.

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**Conclusions**

Watercare Services Ltd is proposing the installation of a watermain along Greenhithe Bridge and its approaches. The works will be located primarily within existing road reserve and within the CMA. No known intact archaeological or other historic heritage sites are located within the immediate vicinity of the proposed works. There is little some potential for unidentified subsurface remains to be exposed at the Hobsonville landward end of the proposed works, north of the existing road reserve.

The proposed works extend into the south-eastern part of the scheduled historic heritage extent of place for Duke House and Servants Quarters (PAUP ID 130), but are well removed from the scheduled features.

The proposed works will have no known effects on archaeological values. However, if previously unidentified archaeological remains are exposed by earthworks, they would have statutory protection under the HNZPTA and cannot be modified without authorisation from the Heritage NZ.

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# RECOMMENDATIONS

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**It is  
Recommended:**

- That there should be no constraints on the proposed Greenhithe Bridge Watermain duplication works on archaeological grounds or other historic heritage grounds, since no archaeological sites are known to be present and it is considered unlikely that any will be exposed during development.
  - That the proposed works in previously unmodified areas within the scheduled extent of place for Duke House and Servants Quarters (PAUP ID 130) are monitored by an archaeologist in case any unidentified subsurface remains are present.
  - That if subsurface archaeological evidence should be unearthed during construction (e.g. intact shell midden, hangi, storage pits relating to Maori occupation), work should cease in the immediate vicinity of the remains and the Council, Heritage NZ and tangata whenua (if relevant) should be notified. An authority would then be required for any works impacting archaeological remains.
  - That as an alternative consideration is given to applying for an Authority under Section 44(a) of the HNZPTA as a precaution prior to works being undertaken. This would minimise delays if sites are exposed, and allow appropriate action to be taken
  - That any significant changes to the proposed works layout should be subject to further assessment.
  - That in the event of koiwi tangata (human remains) being uncovered, work should cease immediately in the vicinity of the remains and the tangata whenua, HNZ, NZ Police and Council should be contacted so that appropriate arrangements can be made.
  - That since archaeological survey cannot always detect sites of traditional significance to Maori, such as wahi tapu, the tangata whenua should be consulted regarding the possible existence of such sites within the project area.
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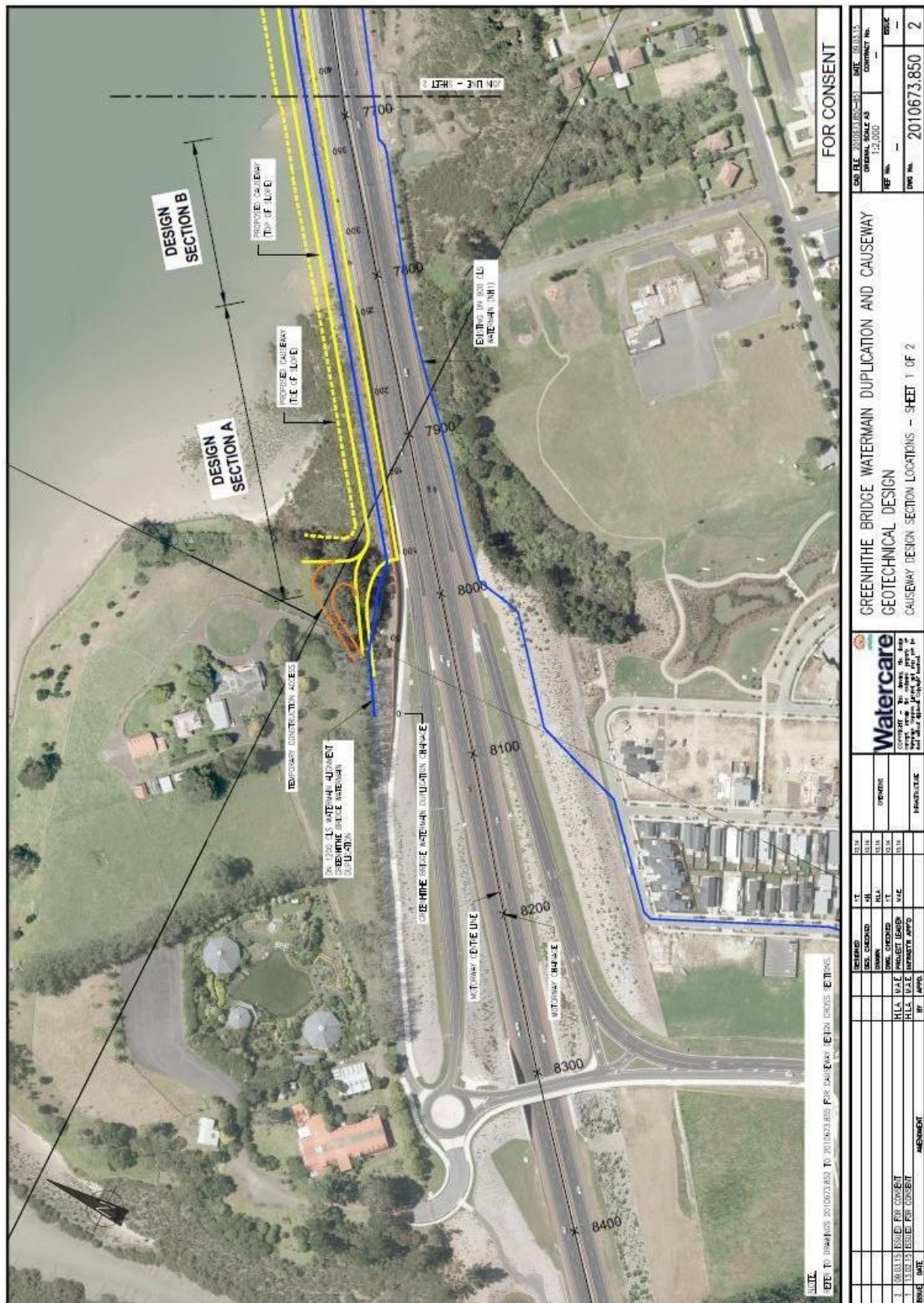




















## APPENDIX B: SITE RECORD FORMS

### NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <b>Site Record Form</b> archaeological site recording scheme		<b>NZAA SITE NUMBER:</b> R11/495  <b>SITE TYPE:</b> Midden/Oven  <b>SITE NAME(s):</b>  <b>DATE RECORDED:</b>
<b>SITE COORDINATES (NZTM)</b> Easting: 1747952      Northing: 5927283      Source: CINZAS		
<b>IMPERIAL SITE NUMBER:</b> N42/505 <b>METRIC SITE NUMBER:</b> R11/495		
		
<b>Finding aids to the location of the site</b>		
<b>Brief description</b> MIDDEN		
<b>Recorded features</b> Midden		
<b>Other sites associated with this site</b>		

AA AI AA BD AA IO

Waitemata

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION <b>SITE RECORD FORM</b>		SITE NUMBER <u>N42/505</u>	
Map number <u>N42</u>		SITE NAME: MAORI	
Map name <u>Auckland</u>		OTHER	
Map edition <u>3rd</u>		SITE TYPE <u>MIDDEN</u>	
Grid Reference <u>179679</u>			
<p>1. Aids to relocation of site <u>E217900 N667900</u>          On top of point on edge of Hobsonville Air Base, in top of cutting on south side of western approach to upper Harbour Bridge, 10m ASL and 300m north west of airbase main gate.</p>			
<p>2. State of site; possibility of damage or destruction <u>Mostly destroyed by road cutting.</u></p>			
<p>3. Description of site <i>(NOTE: This section is to be completed ONLY if no separate Site Description Form is to be prepared.)</i></p> <p><u>10m long exposure of shell layer up to 0.2m thick that formerly extended over flat top of point. Contains <u>Chione</u>, <u>Crassostrea</u>, <u>Amphibola</u> and charcoal.</u></p>			
<p>4. Owner <u>N.Z. Air Force</u></p> <p>Address <u>Hobsonville</u></p>		<p>Tenant/Manager</p> <p>Address</p>	
Attitude		Attitude	
<p>5. Methods and equipment used</p> <p>Photographs taken: Yes/No (Describe on Photograph Record Form)</p> <p>Date recorded <u>10 . 9 . 1977</u></p>			
<p>6. Aerial photograph or mosaic No.</p>		<p>Site shows:</p> <p>Clearly/badly/not at all</p>	
<p>7. Reported by <u>B.W. Hayward,</u></p> <p>Address <u>J.T. Diamond</u></p> <p><u>35A Mariri Rd., Onehunga</u></p>		<p>Filekeeper <u>J. Davidson</u></p>	
Date		Date <u>Nov. 1977</u>	



CHI Places Number	5955	NZAA Site Number	R11_495
NZMS 260 map number	R11	Date of visit	Jul 2001
NZMS 260 map name	Auckland	Type of site or area	MIDDEN (SHELL)
NZMS 260 map edition	Edition 1 1981	Name	
Grid references Easting:	2658400	Northing	6489000
<b>1. Aids to relocation of site (attach a sketch map):</b>			
Hobsonville   Massey   Waitemata			
<b>2. State of site and possible future damage:</b>			
NZAA Condition: Partly damaged, continuing minor damage   Mostly destroyed by road cutting			
<b>3. Description of site (supply full details, history, local environment, references, sketches, etc. If extra sheets are attached include a summary here)</b>			
On top of point, edge of Hobsonville air base, in top of cutting on south side of western approach to upper harbour bridge. 10m ASL & 300m NW of airbase main gate. 10 x 0.2m shell layer exposed that formerly extended over flat top of point. Contains Chione, Crassostrea, Amphibola and charcoal.			
<b>Additional Notes:</b>			
Additional information by Don Prince 2001. A systematic inspection of the cutting on the south side of the western approach to the Upper Harbour Bridge failed to detect any evidence of the site recorded in 1977 by Haywood and Diamond. There is some confusion in interpreting Haywood and Diamond's aids to relocation (R11/495), as their description of the site being "300m northwest of airbase main gate" contrasts with the recorded grid reference co-ordinates that place the site to the north east of the gate house. It is assumed that the grid reference co-ordinates are correct and the north west description is a typing error. However, as no evidence was detected at either location, the entire cut was inspected. The cut today has a dense, and in places, impenetrable vegetation cover (kykuyu grass, gorse, pampas grass, mixed regenerating native and pine) that may conceal evidence of the site.			
<b>4. Owner</b>		<b>Tenant/Manager</b>	
<b>Owner Address</b>		<b>Tenant/Manager Address</b>	
<b>5. Nature of information (heresay, brief or extended visit, etc.)</b>			
<b>Aerial photographs (reference numbers, and clarity of site)</b>			
<b>Photographs (reference numbers, and where they are held)</b>			
<b>6. Reported by</b>	Bruce W. Hayward and John (Jack) T. Diamond   Don Prince	<b>Date recorded</b>	10 Sep 1977   Jul 2001
<b>Filekeeper</b>		<b>Date (NZAA SRF Entry Date)</b>	1977
<b>Address</b>			
<b>7. Keywords</b>	MIDDEN   PREHISTORIC   MAORI   MODIFIED   CMA   LBD   MODIFIED BY HUMAN ACTIVITY		
<b>8. New Zealand Register of Archaeological Sites (for office use)</b>			
<b>NZHPT Site Field Code</b>			
<b>Latitude S</b>		<b>Latitude E</b>	
AA	<b>Type of site</b>	BD	<b>Present condition and future danger of destruction</b>
IO	<b>Local environment today</b>		<b>Security Code</b>
AA	<b>Land classification</b>	MK	<b>Local body</b>

NZMS 260 map number	R11	Date of visit	Not visited
NZMS 260 map name	Auckland	Type of site or area	AIRCRAFT
NZMS 260 map edition	Edition 1 1981	Name	
Grid references Easting:	2658500	Northing	6489200
<b>1. Aids to relocation of site (attach a sketch map):</b>			
Clark Point   Hobsonville   Upper Waitemata.			
<b>2. State of site and possible future damage:</b>			
<b>3. Description of site (supply full details, history, local environment, references, sketches, etc. If extra sheets are attached include a summary here)</b>			
World war II American airplane crash site.			
<b>Additional Notes:</b>			
A Hudson bomber crashed into the harbour off Hobsonville and the tail could be seen sticking out from the mud just below the sewer beacon, visible from the Upper Harbour Crossing at Greenhithe. SE 1250 p.43. Is this the same one? Also a Dakota crashed somewhere (SE 176).   Additional information by Malcolm Hahn (2006): Extract from 'God Willing and Weather Permitting': 65 years after a Lockheed Hudson bomber crashed into the mud flats, the remains of the war plane can still be seen beside the approaches of the Upper Harbour Bridge when the tide is out. On the night of the 25th January 1943, the crew of two were doing what is called circuits and bumps, which basically is practice landings under emergency situations, when the plane lost height and crashed into the water. It is thought that both of the crew drowned when they attempted to swim ashore towards Herald Island.			
<b>4. Owner</b>		<b>Tenant/Manager</b>	
<b>Owner Address</b>		<b>Tenant/Manager Address</b>	
<b>5. Nature of information (heresay, brief or extended visit, etc.)</b>		Not visited, reported only	
<b>Aerial photographs (reference numbers, and clarity of site)</b>			
<b>Photographs (reference numbers, and where they are held)</b>			
<b>6. Reported by</b>	Michael Taylor   Malcolm Hahn	<b>Date recorded</b>	8 Jul 1993   2006
<b>Filekeeper</b>		<b>Date (NZAA SRF Entry Date)</b>	
<b>Address</b>			
<b>7. Keywords</b>	HISTORIC   AVIATION   AEROPLANE   MILITARY   AIRPLANE   AIRCRAFT   WORLD WAR II   CMA   ACZ   Lockheed Hudson Bomber		
<b>8. New Zealand Register of Archaeological Sites (for office use)</b>			
<b>NZHPT Site Field Code</b>			
<b>Latitude S</b>		<b>Latitude E</b>	
	<b>Type of site</b>		<b>Present condition and future danger of destruction</b>
	<b>Local environment today</b>		<b>Security Code</b>
	<b>Land classification</b>		<b>Local body</b>
<b>ACC Heritage Number</b>			

<b>CHI Places Number:</b>	3039
<b>Date Record Updated:</b>	9/06/2014 1:17:21 p.m.
<b>Data Entered by:</b>	Tessa Bryant
<b>Local Authority:</b>	Waitakere City Council
<b>District/Regional Plan Name:</b>	Waitakere City Council, District Plan Operative, 2002
<b>Listing Status in District/Regional Plan Scheduling:</b>	Registered
<b>NZAA Record Status:</b>	Brief
<b>Upgrade Exclusion:</b>	None
<b>Photograph and Map Filepaths:</b>	
<b>ArcView Category:</b>	Historic Structure
<b>Site Type:</b>	BUILDING - DWELLING
<b>Location:</b>	2 Squadron Drive   Hobsonville   Upper Harbour Drive   Waitemata
<b>Description:</b>	<p>  Early home of R O Clark. Constructed of ceramic building blocks - apparently made manually. Has carved stone window surrounds and coloured glass fan lights around over the front door.   Additional information by Sally Burgess (March 9 2000): "Ornate 19th Century Clarks glazed ceramic block villa and attached buildings." (WC Proposed District Plan 1998 version)</p>
<b>Keywords:</b>	<p>BLOCK VILLA   CLARK   Duke House   Duke house and servants quarters   GLAZED BLOCK   Hobsonville   HOUSE   HOUSE   HOUSE - HISTORIC   Proposed Auckland Unitary Plan   PROPOSED PLAN SCHEDULE   PROPOSED PLAN SCHEDULE   UP Category A*   UPID00130   Upper Harbour Drive   VILLA</p>
<b>Notes:</b>	<p>  Additional information by Catherine Liang (no date). This house was an early home of R O Clark who later built the Clark Homestead. The house is constructed of ceramic building blocks which appear to have been made manually, rather than mechanically as those in the Clark homestead were made. The building also has carved stone window surrounds and coloured glass fan lights around and over the front door. The servants' quarters adjacent to the rear of the building are in a similar style to the house and originally contained the kitchen.</p> <p>  Additional information by Sally Burgess (Feb 2000): Interpretation at 'Ngaroma' (CHI computer no 2411).</p> <p>  Additional information by Lisa Truttman (27/06/2012). T.E. Clark's house (now Monterey Park), Upper Harbour Drive, Hobsonville, circa 1908. The house was gifted to T.E. Clark by his family at his marriage in April 1908 to Margaret Morison, of a prominent Mahurangi settler family. Also known as Duke or Duke's House, the building featured in the circa 1909 advertisement as 'the Manager's villa'. T.E. Clark had been appointed works manager some time prior to 1909. The square fronted villa with verandahs to the front and rear, has a bay off one side. Ancillary buildings constructed of stoneware blocks included a servant's quarters and a creamery (the former still intact and the latter in a 'half-demolished' state in 1991). The main building has been modified by the removal of a rear wall, although this was subsequently reinstated. Other modifications have included re-roofing, the installation of replica ceilings and repairs to the verandah.   Information from NZHPT record 7709.</p>
<b>Name:</b>	Additional information from NZHPT (14/12/2012): An Authority (2013_309) has been granted to Summerset Group Holdings Limited to undertake earthworks for the construction of a retirement village in the vicinity of R11/496, R11/497, R11/498 and possible unrecorded archaeological sites.
<b>Legal Description:</b>	Duke House   Duke House and Servants Quarters
<b>Grid Reference Source:</b>	Lot 2 DP 89918
<b>Metric Map Number:</b>	GIS Calculated
<b>NZTM Easting:</b>	R11
<b>NZTM Northing:</b>	1747745
<b>NZTM Map Sheet:</b>	5927323
<b>Metric Map Name:</b>	None
<b>Metric Map Edition:</b>	Auckland
<b>Date Recorded:</b>	Edition 1 1981
<b>Reported By:</b>	15/12/1993   No date   00/02/2000   26/06/2012   14/12/2012
<b>Information Source:</b>	Waitakere City Council   Catherine Liang   Sally Burgess   Lisa Truttman   NZHPT
<b>NZHPT Registration Type:</b>	Scheme
	None
<b>Linked Biblio records:</b>	
	<a href="#">1870</a>
	<a href="#">3898</a>
	<a href="#">3899</a>
	<a href="#">10229</a>
	<a href="#">10479</a>
	<a href="#">10482</a>