Tūpuna Maunga Authority

Heritage Impact Assessment of Proposed Tree Removals and Re-vegetation Planting Plan for

Ōtahuhu/ Mt Richmond

June 2021

FOR : Tūpuna Maunga Authority
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C O N T E N T S

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1. INTRODUCTION

In 2018, I was engaged by the Tūpuna Maunga Authority to provide a Heritage Impact Assessment (HIA) of Proposed Tree Removals and Re-vegetation Planting for Ōtāhuhu/Mount Richmond. This revision to the HIA reflects changes to the proposed project. The changes reduce the number of trees proposed to be removed and processing areas. This HIA supersedes the version dated February 2019.

The Tūpuna Maunga Authority are proposing to remove approximately 278 exotic trees from Ōtahuhu/ Mt Richmond. There are a number of reasons for this, including;

- Removal of trees and therefore over time their living root systems from damaging archaeological sites and evidence.
- A number of the trees are near the end of their life expectancy and constitute a danger to the public from falling limbs, branches or uprooting of the trees themselves. They also for the same reasons have potential to damage the archaeological evidence through impact damage when they fall or by altering the terraces or other adjacent features should they be uprooted when they fail.
- To re-establish the shape of the Mountain so that the historic sightlines and archaeological evidence can be viewed within the landscape.
- There are a number of trees present that are considered pest plants for which surveillance is required.

To mitigate the removal of the exotic trees it is proposed to revegetate parts of the Reserve, the aims are (Te Ngahere 2018);

- Use methods and species appropriate for archaeologically sensitive areas.
- Enhance the quality of habitat used by native fauna including skinks, ngā manu (birds), and native invertebrates.
- Prevent the re-establishment of weed species.
- Protect sites by reducing foot traffic through some areas.
- Promote species of appropriate heights to maintain historic defence sightlines where needed.
- Assist and promote natural ecological processes.

Part of Ōtahuhu/ Mt Richmond is scheduled on the Auckland Council Unitary Plan as ID 1657 (Figure 1) as a Significant Historic Heritage Place. Ōtahuhu/ Mt Richmond is recorded on the Auckland Council Cultural Heritage Inventory (CHI) with the record number 11691 and recorded with the New Zealand Archaeological Association (NZAA) as site R11/13. .

Ōtahuhu/ Mt Richmond is described in the Auckland Council CHI using the descriptions from the original NZAA Site Record Form. This being "*Round the scoria cone, like an artificial moat, is a swamp. Area already destroyed 48400 sq.yrds.*." Corrections add "*a large swamp crossed by a causeway"* and the area destroyed changed to *"91000 sq, yrds."*

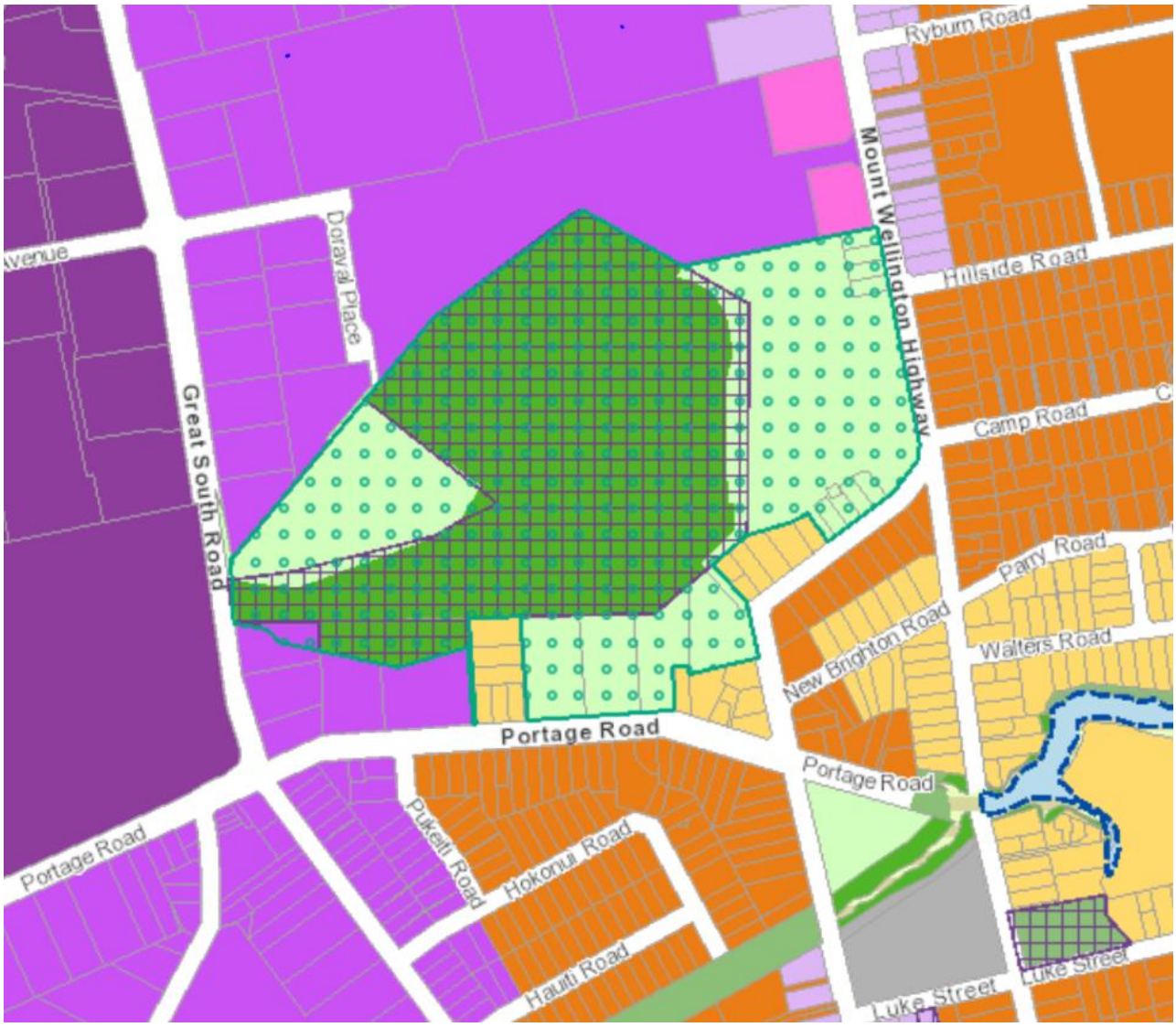

Figure 1. Auckland Council Unitary Plan illustrating the scheduled part of Ōtahuhu/ Mt Richmond outlined in red. The purple hatching is the Historic Heritage overlay.

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2. STATUTORY BACKGROUND

There are two main pieces of legislation that control work affecting archaeological sites in New Zealand. These are the *Heritage New Zealand Pouhere Taonga Act* 2014 (HNZPTA) and the *Resource Management Act* 1991 (RMA). The HNZPTA is administered by Heritage New Zealand Pouhere Taonga (HNZPT) and requires a consent (Authority) for any works that affect archaeological sites. In terms of the area under discussion the definition of an archaeological site in the Act is: any place in New Zealand that was associated with human activity that occurs before 1900 and which may be able, through investigation by archaeological methods to provide evidence relating to the history of New Zealand. Any person who intends to carry out work that may damage, modify or destroy an archaeological site must first obtain an authority from the HNZPT.

The authority process applies to all sites that fit the criteria of the HNZPTA, regardless of whether the site is recorded in the New Zealand Archaeological Association (NZAA) site recording scheme or if the site only becomes known of as a result of ground disturbance or if the activity undertaken is permitted under a district or regional plan or if a building consent has been granted. The RMA requires City, District or Regional Councils to manage the use, development and protection of natural and historic resources in a way that provides for the wellbeing of today's communities whilst safeguarding the options for future generations. The protection of historic heritage from inappropriate development is identified as a matter of national importance (section 6f). Historic heritage is defined as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from archaeological, architectural, cultural, historic, scientific or technological qualities. Historic heritage includes: historic sites, structures, places and areas; archaeological sites; sites of significance to Maori, including wahi tapu, and surroundings associated with natural and physical resources. These criteria are not mutually exclusive.

The historic heritage value of Ōtahuhu/ Mt Richmond is recognised and the place is scheduled on the Auckland Council Unitary Plan as item 1579.

3. SITE HISTORY

The following is a summary of the history from a number of sources. It is recognised that individual Iwi will have their own histories and traditions that pertain to the maunga that may differ or add more detail than what is outlined here.

Searle (1981:65) describes the formation of the mountain as being a fire-fountain that built up a scoria mound to overtop the tuff ring. Searle (1981:131) geologically describes Ōtahuhu/ Mt Richmond as an "*imposing structure, even in its present emasculated condition. A large deep explosion crater with surrounding ring encloses a cluster of vents which have built up a complex scoria mound that overtops the tuff ring on the south-western side. At least seven vents built distinguishable cones or craters in the scoria mound but in no case was sufficient lava produced to form a flow big enough to escape from the crater*." The eruptions occurred circa 32000 years ago (Grenfell 2015).

Searle (*ibid*) recognized that the maunga "*was an outstanding pa that dominated the shortest and most used portage on the isthmus - now Portage Road*" and that " *Major quarrying has occurred on the west, the scattered scoria pits, and the old water tower to the south have left their scars*." Cameron, Hayward and Murdoch (1997:226) describe Ōtahuhu/ Mt Richmond as "*the partly quarried remains of several small scoria cones formed by lava fountaining from a number of craters. The cones sit in the middle of a 1km diameter explosion crater with surrounding tuff ring……In places it is difficult to recognize the original shape of the scoria cones and tuff ring because substantial parts have been removed."*

The first acknowledgement of the Ōtahuhu district and portage between the Manukau and Waitemata Harbours is attributed to the explorations of the Tainui waka (Otahuhu Borough Council 1948).

There are a number of explanations for the naming of Ōtahuhu (Sedal 1982:9), these include that it was the location that a chief by the name of Tahuhu or Tahuhunui lived, another explanation is that it refers to the area being "*The Ridge Pole*" referring to the Ōtahuhu isthmus figuratively being a ridge pole between the Waitemata and Manukau harbours, another claim has been that it refers to being "*Ota*" uncooked "*Huhu*" referring to the grub. Another theory again suggests that it refers to a "*Tahuhu*" being either a horizontal pole used for supporting birds nests: also interpreted as meaning a direct line of ancestry and another referring to it referring to a ceremonial stick laid by a

tohunga prior to an attack. The majority of sources refer to the name relating to Tahuhu(nui) – *The dwelling place of Tahuhu* (Howard, 1998, Simmons, 1987, Tamaki City Council 1977), however some such as Cameron, Hayward and Murdoch (1997) acknowledge both the Chiefly name and the ridgepole name as possibilities, the ridgepole name possibly dating back to the times of the early exploration and settlement of New Zealand by the Tainui waka. The uncooked Huhu Grub name for the area is also speculated as relating to the time of Tainui exploration (Sedal 1982:9),

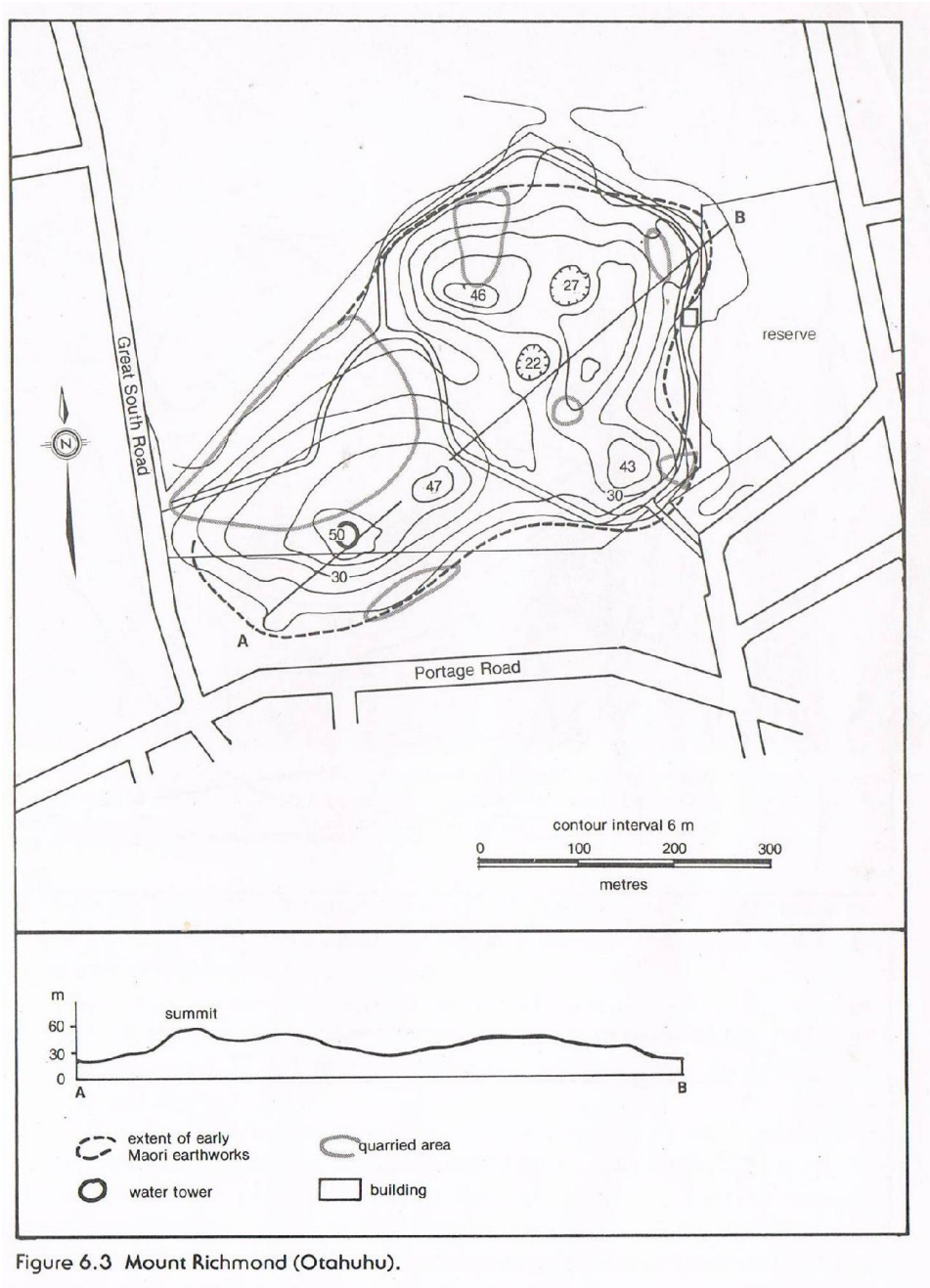

Figure 6.3 Mount Richmond (Otahuhu).

Figure 2. Illustration of the Mountain in 1961 identifying areas of quarrying and extent of the Maori earthworks. From Searle (1981: 133)

Sedal (1982:9-10) records that it is believed that Tahuhu(nui) and his people arrived from Whangarei and settled at Ōtahuhu/ Mt Richmond in the 15th century, after his death some returned back north whilst others settled, married with local Iwi and became Ngati Tahuhu, a hapu or smaller sub-iwi of the Waihoua Iwi of the Tamaki region.

Waihoua came into conflict with Ngati Whatua in the 18th century and were driven out of the district, after which Ngati Whatua settled the broader area, but not necessarily on the maunga itself. Later in the 18th century Te Akitai of the Ngati Paoa grouping challenged Ngati Whatua, eventually resulting in peace and the area is said to have been extensively gardened.

In 1820 early European visitors to the area noted that there was an extremely large population in the area and that the immediately adjacent portage was in high use (Sedal 1982:10) and is described in 1835 as being used almost daily and being very rutted from the continual usage. However after the Nga Puhi invasion of 1821 the wider area was deserted and became Tapu after much bloodshed and remained this way into the 1830s despite the frequent usage of the portage.

In 1835 things became more peaceful again, Waikato came to Ōtahuhu and arranged peace between the Waikato people and Ngati Paoa, the year later much of the district left Maori ownership and was purchased by the Reverend Fairburn (Sedal 1982:10). Fairburn (Otahuhu Borough Council 1948) "*climbed Mt Richmond himself and 'bought' …… all the land he could see to the south. ….Mt Richmond and the adjacent hills were covered with grass and on them grazed a flock of Rev. Fairburn's sheep – one of the earliest flocks in the country."*

Despite Fairburn's sheep apparently gazing on the mountain, the land was owned by another missionary, Reverend James Hamlin, Ōtahuhu/ Mt Richmond was the border of their purchases. When reviewed through the Old Land Claim process the mountain was retained by the Crown as a Quarry Reserve (Foster 2017:3).

In 1850 Fairburn sold 400 acres of his land to the government which eventually became the village of Otahuhu (named the same as but separate from the maunga) which was a Fencible settlement and the beginnings of the suburb we find today.

At this point of time the maunga was known as Mount Halswell, named after Edmund Storr Halswell who was the New Zealand Company Commissioner to manage native reserves. In the 1850s the name was changed to Mt Richmond, after a Lands Claim Commissioner involved in

Fairburns Land Claim (Howard 1998:163). Tamaki City Council (1977:2) also suggest that the maunga was once known as Hamlins Mountain, but whose name has now been transferred to a hill north of Westfield.

Figure 3. July 1861 drawing by John Kinder looking west to Mount Richmond from the McClennan Hills. Note the fencing around the base of the maunga and the lack of trees. From Grenfell 2015.

Plate 1. Mt Richmond from the east, undated photograph by S Percy Smith (likely late 1800s) illustrating the mountain, fencing at its base as observed in the 1861 drawing by Kinder and the swamp in the tuff ring. Again no trees are present. Auckland Museum PH-NEG-C6819

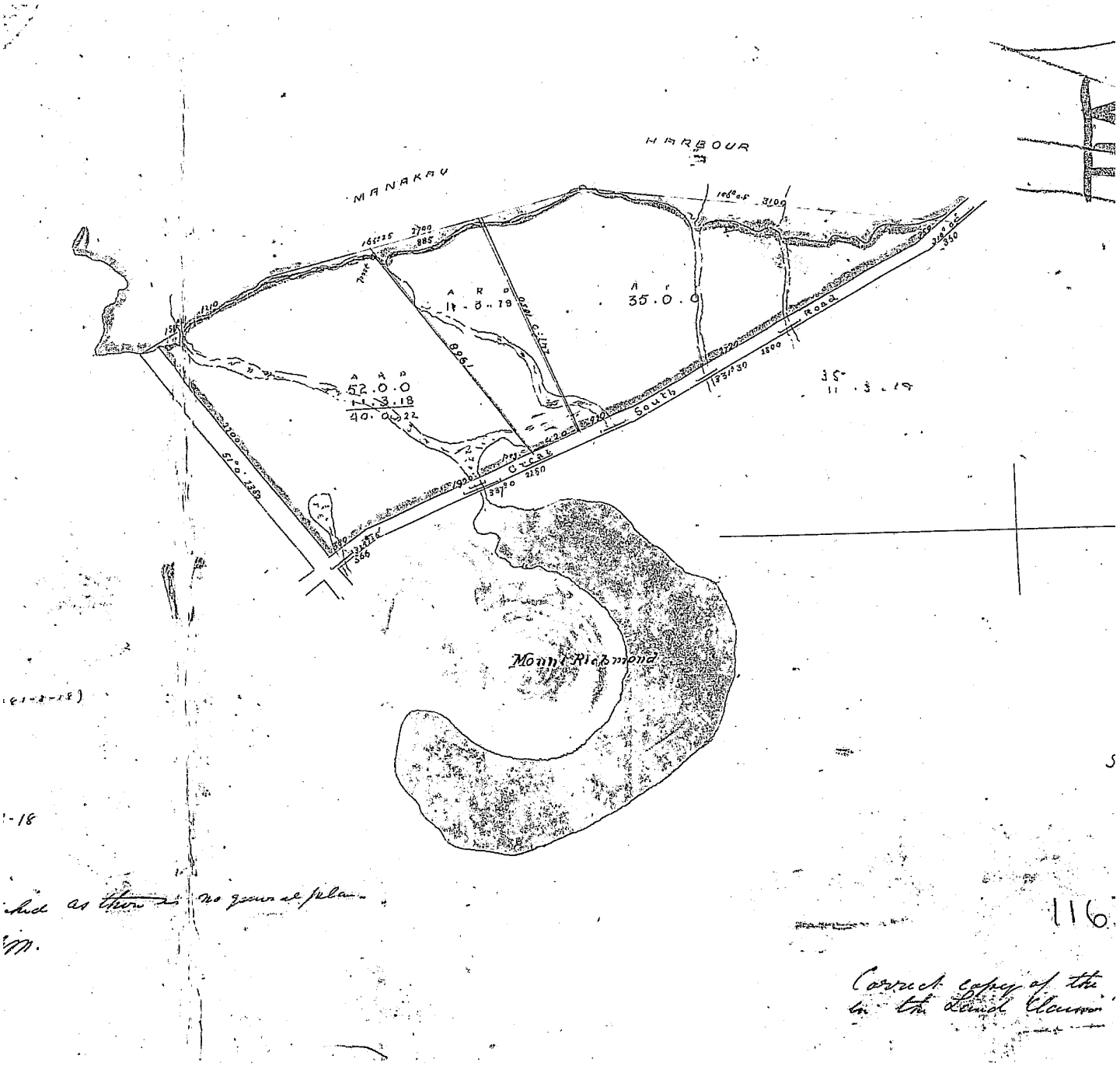

Figure 4. Part SO 1163A of 1858 illustrating Mount Richmond with the swamp on three sides draining out into the Manakau (sic) Harbour.

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Figure 5. Part SO 706 of 1860 refers to the mountain as a " GRAVEL and SPRING RESERVE". The swamp is illustrated around much of the mountain and the word "spring" appears in red next to Great South Road.

Scoria was a sort after resource during the development of the greater Auckland area, with all of the volcanoes being quarried to some extent or another, this intent is illustrated for Ōtahuhu/ Mt Richmond in Figure 5 above. In 1890 when the majority of the mountain was gazetted as a Reserve (Cameron, Hayward and Murdoch 1997:226) plans already showed a quarry Reserve on the northwest corner.

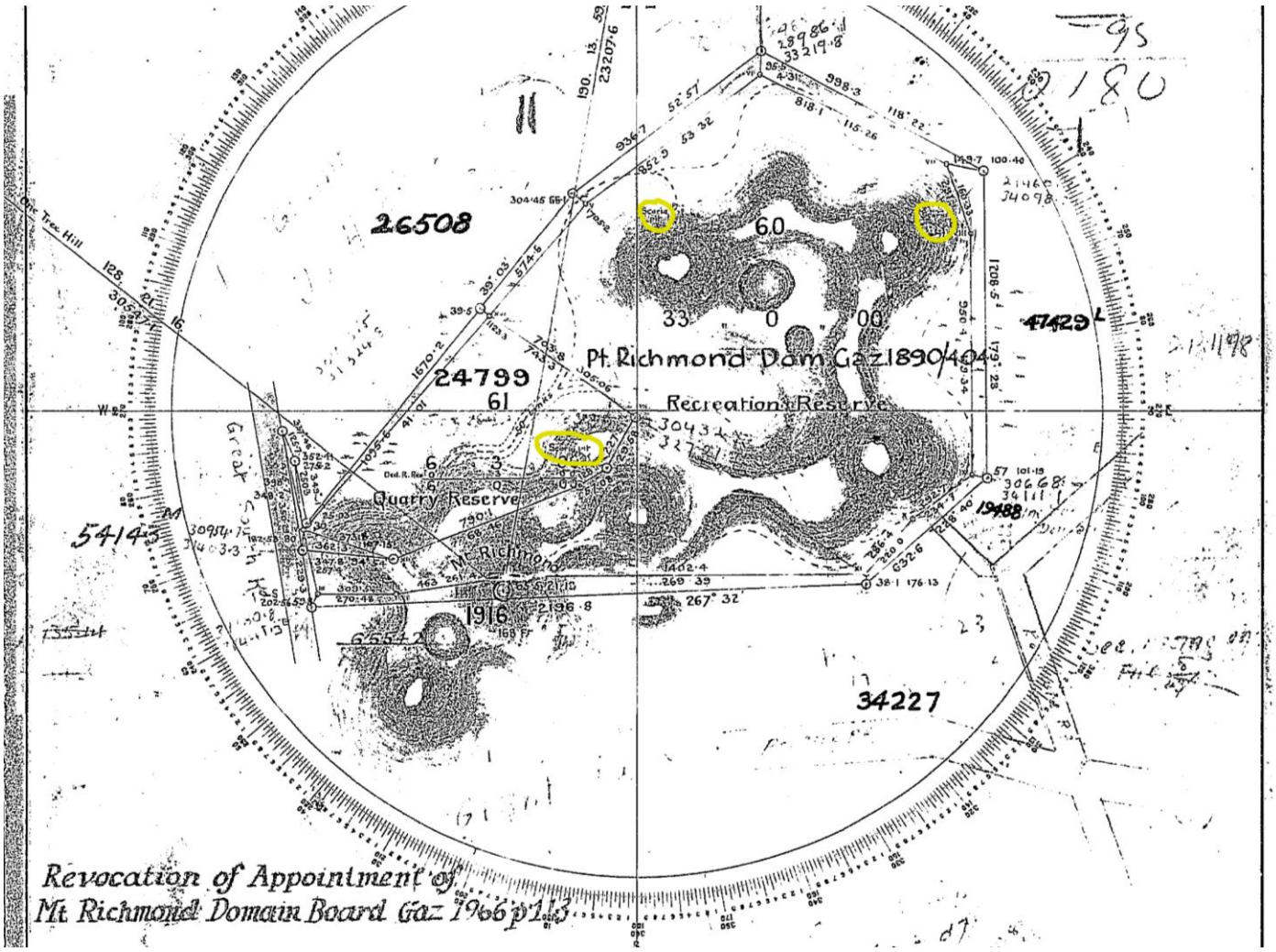

Figure 6. Part SO 5519 of 1899 that was used to gazette Mt Richmond in 1890. As well as a Quarry Reserve shown in the bottom left of the plan (section 61) three scoria pits (circled in yellow) were illustrated. The copying of the original plan is poor and the wording often difficult to decipher, it is possible that other scoria pits may also show on the original.

Another plan (illustrated in Grenfell 2015) cited as dating from 1890 shows the extent of quarrying in the quarry Reserve but not elsewhere on the maunga. The quarries illustrated in the series of plans illustrate the point that Howard (1997:164) makes where it is stated that Mount Richmond *"….has been quarried for scoria at various times and from several locations. The last being from the Great South Road/Portage Road corner to provide for the Mechanics Bay Container Terminal*."

Figure 7. Plan from Grenfell 2015. Grenfell states "*Map of the Mt Richmond area in 1890 (part of a map of* "Eden County*"). Not particularly accurate but does show the cluster of scoria cones and that quarrying activity was already underway*." The two separate areas (Quarry and Recreation Reserve) and their boundaries are clearly illustrated.

Tamaki City Council (1977:3) records that "*Quarrying in the vicinity began in 1870 and was controlled by the Mt Wellington Roads Board. The majority of scoria removed from Mt Richmond was used by the Mt Wellington and Otahuhu Road Boards. All proceeds from the sale of quarried material went back into the development of Mt Richmond Domain. Quarrying ceased in 1960."* These developments included various public buildings as well as the tree plantings across the mountain.

As well as being quarry and recreation reserves the Mountain was also used as a water supply after Reverend Mason divined a water source near the summit in 1909. This was used as a source for the Otahuhu Borough up until the 1950s (Tamaki City Council 1977:3).

Aerial photographs on the Auckland Council GIS also show snapshots of Ōtahuhu/ Mt Richmond from 1940, the 1940 photograph in particular is very clear and illustrates quarrying the past and present within and adjacent to the current Reserve (Figure 8).

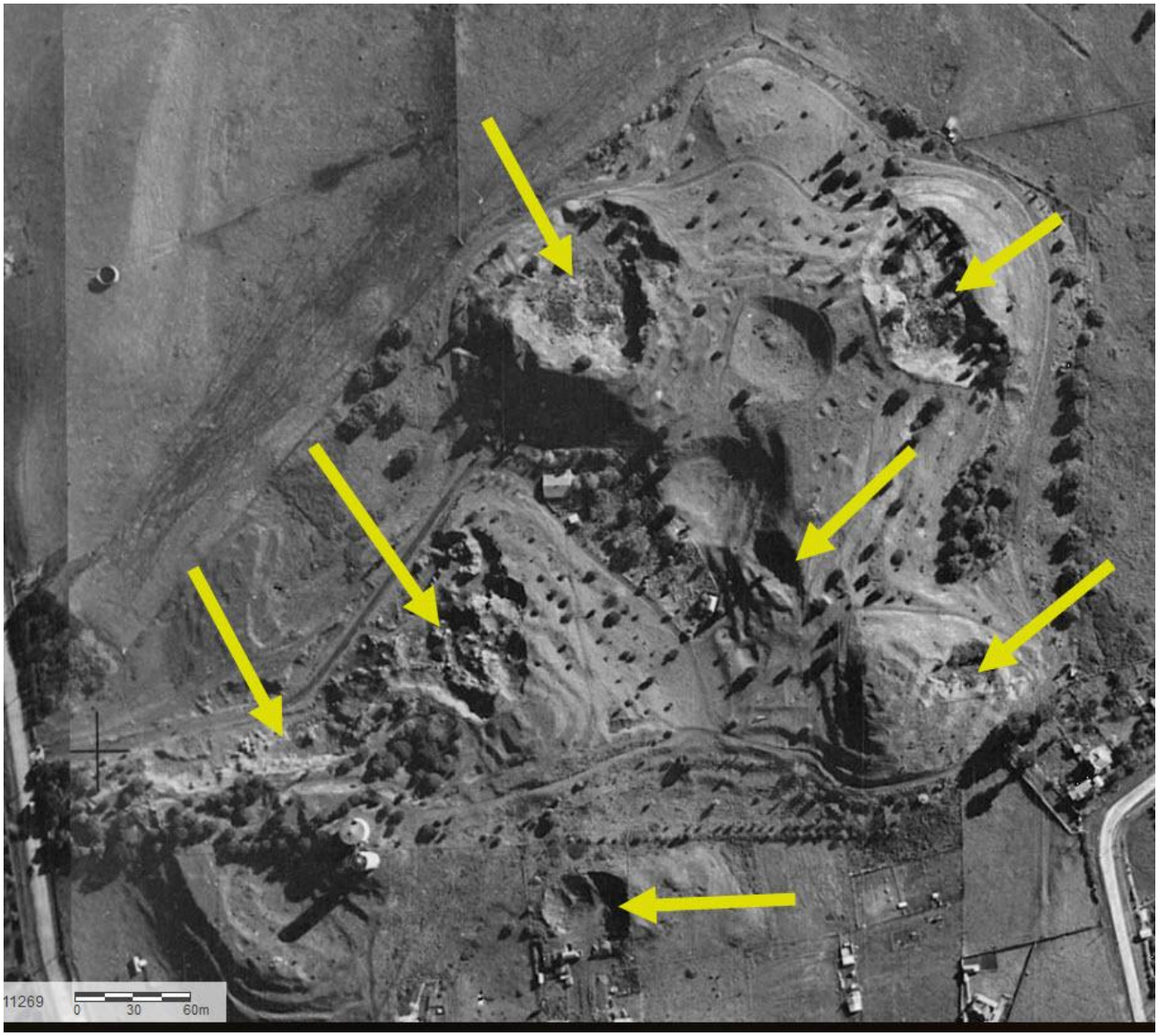

Figure 8. 1940 aerial photograph with locations of both then current and past quarrying activities arrowed. Some of these locations fall outside the current Reserve area.

The 1959 aerial photograph illustrates that many of these quarries have mature vegetation growing in them, thus illustrating that they are not currently in use, the northern slopes near Great South Road slopes appear to be in a state of being rehabilitated and works appear that they maybe ongoing on the adjacent lower ground.

Figure 9. 1959 aerial photograph, this shows that most of the quarry off Great South Road is still in operation and has been extended somewhat, the slopes upto the tihi have been rehabilitated and sloped prior to becoming part of the Reserve.

In the most recent aerial photograph (Figure 10) it can be seen that the growth of the trees within the Domain is such that it is not possible to positively identify the former quarry locations without prior knowledge, the large area quarried near Great South Road could be mistaken as a natural slope. It also illustrates that those parts of the maunga outside the Reserve have since been totally removed and replaced by commercial and residential properties.

Figure 10. 2017 aerial photograph, this shows that most of the quarry off Great South Road is still in operation and has been extended somewhat, the slopes upto the tihi have been rehabilitated and sloped prior to becoming part of the Reserve. Features between the Domain and Portage Road have been removed (compare to Figures 8 and 9).

4. ARCHAEOLOGY

The previous section has given an historical narrative; this section is the history and comments of archaeological recordings only.

Ōtahuhu/ Mt Richmond is recorded as R11/13 with the NZAA and as CHI record 11691 with Auckland Council. It was originally reported by Bob Brown in 1961 who recorded that it is a Pa site built round a scoria cone. Brown considered that 40400 square yards had been destroyed, though this is crossed out and the figure 90000 inserted over the typed number. It is recorded as Mt Richmond. A second sheet with historical information records the former name of Mt Halswell as

well as the "Maori Name" of Otahuhu, which it attributes to being named after Tahuhu. This same record records the recollections of Colonel G C Mundy who on December 18 1847 wrote that he visited Mount Halswell who mentioned "*that the remains of ancient fortifications to the very top are quite manifest. ….There are natives and even white men, who recollected the remnants of wooden palisades on Mount Halswell.*" Mundy described the mountain as being terraced with breast works and excavations originally roofed in which formed dwellings and potato stores, surrounding stone wall gardens and piles of white shells (midden).

In 1980 Tony Walton made a brief record based on brief visits on a number of occasions, Walton noted the historical references to the mountain, described it as largely intact, he also noted that the large terraced area to the south of the reservoir has been quarried away.

Leigh Johnson recorded and investigated evidence on the tuff ring to the north of the Reserve within private property in 1999 and 2002. He found that there were pre-contact Maori agricultural remains, seven small earth ovens and two parallel postholes in a semicircular alignment of approximately 12m length. A small pit was also observed but not investigated, it contained some cattle bones and Johnson was unsure whether it related to the Maori occupation of the site or was a farm burial. Other square postholes relating to an old farm fenceline alignment were also found.

Another site, R11/576 – a "zone" of terraces and pits, has been recorded to the north of the maunga on the tuff crater rim based on evidence observed on the 1940 aerial photographs, it is possible that evidence recorded by Johnson should be thought of as part of that site. Regardless of which site it has been recorded as, it no doubt was part of the larger archaeological landscape associated with Ōtahuhu/ Mt Richmond.

The Council CHI for Ōtahuhu/ Mt Richmond has the record number 11691. The record repeats what is found in the NZAA records but also alludes to missing information that must once have been in the NZAA files that have not made it to the current web based database – ARCHSITE. Missing records that are mentioned include reference to 7 small 6 x 4" cards with sketch plans and notes, various university student projects on the mountain from circa 1979 including comments on midden, pits, damage from water tower and quarry construction as well as stock damage. A comment is also made that motorbike damage was occurring in 1979 and that a car has been fired in one pit.

It is probable that the missing plans and projects were lost or are missing from the NZAA records after either of the following,

a) The transfer of the paper based files system from the Department of Conservation (DOC) to New Zealand Historic Places Trust (now Heritage New Zealand) circa 2000. It is my personal experience that some files I know that I deposited at DOC could not be found at NZHPT after the transfer, I was never able to assert whether they were lost or misfiled.
b) It was my experience that there were many plans kept in a separate file from the Site Record Forms at NZHPT that have not been copied and put on ARCHSITE. I have been told that at least some of them are due to copyright issues (pers com Meri Low who was auditing NZAA files at the time – year unknown). This may affect both the student reports and the plans.

Further to these student plans Peter Sheppard took the graduate paper Field Skills class I was part of circa 1997 and had us mapping Ōtahuhu/ Mt Richmond in groups of two, each group being allocated survey equipment and a small part of the mountain. It was my understanding at the time that this project was to be completed by graduate students over a five year time period and a plan made at the University of Auckland by combining all of the individual plans. I do not know if this project was ever completed. It is possible that the University has copies of both the earlier and later plans.

A number of reference articles are also mentioned ranging from published books to newspaper articles within the CHI. Some of these plus others were accessed from the Auckland Council Library.

Susan Bulmer reviewed information within the wider volcanic areas of Auckland, on Ōtahuhu/ Mt Richmond she noted (1994:34) that it "*is formed by a cluster of cones and craters, with a number of peaks. It was fortified with ditching at the southeastern corner and was terraced all over and down to its base on all sides. The entire site was defended by a natural moat, i.e. the swamp in the tuff explosion crater that enclosed the site."* Bulmer (*ibid*) recorded that "*a shell sample from an eroding midden has been dated to between AD 1580 and 1820*." No archaeological excavation took place to obtain the sample.

Cameron, Hayward and Murdoch (1997:226) describes Ōtahuhu/ Mt Richmond as being *"extensively modified with surface earthworks for occupation sites and defensive pa in pre-European times, and there are several very large kumara storage pits. Particularly impressive is*

the high, steep-sided defensive position at the eastern end of the complex. The mountain was of strategic importance as it commanded the main Waitemata-Manukau canoe portage."

Janet Davidson (Searle and Davidson 1973:14) describes Ōtahuhu/ Mt Richmond as *"a pleasant surprise for the archaeologist"* with *"….many large pits, and a fair number of terraces scattered over the uneven surface."* Davidson comments (ibid) that *"it is hard to imagine the whole of this complex as a single fortified site; small parts of it, however, lend themselves very well to fortification, and it is possible to see the small steep flat-topped knoll in the centre top ….as a separate little site. The area of major terraces on the south side has now been quarried away, and the immediate environs of the water tower are not attractive* (this is referring to the terraces once present on the private property on the Great South Road/Portage Road corner). *The rest of the Domain, however, is of considerable interest."* Davidson is referring to the fact that it is probable that only parts of the Pa were fortified, the rest being undefended housing and crop storage outside the defences. Whilst speculative Davidson is most likely correct, whether it was as little an area as she implies was within the defences, however, is less likely in my opinion.

5. SITE INSPECTIONS

Various site inspections were undertaken by myself, both in the company of staff of the Tūpuna Maunga Authority, other specialists (including those in creating the planting plans) and by myself over June to October 2018. The briefing given was for Treescape to be able to remove trees without damaging the archaeology of the mountain. Other areas were inspected to assess whether there was archaeological evidence present and if they were suitable for conservation plantings as well as in places providing habitat for endangered lizard species.

During these inspections areas were identified where substantial past earthworks and or quarrying will have destroyed any archaeological evidence and where archaeological evidence was present (Some of these quarries however were identified as likely to be pre-1900 and therefore were to be treated the same way as other archaeological features). This information was discussed with Treescape staff and others, some by subsequent phone calls and brief meetings, but mostly during onsite inspections.

Between these site inspections and examination of historic plans and aerial photographs the following plan and advice was given. These areas are illustrated on Figure 11. Numbers in the following paragraphs refer to the locations on Figure 11.

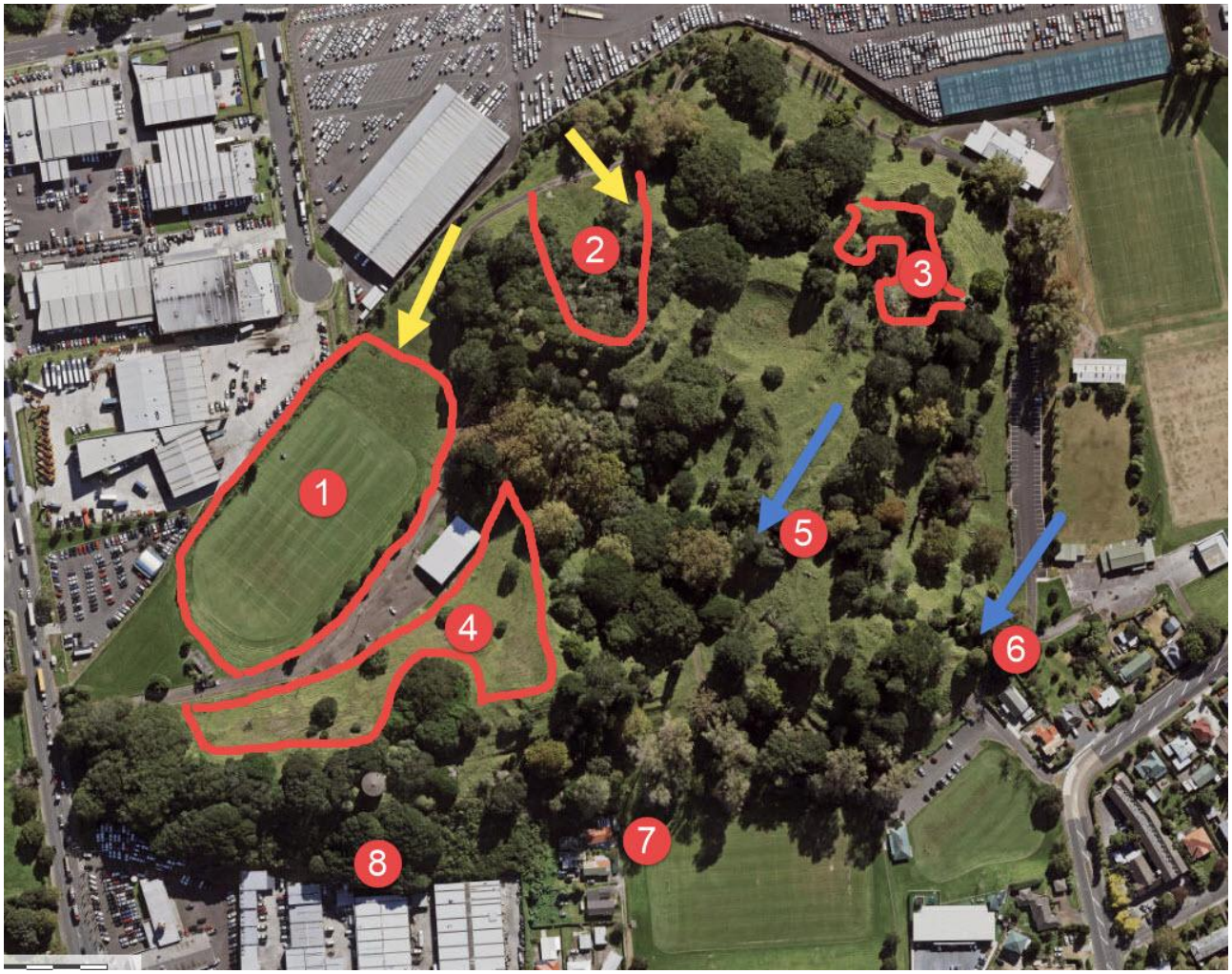

Figure 11. 2017 aerial photograph from the Auckland Council GIS with areas marked up. The markings are to be treated as indicative only and should be site checked in each instance.

1. The lower field has been quarried out - this includes the area in unkept grass, as well as the slopes immediately above it, the flat areas at either end however appear to be more or less natural and should be treated as an area to not plant on. The available area is circled in red, the yellow arrow is to indicate that I could not be certain from looking at the aerial alone where exactly the higher level flat is, please treat the red line at this end as indicative only.

2. The other large quarry previously discussed shows up in pre-1900 plans, however as a somewhat smaller size and it appears to either still being quarried or at least recently quarried in the 1940

aerial, therefore it can be assumed that any pre-1900 quarrying was destroyed by 20th century quarrying. Therefore this area can be used for planting, processing, crane parking etc if required.

3. I could not find this quarry on any of the plans, however the aerial from 1940 shows it clearly, at that point of time it is not being used and there are some trees growing within it. When I compare them in size to the trees found on the Maunga today they appear to be relatively small, suggesting that they may have been planted or self seeded post 1900, The track that leads to the quarry also appears to be very clear, suggesting it may not have been many years since it was last used. I believe that this quarry therefore was used in the 20th century and could be used for plantings etc.

4. These slopes show up as having been largely quarried in the 1940 aerial and in the 1959 aerial earthworks are in progress that is clearly creating the slope visible today. This large slope can be used for planting, possibly for dropping some large trees directly onto if there are any in a position that makes sense or for whatever other purpose. The red lines are indicative only - but close to accurate.

5. This small quarry (approximate location arrowed in blue) is visible on the 1940 aerial and clearly hasn't been used for sometime. Given its size and the visual appearance of it in the photograph we should err on the side of caution and assume it is pre-1900 which may trigger the need for an authority to plant in it. I recommend that this quarry isn't used as a planting site.

6. This quarry shows up on a pre-1900 plan, it appears to be roughly the same size and shape as what is found now (though the quality of the copy of the plan is very poor and I cannot be certain without viewing the original in National Archives). It also doesn't appear to be in recent use in the 1940 aerial. I therefore recommend that this quarry is not used for planting etc as it may trigger the need for an archaeological Authority.

7. Examination of the 1940 aerial photograph clearly shows that more of the Maunga was once present there and it has clearly now been quarried away. It should be considered that there are no archaeological constraints on using the adjoining playing field grounds.

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8. This one is for long term planning and reflects some questions asked during site visits, it is not part of the project addressed in this report. The area over the fenceline that is council property was once part of the Maunga that lead down to what appears to be another crater, the Maunga has now been quarried away completely where the car dealership, factories and other buildings are. There

were once numerous archaeological features present. Without having gone over the fenceline and walked that slope there are two possible results, one being that like area 4 quarrying has occurred and the slopes rehabilitated, or that quarrying has never occurred and archaeological evidence is present amongst the privet and other vegetation present there.

6. TREE REMOVALS

The following is based on the report by Treescape Ltd (2018) and amended by Arborlab Consultancy Services (2021) and their proposed tree removal methodologies, their proposed worksites and access to Ōtahuhu/ Mt Richmond. Conditions vary across the mountain as a consequence this section is divided into the areas as proposed by Arborlab (Figure 12).

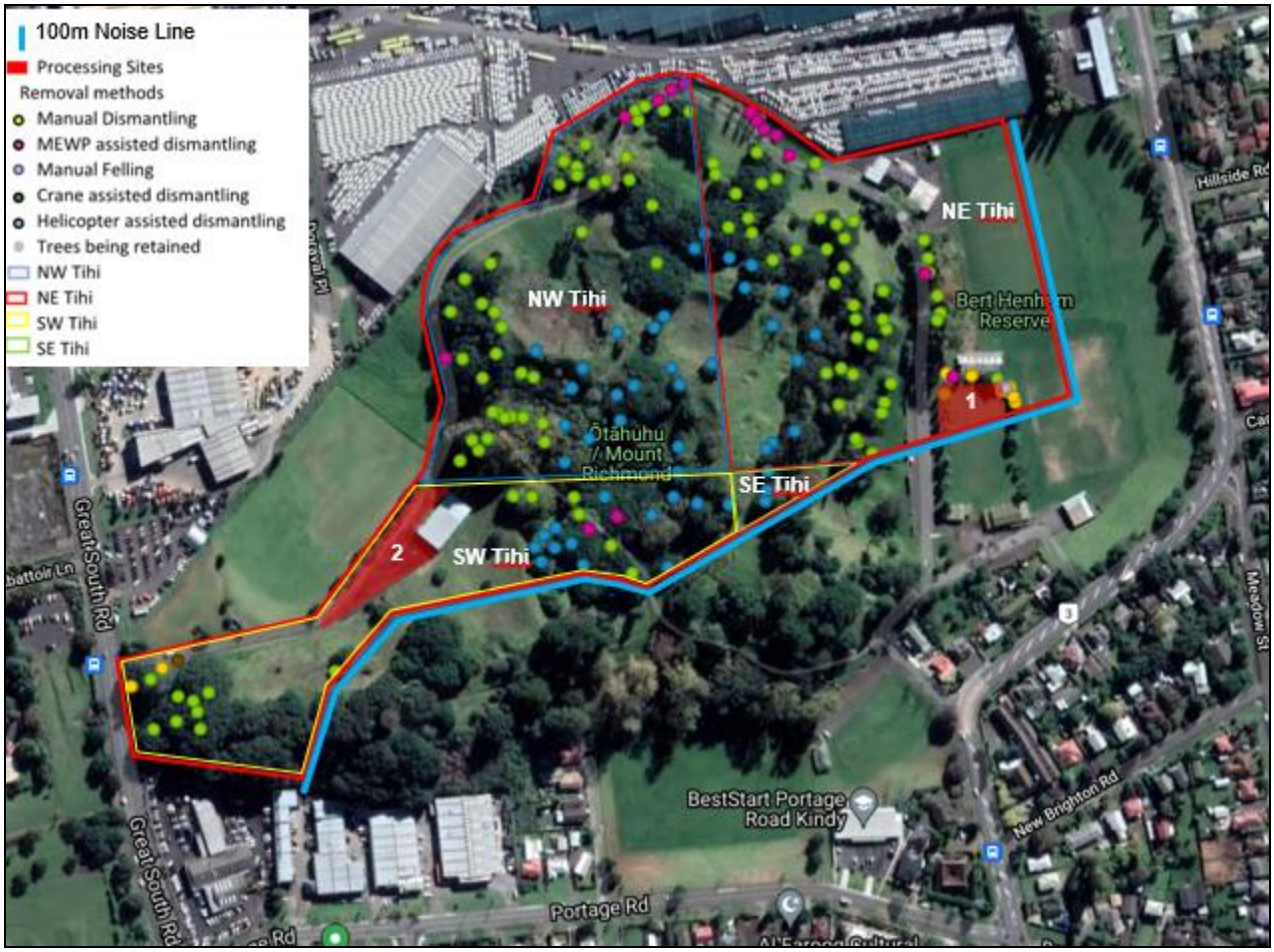

Figure 12. Tree Removal and Processing site locations as per Treescape Report

6.1 – SW Tihi

The majority of the trees to be removed exist in an area of dense archaeological significance, the majority are proposed to be removed by Crane assisted dismantling or Helicopter assisted dismantling. A few are to be removed by manual dismantling and some by MEWP assisted dismantling. All of these methods are appropriate provided that the precautions listed within the Treescape Report (2021:10) are used;

Crash mats will be used to minimise ground disturbance impact when lowering tree sections on to sensitive ground where it is determined that a part of the tree could cause damage.

Used in conjunction with rigging techniques that offer maximum control may be a solution that meet acceptable risk thresholds.

Given the dense distribution of archaeological features on Ōtahuhu/ Mt Richmond the use of crash mats should be compulsory for all tree sections that are to be lowered onto soft surfaces or areas outside the historic quarries. Some of the manual dismantled trees will have to be carried or dragged to chippers, where this is to occur protection for surfaces should be laid down between the tree to the chipper along the length of the route to prevent accidental gouging or other damage.

Provided these minor precautions are put in place there should be no adverse effect to the archaeology. Long term positive effects include stopping living root systems causing subsurface damage and impact damage from limbs and trunks of some of the older trees reaching the end of their natural life that may gradually fall onto the archaeological features.

6.2– NW Tihi

The majority of the trees to be removed exist in an area of dense archaeological significance, the majority are proposed to be removed by Crane assisted dismantling or Helicopter assisted dismantling. A few are to be removed by MEWP assisted dismantling. All of these methods are appropriate provided that the precautions listed within the Treescape Report (2021:10) are used;

Crash mats will be used to minimise ground disturbance impact when lowering tree sections on to sensitive ground where it is determined that a part of the tree could cause damage.

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Provided these minor precautions are put in place there should be no adverse effect to the archaeology. Long term positive effects include stopping living root systems causing subsurface damage and impact damage from limbs and trunks of some of the older trees reaching the end of their natural life that may gradually fall onto the archaeological features.

6.3– NE Tihi

Again the majority of the trees to be removed exist in an area of dense archaeological significance, with the majority proposed to be removed by Crane assisted dismantling or Helicopter Assisted dismantling. A few are to be removed by manual dismantling and some by MEWP assisted dismantling. Those adjacent to the playing field of Bert Henham Park are in an area where there appears to be no archaeological evidence, the field itself and the banks that immediately adjoin it have been earthworked and disturbed in the past. All of these methods are appropriate provided that the precautions listed within the Treescape Report (2021:10) are used modified as per below;

Crash mats will be used to minimise ground disturbance impact when lowering tree sections on to sensitive ground where it is determined that a part of the tree could cause damage except where trees are adjacent to Bert Henham Park playing fields.

Used in conjunction with rigging techniques that offer maximum control may be a solution that meet acceptable risk thresholds.

Given the dense distribution of archaeological features on Ōtahuhu/ Mt Richmond the use of crash mats should be compulsory for all tree sections that are to be lowered except where trees are adjacent to Bert Henham Park playing fields. Any of the manually dismantled trees will have to be

carried or dragged to chippers, where this is to occur (except when adjacent to Bert Henham Park playing fields) protection for surfaces should be laid down between the tree to the chipper along the length of the route to prevent accidental gouging or other unintentional damage.

Provided these minor precautions are put in place there should be no affect to the archaeology, other than long term positive effects of stopping living root systems causing subsurface damage and impact damage from limbs and trunks of some of the older trees reaching the end of their natural life that may gradually fall onto the archaeological features.

6.4– SE Tihi

All of the tress within the SE Tihi area exist in an area of dense archaeological significance, with all proposed to be removed by Helicopter Assisted dismantling. This methods is appropriate for removal of trees in this area.

There should be no affect to the archaeology, other than long term positive effects of stopping living root systems causing subsurface damage and impact damage from limbs and trunks of some of the older trees reaching the end of their natural life that may gradually fall onto the archaeological features.

6.5 – Processing Areas

All of the proposed Processing Areas are in locations where past works have occurred, processing site 2 is in an area of past intensive quarrying, where as site 1 is where the original swamp has been drained and built up and was once bowling greens. No archaeological evidence will have survived the works that have occurred at these locations. There are no archaeological restrictions for the use of these areas.

6.6 - General

Observations I made during dismantling of trees at Maungarei/Mount Wellington were that those with dead limbs often broke uncontrollably during dismantling with significantly large sections

occasionally hitting the ground at velocity. Therefore based upon this observation all trees with dead limbs should have crash mats or other forms of surface protection laid around them to prevent damage to archaeological features unless the trees are situated where no archaeology is likely to exist.

7. CONSERVATION PLANTINGS

The following sections are based on the report by Te Ngahere (2018) and their proposed methods and locations for conservation plantings, including the desire to provide habitat for native skinks. Conditions vary across the locations, as a consequence this section is divided into the areas as proposed by Te Ngahere (Figure 13).

Figure 13. Proposed planting locations at Ōtahuhu/ Mt Richmond from Te Ngahere (2018)

7.1 Large Slope Planting Area

This area covers the slope from the tihi down to the north west and corresponds to the area identified as 4 in Figure 11, an area that has been totally quarried away and artificial slopes have been made to replace the original volcanic structure. This area has been completely reshaped by past quarry activities and contains no archaeological evidence. The only archaeological concerns are creating an exact definition/boundary of the artificial slope boundary and ensuring that plants with larger root systems are not planted near archaeological evidence so that;

a) The individual plants don't damage any archaeological evidence; and
b) There is less likelihood over time of species that are not suitable for planting on archaeological sites to self-seed.

It is therefore recommended that only species that are identified within Jones (2007) as being suitable for archaeological sites are planted within 5m of intact archaeological evidence or natural unmodified slopes. Any large trees or species with larger root systems should be kept 10m from those edges.

The species list (Te Ngahere 2018) proposed for this area has a number of species that Jones (2007) considers suitable for archaeological sites and Te Ngahere have a list that is almost exclusively from Jones (ibid) in the crucial mid to upper range. Another objective of this project is to preserve sight lines of the archaeological features. Te Ngahere have constructed a planting plan that should be able to achieve this.

7.2 Field Planting Area

This area has been quarried in the past, then landscaped into flat playing fields. No archaeological evidence will have survived this process, therefore there are no archaeological concerns. It is however difficult to be certain on the eastern and western extents of the past quarrying. Therefore it is recommended that the project archaeologist is involved in setting out the eastern and western limits and that species considered by Jones (2007) to be suitable for planting on archaeological sites are used in within 5m of the eastern and western edges. Again Te Ngahere (2018) have a number of species in the planting list that are suitable to be planted in these edge areas. There are no concerns for the northern and southern edges, both of which have been significantly modified.

7.3 Olive Quarry Planting Area

This area is within an old quarry near the north western side of the reserve and corresponds to area 2 of Figure 11. Here a large quarry has been dug into the side of the maunga and taken a significant chunk out of it. As previously discussed this quarry was originally operated in the 1800s but continued to be used through to the 20th Century, thus obliterating any 19th century evidence as well as any evidence relating to the prior Maori occupation. All original ground surfaces within the edges of the quarry have been removed, and the whole area including some of the terrace like quarry benches should be considered to be non-archaeological or natural. The proposed plants and methodologies will not have an effect upon the archaeology provided that no planting occurs outside the former quarry confines. To ensure that this does not occur the project archaeologist should set the limits that the plantings are to occur within.

7.4 Small Quarries Planting Area

This area is an old quarry, thought to be of post-1900 in origin at the eastern side of the maunga, it corresponds to area 3 of Figure 11. Unlike the other larger quarry areas this quarry has been driven in from the side of the maunga and has retained a large portion of the outside, including archaeological features. In fact this quarry is more or less surrounded by parts of the maunga that have been modified by the Maori occupation of Ōtahuhu. Te Ngahere (2018) have recommended a planting list that is largely made up of smaller species of plant, almost all of which are recognized by Jones (2007) as being suitable for archaeological sites. There are no concerns with this planting list, the only archaeological recommendation for this area is that the project archaeologist should be involved with establishing the boundary definition of this area.

8. ASSESSMENT OF HISTORIC HERITAGE

8.1 Auckland Unitary Plan

Ōtahuhu/ Mt Richmond is scheduled as an Historic Heritage Place in the Auckland Unitary Plan (**AUP**), item #1579: Mount Richmond/Otahuhu R11/13– Category A*). The site is listed as having Additional Rules for Archaeological Sites or Features and as being a Place of Maori interest or Significance.

The Council uses a range of heritage to identify and evaluate historic heritage for scheduling:

A. Historical
B. Social
C. Mana Whenua
D. Knowledge
E. Technology
F. Physical attributes
G. Aesthetic
H. Context

Ōtahuhu/ Mt Richmond is scheduled in the AUP for the following Heritage Values;

A. Historical: the place reflects important or representative aspects of national, regional or local history, or is associated with an important event, person, group of people, or with an idea or early period of settlement within New Zealand, the region or locality;
D. Knowledge: the place has potential to provide knowledge through archaeological or other scientific or scholarly study, or to contribute to an understanding of the cultural or natural history of New Zealand, the region, or locality;
G. Aesthetic: the place is notable or distinctive for its aesthetic, visual, or landmark qualities.

With regards to the above values, the historical values will not be affected by this process. The aesthetic values are contained within Sally Peake's report.

While archaeological study would be able to establish greater knowledge about the place, its location and the wider settlement of the Ōtahuhu area, current technology would require largely invasive methods to do this.

Ōtahuhu/ Mt Richmond is prominent in the landscape in which it sits. The location dominates what is recognised as the main portage route between the Manukau and Waitemata harbours, a route that is important traditionally to Iwi from both within and outside the wider district. Within the environs of the immediate area the Tūpuna Maunga dominates the skyline and is visible from many viewpoints from the Manukau Harbour and between other Tūpuna Maunga. Historically the many terraces, pits and archaeological earthworks of the mountain would have been a visually dominant feature, especially with the palisades once present.

Rules for Archaeological Sites or Features under the AUP have additional controls and require assessment of the activity under the rules listed in Table D17.4.1. and Table D17.4.2. As noted earlier this site has considerable archaeological value and the focus of the assessment is how the works impact on these values. As it relates to the proposal, Conservation Planting (A23) and Tree Removal (A26) are discretionary activities. Non-invasive archaeological investigations are a permitted activity, where as other investigations are Restricted Discretionary activities.

Historic Heritage Objectives and Policies

Part D17 of the Unitary Plan sets the Objectives and rules of the Historic Heritage Overlay.

Objectives are contained at D17.2, and include:

(1) The protection, maintenance, restoration and conservation of scheduled historic heritage places is supported and enabled.

(2) Scheduled historic heritage places are protected from inappropriate subdivision, use and development, including inappropriate modification, relocation, demolition or destruction.

(3) Appropriate subdivision, use and development, including adaptation of scheduled historic heritage places, is enabled.

The proposed works are considered to be in accordance with the above objectives for historic heritage as they have been designed to enhance the values of Ōtahuhu/ Mt Richmond by removing trees that are damaging the maunga without causing any physical impact, except in locations where earlier earthworks have already modified the form and archaeological features. Visual aspects of the archaeological features and the proposed plantings have been designed to remedy erosion issues currently evident on the Mountain assisting with protection and conservation.

8.2 Assessment of Effects on Archaeological Features

Tree Removal Works

The methodology for removal of trees from this Tūpuna Maunga has been the avoidance of impacts to surface features as well as sub-surface material therefore minimising the potential for any

archaeological material, whether identified or unrecorded to be impacted, and protecting the fabric of archaeological features from damage.

Removal of exotic primarily self-seeded trees will also benefit the visual aspects of the maunga allowing for the visible archaeological features to be more readily identifiable and viewed. This is particularly the case where older failing trees are present as their removal will enhance the shape of earthworked features that are hidden from the public viewshed.

Further, aside from the actual removal operations, the removal of exotic trees from an archaeological perspective is considered to have positive effects for the long-term preservation of Ōtahuhu/ Mt Richmond. As the rootplate of trees has the potential to disturb and destroy archaeology as they mature, removing trees can be beneficial to preserving *in situ* archaeological features. Secondly, as trees age, limbs can become weak and fail during periods of high winds or as a result of storm damage. Such events can also tear the rootplate from the ground damaging and exposing archaeology. Controlled removal is therefore favourable to uncontrollable and natural events. As some of the trees to be removed are getting towards the end of their natural life, they are even more susceptible to damage from natural events and the potential to impact on archaeology is higher.

Revegetation Works

An outline of the proposed revegetation works is contained at 7.1 – 7.4 above with proposed planting developed to avoid known areas of archaeology and all are contained within areas where significant earthworks have occurred in the past. There will be no archaeological effects provided that the project archaeologist defines the edges of the areas of past earthworks, which are not always obvious.

9. CONCLUSIONS

Methods have been developed to remove trees from Ōtahuhu/ Mt Richmond (Treescape 2021) while avoiding and minimising impact on the archaeological features or unknown subsurface evidence.

Positive effects will arise from the visual enhancement of archaeological features as large exotic trees tend to conceal and confuse opportunities for visual appreciation of the landscape. This is particularly so for the pa and following the removals this element will be visible as the prominent feature of the maunga. Also from the pa the contextual landscape that make up its positioning will be better visible providing opportunities for its relationship to the land and the Manukau Harbour to be better appreciated.

The conservation plantings have been designed to be placed where the mountain has already been modified and archaeological evidence will not exist. Subject to the proposed methodology the works will enhance and protect the maunga and the visual archaeological aspects.

This Heritage Assessment has focused on the archaeological values of this place. Ōtahuhu/ Mt Richmond has also been listed for its Mana Whenua values, for which I am not qualified to comment upon, there may be traditional or cultural concerns that may affect the proposal or the conclusions of this report that I am unaware of.

10. RECOMMENDATIONS

I endorse the Tree Removal Plans (Treescape 2021) and Planting Plans (Te Ngahere 2018) subject to the following additional recommendations;

10.1 Tree Removals

a) All tree felling works and use of non-tarsealed access tracks or routes across the Reserve should only occur when the earth is dry to reduce the risk of pugging of the ground surface from repeated vehicle movements over soft ground, unless it is within the identified processing areas which have no archaeological significance.

b) Given the dense distribution of archaeological features on Ōtahuhu/ Mt Richmond the use of crash mats should be compulsory for all tree sections that are to be lowered except in the following location:

- where trees are adjacent to Bert Henham Park playing fields

c) Any of the manual dismantled trees will have to be carried or dragged to chippers, where this is to occur (except when adjacent to Bert Henham Park playing fields or across hard

surfaces) protection for surfaces should be laid down between the tree to the chipper along the length of the route to prevent accidental gouging or other unintentional damage.

d) All trees should be inspected for dead limbs prior to felling. If a tree is found to have dead limbs crash mats or other protective measures applied to the surfaces within the immediate area beneath the tree.

10.2 Conservation Planting

Large Slope Area

a) Within the Large Slope Area only species that are defined as suitable for planting on archaeological sites, as per the Department of Conservation (Jones 2007) publication or any updated list that is subsequently released by the Department of Conservation, should be planted within 5m of archaeological features or apparently unmodified ground.

b) For the Large Slope Area any large trees or species with larger root systems should not be planted within 10m of archaeological features or apparently unmodified ground.

c) The project archaeologist should be on site for the set out for the Large Slope Area to define the limits of the adjacent archaeological evidence to facilitate recommendations a) and b) above.

Field Area

d) Within the Field Area only species that are defined as suitable for planting on archaeological sites, as per the Department of Conservation (Jones 2007) publication or any updated list that is subsequently released by the Department of Conservation, should be planted within 5m of archaeological features or apparently unmodified ground at the eastern and western ends.

e) The project archaeologist should be on site for the set out for the Field Area to define the limits of the adjacent archaeological evidence to facilitate recommendation d) above.

Olive Quarry Area

f) The project archaeologist should be on site for the set out for the Olive Quarry Area to define the limits of the adjacent archaeological evidence, and therefore the limits of the area to be planted.

Small Quarry Area

g) The project archaeologist should be on site for the set out the Small Quarries Area and define the limits of the adjacent archaeological evidence, and therefore the limits of the area to be planted.

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