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TUKITUKI WATER SECURITY LIMITED

**FTAA LAND EXCHANGE
APPLICATION**

Response to Draft Department of
Conservation Land Exchange Report

5 October 2026

TABLE OF CONTENTS

1.	Introduction	1
1.1	Supporting TWSL Technical Reports	1
1.2	Response Structure	2
1.3	Agreement to Abide by Code of Conduct	2
2.	TWSL Response to Conservation Values Assessment	2
2.1	Scenarios Assessed	2
2.2	Conservation Values	4
2.3	Biodiversity (Terrestrial)	5
2.4	Freshwater Values	8
2.5	Culture and Heritage Values	13
2.6	Recreational Values	17
2.7	Landscape Character Values	19
2.8	Conclusion on Conservation Values	22
3.	TWSL Response to Other Statutory Criteria Assessed	24
3.1	Financial Implications for the Crown	24
3.2	Consequences of the Land Exchange	24
3.3	Legal and Financial Liabilities and Health & Safety Risks	25
3.4	Statements of General Policy	25
3.5	Strategies and Plans	27
4.	TWSL Response to Conditions	29
5.	Section 34(4) Matters and Treaty of Waitangi Considerations	30
6.	Comments	30
7.	TWSL Comments on Draft Report Summary of Conclusions	31
8.	Concluding Comments	33

LIST OF FIGURES

Figure 1:	Proposed new track (in orange) to connect public access from the southern side of the reservoir to Mākaroro Road and Yeomans Track beyond to the north	15
Figure 2:	Wider Context Map of proposed new track connections to the public access easement and Yeomans Track	16

LIST OF APPENDICES

- Appendix 1:** Statement of Qualifications and Experience of Author
- Appendix 2:** *'Smedley Land Exchange DOC Evaluation'*, SLR Consulting
- Appendix 3:** *'Tukituki Water Security Project: Migratory longfin eel downstream trap and transfer at Waimea Community Dam, Tasman District'*, RMA Ecology
- Appendix 4:** *'Tukituki: Smedley Exchange Block – South Stream Supplementary Memo'*, RMA Ecology
- Appendix 5:** *'DOC Land Parcels Measurements'*, The Property Group
- Appendix 6:** *'Tukituki Water Security Project: Archaeological Assessment'*, Heritage Services Hawke's Bay Limited
- Appendix 7:** *'Proposed Tukituki Water Security Project – Department of Conservation Land Exchange Landscape Values Assessment'*, Wayfinder Landscape Planning & Strategy
- Appendix 8:** TWSL Proposed Amended Condition Set

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1. INTRODUCTION

This report provides comment on behalf of the Land Exchange Applicant,¹ Tukituki Water Security Limited (“**TWSL**”) to the Draft Director-General of Conservation Land Exchange Report (“**Draft Report**”), pursuant to section 35(5)(a) of the Fast-track Approvals Act 2024 (“**FTAA**”).

The Draft Report was received by TWSL on Monday 14 September 2026 with advice that comments made on that report must be received by 5 October 2026.² Accompanying that report were the following separate appendix documents comprising of technical advice to the Department of Conservation (“**DOC**”):

- > Appendix 4A – Biodiversity and Freshwater – Wildlands Limited
- > Appendix 4B – Heritage – Richard Nester, DOC
- > Appendix 4C – Recreation – Michael Harbrow, DOC
- > Appendix 4D – Landscape character – Jeremy Head Landscape Architect
- > Appendix 4Da – Landscape character attachments, Jeremy Head Landscape Architect

1.1 SUPPORTING TWSL TECHNICAL REPORTS

In preparing this response a full review of the Draft Report and accompanying technical advice has been completed by the TWSL project team. This report appends and relies on the advice of the following technical reports prepared on behalf of TWSL for this response:

- > ‘*Smedley Land Exchange DOC Evaluation*’, SLR Consulting, 29 September 2026 (Appendix 2).
- > ‘*Tukituki Water Security Project: Migratory longfin eel downstream trap and transfer at Waimea Community Dam, Tasman District*’, RMA Ecology, 16 September 2026 (Appendix 3).
- > ‘*Tukituki: Smedley Exchange Block – South Stream Supplementary Memo*’, RMA Ecology, 23 September 2026 (Appendix 4).
- > ‘*DOC Land Parcels Measurements*’, The Property Group, September 2026 (Appendix 5).
- > ‘*Tukituki Water Security Project: Archaeological Assessment*’, Heritage Services Hawke’s Bay Limited, August 2026 (Appendix 6).

¹ Application reference FTAA-2603-L003.

² E-mail from Amy Robinson, Fast-track Project Lead, Department of Conservation.

- > ‘Proposed Tukituki Water Security Project – Department of Conservation Land Exchange Landscape Values Assessment’, Wayfinder Landscape Planning & Strategy, 5 October 2026 (Appendix 7).

1.2 RESPONSE STRUCTURE

This response is structured in the same order of issues as they are addressed in the Draft Report.

1.3 AGREEMENT TO ABIDE BY CODE OF CONDUCT

The author of this report, Philip McKay, with the qualifications and experience stated in Appendix 1, has prepared this report on the basis that it is prepared in the same way as it would be for expert evidence in Environment Court proceedings.

I (Philip McKay), therefore confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and confirm that I have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise, except where I have indicated that I am relying on others’ opinions. I have not omitted material facts known to me that might alter or detract from my evidence.

2. TWSL RESPONSE TO CONSERVATION VALUES ASSESSMENT

2.1 SCENARIOS ASSESSED

The Draft Report sets out the following two scenarios under which the TWSL Application is assessed, these being:³

- > Scenario One: which considers the value of the land as it is now; and
- > Scenario Two: which considers the value of the land, should the land exchange go ahead (and assumes that means the reservoir and irrigation project goes ahead). This scenario includes proposed improvements and relevant mitigation or offsetting that relates to the land that would be received by DOC, and any positive or negative impacts of inundation, where they relate to that land.

Scenario One is considered irrelevant as that is not the basis on which the Land Exchange is being applied for. Rather, it has been made clear by TWSL that the land exchange is being applied for on the basis of the water storage and irrigation project proceeding and the proposed improvements and mitigations being undertaken. In the event that the

³ See paragraph 11 of Draft Report.

substantive FTAA application is not successful, or a decision is made not to implement the project, then the land exchange will not proceed. Therefore, there is no basis under which Scenario One could occur.

Paragraph 37 of the Draft Report includes the statement:

“Regarding Scenario Two, this report and the expert reports that support it, consider this potential future because, assuming the land is exchanged, it will be only for the purpose of an irrigation scheme with resulting reservoir (inundation).”

TWSL is concerned with the reference to the land exchange ‘only being for the purpose of an irrigation scheme’. To characterise the project as an irrigation scheme is somewhat superficial and unfairly discounts the significant environmental enhancement components of the project. It would be more correct to state that the land exchange is for the purpose of a multi-faceted listed project which has been included in Schedule 2 of the FTAA due to its regional and national economic benefits resulting from the storage and use of high flow water. Such benefits have been subsequently confirmed by the report prepared in support of the substantive application by NZIER, who conclude:⁴

“Across all options, the conclusion is that the TWSP project should produce positive outcomes for the Hawke’s Bay economy, and the benefits are expected to outweigh the costs. The project would generate positive regional economic impacts even under the most restrictive assumptions of no land use change, higher-than expected construction costs, and a high discount rate.”

In addition to irrigation supply the TWSP includes up to 20Mm³ of water for environmental enhancement, including 4Mm³ for flushing flows to remove periphyton that is an existing adverse effect of low summer flows in the Tukituki catchment and augmentation of higher minimum summer flows. The project’s proposed water supply to the new ‘Zone N’ will additionally provide for environmental enhancement of Lake Whātuma and the Mangatarata Stream. In addition to irrigation, water from the TWSP will be available for community use (potentially drinking water for municipal and marae use).

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

⁴ ‘Economic contribution of TWSP – Spatial and CGE modelling of new water storage’, NZIER, May 2026 (page 31).

1. Remove reference to Scenario One and to confirm that Scenario Two is that on which the Land Exchange Application is based and assessed for the purposes of the land exchange proposal.
2. Amend paragraph 37 to more accurately describe the purpose of the proposed reservoir and land exchange.

2.2 CONSERVATION VALUES

The Draft Report sets out the statutory criteria for the consideration of the TWSL Application in section 5.⁵ Paragraph 33 sets out what conservation values are comprised of for the purposes of the Draft Report. Conservation values are not defined in the FTAA.

The TWSL Application was prepared having regard to the guidelines provided by Department of Conservation representatives in pre-lodgement consultation. Those guidelines are headed '*External Guidance for conservation values assessments for land exchanges under Fast-track Approvals Act 2024 – Current 18 August 2025*' (the "DOC Guidelines") and were appended as Appendix 7 to the TWSL Application. The conservation values listed in these guidelines are:

- > Biodiversity values
- > Freshwater values
- > Recreational values
- > Cultural and heritage values (including natural, scenic, archaeological, historical, biological, geological, scientific, educational, or community values that contribute to these).

Those values do not separately list 'landscape character', which is however listed in paragraph 33 of the Draft Report as one of the conservation values on which the Draft Report has been informed, including a report by a relevant expert. TWSL did not provide an assessment of landscape character values in its land exchange application, as the application was based on the criteria set out in the DOC guidelines provided in pre-lodgement consultation.

TWSL has however now commissioned landscape architectural expertise to respond to the landscape character aspects of the Draft Report and associated landscape character expert report, as is discussed further below under the corresponding heading (section 2.7).

⁵ Paragraphs 29 – 35.

Paragraphs 37 & 38 discuss the weighting of conservation values and states that the Draft Report assumes that each subject field has equal weighting. The TWSL position is that given the nature of both the give and get land involved, in having significant indigenous vegetation cover, that logically terrestrial biodiversity values should be afforded greater weight than the other conservation values assessed. TWSL accept that the weighting of the conservation values to be applied is up to the panel to decide, but does not consider that it is correct for each subject field to receive equal weighting.

2.3 BIODIVERSITY (TERRESTRIAL)

In commenting on the Biodiversity (Terrestrial) section of the Draft Report I rely on the Technical Memorandum prepared by Hamish Dean of SLR Consulting for TWSL, titled ‘*Smedley Land Exchange DOC Evaluation*’ and dated 29 September 2026 (“the SLR Response Memo”) (attached as **Appendix 2**). Mr Dean notes on page 1:

The review and assessment were largely fair and balanced, and I agree with their overall assessment that under Scenario 2 “it is likely that the overall conservation values of Crown owned land will be enhanced”.

SLR’s work in 2025 built on the previous work of both Kessels Ecology and the assessment of DOC experts (La Cock, Rogers, Gerbeaux, Scrimgeour). Consistent with his own findings, Mr Dean notes DOC concluded in their 2015 assessment that the proposed land exchange “*would enhance conservation values of the land managed by the Department.*”

The SLR Response Memo comments on various aspects of the Wildlands Consultants Ltd report to DOC on terrestrial biodiversity attached to the Draft Report as Appendix 4A (“Wildlands Report”). The focus of this TWSL Response is on the higher-level DOC Draft Report, while drawing on the technical evidence provided by the SLR Response Memo.

Existing Area of Pasture and Rank Grass on Smedley Exchange Block

Paragraph 49 of the Draft Report raises the concern identified by Wildlands, with the approximately 45ha pasture component of the DOC get land (or Smedley Exchange Block land (“SEB”)) being of negligible ecological value and creating an ongoing management liability.

In response the SLR Response Memo proposes an adaptive management approach to the revegetation of this land and considers that, given the prevalence of indigenous regeneration on the SEB land, that the pasture land can be managed and converted to indigenous vegetation cover. TWSL now adopts the approach proposed in the SLR Response Memo as part of its land exchange application. The SLR Response Memo states:

Direct planting may be required in some areas, but the most likely scenario is that the succession to indigenous scrub and, eventually, forest can be managed solely through selective weed control. As vegetation succession begins, and more information becomes available on the nature of that succession, decisions on appropriate management responses can be made. Proposed conditions 25 and 26 allow for extended timeframes, provided that 80% indigenous cover is met.

On the basis of the SLR Response Memo advice, with the proposed adaptive management approach within the framework of the Ecological Restoration Plan conditions⁶ there will be medium and long term ecological value in this 45ha area as indigenous succession planting establishes in conjunction with ongoing weed control, such that there will be little management liability by the time an 80% cover of woody indigenous vegetation is achieved. Accordingly, it is considered that the concerns regarding the 45ha of current pasture and rank grass on the SEB, will be appropriately addressed through the conditions proposed in Appendix 8 of the Draft Report. The landscape contribution of this area of land will be assessed later in this document.

Misrepresentation of Positive Terrestrial Biodiversity Values

Paragraph 54 of the Draft Report states that *“Wildlands consider that for most fauna species, the habitat values of the DOC-Get land are at least equivalent to the DOC-Give land, and the extent of available habitat is larger at the DOC-Get land than the DOC land.”* This sentence understates the positive findings of the Wildlands Report of there being ‘greater’ diversity and extent of indigenous habitats on the SEB land.⁷ In this regard it is noted that the summary assessment in Table 4 of the Draft Report shows that for the ‘Representativeness’ criteria, the Wildlands Report assigns higher ratings for the SEB (M/H or H) than that off the SLR Report included in the TWSL Application (M) under Scenario 2.⁸ The conclusion in the paragraph 54 of the Draft Report therefore appears to be inconsistent with the Wildlands assessment that it relies on.

At paragraph 59 the Draft Report states *“Overall, the SLR (Applicant’s) assessment of biodiversity values is that the DOC-Get land (SEB) is of comparable value to the DOC-Give land.”* While that reference is correct that statement was made under Table 11 of the original SLR Report which provided an assessment of the comparative conservation values of the give and get land, based on current values without the proposed mitigation and improvement measures being applied to the SEB land (ie. effectively Scenario 1, rather than

⁶ DOC Draft Report Appendix 8 ‘Draft Conditions’, Conditions 24 – 31.

⁷ Wildlands Report (paragraph 59).

⁸ Noting that Scenario 2 is considered to be the only valid scenario for the proposed land exchange.

Scenario 2 which is what is being advanced by TWSL). In factoring in improvements to the SEB land such as stock fencing, the original SLR Report went on to state:⁹

“The exchange land also has a number of features not readily apparent. For example, it would form a buffer and corridor along the newly formed lake and create linkages of a range of representative vegetation types with the Gwavas Conservation Area to the east. If stock are excluded and pests controlled within the SEB land, it would provide higher quality habitat than currently exists for virtually all of the At Risk and Threatened indigenous fauna species within this locality, as well as for a range of more widespread species, such as bellbird, tui and whitehead.”

The SLR Response Memo also comments on the enhancement in conservation values of the SEB land with the agreed Ecological Restoration Plan conditions being applied to the 45ha of pasture as follows:¹⁰

“I note that the pasture areas did not contribute to the overall biodiversity value in the assessment, or the ratio of give to get, but with the proposed restoration works and the return to indigenous cover this additional 45 ha will represent a considerable increase in indigenous habitat when compared to the area being lost.”

Further to this the following clear conclusion in the comparative conservation values of the SEB land is provided in the SLR Response Memo:¹¹

“SLR’s assessment of biodiversity values clearly expressed that there were ‘unders and overs’ of biodiversity values in the proposed exchange, particularly regarding aquatic values. However, I maintain that assuming the proposed management actions and robust conditions are implemented, there will be an overall conservation benefit from the proposal.”

It is therefore requested that paragraph 59 be amended by providing the context for the SLR statement and then by providing an overall conclusion on terrestrial biodiversity values under the Wildlands quote, that the SEB land with the proposed conditions in place, will provide an overall enhancement of conservation values. Given that Scenario 1 is not an option or proposal for the proposed land exchange, and as noted in paragraph 59 of the Draft Report, Wildlands state:

“However, under Scenario 2, it is likely that the overall conservation values of Crown owned land will be enhanced.”

⁹ ‘Land Exchange Assessment – Tukituki Water Security – Fast Track’, SLR Consulting New Zealand (“the Original SLR Report”), 28 November 2025 (page 46).

¹⁰ SLR Response Memo (page 4).

¹¹ SLR Response Memo (page 5).

It is considered that the Draft Report's assessment of 'comparable' values is not a fair representation of Wildlands' clear conclusion of 'enhanced' conservation values for the proposed land exchange (Scenario 2).

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Paragraph 49 be amended to acknowledge that the applicant is proposing an adaptive management approach as part of an Ecological Restoration Plan within the bounds of the Draft Condition framework, which the applicant accepts. It is not now correct to say that no management actions are proposed by the applicant. Nor is it correct to say that the pasture has negligible ecological value and creating an ongoing management liability if TWSL is responsible for transitioning the pasture to indigenous vegetation (as per the conditions proposed by DOC and accepted by TWSL).
2. That paragraph 54 be amended to reflect the positive conclusions on the Wildlands Report on the fauna habitat values and extent of the SEB land.
3. That paragraph 59 of the Draft Report be amended to provide the context of the 'current values' assessment in the original SLR Report, and to acknowledge that based on the expert ecological assessments undertaken on behalf of both the applicant and DOC, that in regard to terrestrial biodiversity values, with the proposed conditions in place, the SEB land will provide an overall enhancement of conservation values as clearly identified by Wildlands.

2.4 FRESHWATER VALUES

In commenting on the Freshwater Values section of the Draft Report, I partly rely on the SLR Response Memo (attached as **Appendix 2**) which comments on wetland extent, stream length, and the South Stream. Additionally, I rely on the following three technical memoranda:

- > *'Tukituki Water Security Project: Migratory longfin eel downstream trap and transfer at Waimea Community Dam, Tasman District'*, RMA Ecology, 16 September 2026 ("Eel Trap & Transfer Memo") (attached as **Appendix 3**).
- > *'Tukituki: Smedley Exchange Block – South Stream Supplementary Memo'*, RMA Ecology, 23 September 2026 ("South Stream Memo") (attached as **Appendix 4**).
- > *'September 2026 Measurements'*, The Property Group, September 2026 (being measurement of the rivers and streams adjoining and within the DOC give land) (attached as **Appendix 5**).

Stream Length and Changes

Paragraph 61 of the Draft Report raises a discrepancy in the stream length of the DOC give land in the SLR Report. This matter has been addressed in the SLR Response Memo,¹² which defers to the stream length identified in the Wildlands Freshwater Assessment (Appendix 4A of Draft DOC Report).

The SLR Response Memo identifies that Dutch Creek meanders in and out of the DOC exchange land. In this regard the stream and river based freshwater values of the DOC give land are not constant and subject to changes in river and stream course after flood events, while the boundaries of the DOC land remain fixed with cadastral title lines. Freshwater values are inherently affected by any project involving a dam and reservoir and such effects were assessed in detail as part of the BOI consideration of the RWSS project resulting in the Schedule 6 Integrated Mitigation and Offset Approach (IMOA) conditions, including projects B, D, E and F, all having outcomes of freshwater quality enhancements to offset the freshwater effects of the reservoir. It is acknowledged that the land exchange application is required to be assessed independently to the RWSS consents, however that assessment should acknowledge that the nature of the rivers and streams associated with the DOC give land are subject to change, in terms of their extent within those land parcels.

Fish Barrier and Trap and Transfer Approach

Paragraphs 65, 66 and 76 of the Draft Report refer to the barrier of the dam and the low chance of successfully transferring mature migratory adult eels below the dam to breed. The RMA Ecology Eel Trap and Transfer Memo (see Appendix 3) addresses this point. The RMA Ecology Memo identifies that based on the experience of a downstream trap and transfer programme at the Waimea Community Dam, migrant longfin eels can be captured and transferred downstream of the dam.

The BOI accepted the May 2013 advice from the Cawthron Institute that:

“An upstream and downstream trap and transfer programme that will enable migratory native fish to access habitat upstream of the proposed dam, and enable mature longfin eels to move downstream and complete their life cycle.”

It is also noted that the TWSL substantive FTAA application is seeking a Complex Freshwater Fisheries approval for the dam barrier and that this issue of the proposed trap and transfer approach will be addressed in further detail through that application.

¹² Section 5.0 (pages 3 & 4).

Wetlands

Paragraph 69 of the Draft Report identifies that the Wildlands Report identifies an additional 300m² wetland to the north of the oxbow wetland on the DOC give land. The SLR Response Memo agrees with the Wildlands assessment.¹³

Paragraph 70 of the Draft Report discusses the Wildlands findings on the extent of wetlands in the SEB land and that some of the identified wetlands will likely revert to streams and disappear once stock are excluded and riparian planting matures. This point is remade in paragraph 79 of the Draft Report in referring to the Wildlands conclusion of a net reduction in wetland values on the DOC-Get land. The SLR Response Memo provides the following comment on this matter:¹⁴

"I agree that under forest cover these areas would not be maintained as wetlands – they have formed due to dense grasses trapping sediment and creating saturated soils. Under increased shading, the grasses are unlikely to persist. However, if wetlands need to be maintained within the site to satisfy the 'conservation enhancement' requirement, these sites could be planted in native sward-forming hydrophytes which would likely preserve the wetland habitat for many years. In addition, it is highly likely that additional wetlands will form as a result of the reservoir flooding the gully floors. While we agree with the Wildlands assessment that the wetlands within the DOC-get land are not as high value as those in the Dutch Creek valley, the proposed restoration activities will improve their value, and in association with the new wetlands that will likely form on the lake margins, will provide habitat for indigenous wetland flora and fauna and form part of a well-connected landscape of forest, scrub, streams and the new lake."

If it is considered important to retain additional wetlands and delay them reverting to streams, there would be the opportunity to add an additional clause to Ecological Restoration Plan condition 25 (Draft Report, Appendix 8 – Proposed Conditions) requiring the planting of hydrophytes suggested by SLR above. TWSL defer to DOC on this matter, but will be supportive of an additional condition clause to that effect if considered appropriate for the enhancement of the conservation values of the SEB land. The likelihood of additional wetlands forming on the lake margins of the SEB land identified by SLR is also noted in regard to the potentially enhanced wetland values of the SEB land overtime.

Paragraph 71 of the Draft Report states the Kahikatea treeland identified in the original SLR Report is overstated in its extent. The SLR Response Memo defers to the Wildlands assessment and accordingly adjusts the comparison table of wetlands in the DOC-give and

¹³ Section 4.0 (pages 2 & 3).

¹⁴ SLR Response Memo (page 3).

DOC-get (SEB) areas, as Table 1.¹⁵ With this adjustment in areas made, the SLR Response Memo confirms that there is still slightly more wetland extent in the SEB land, albeit that they are of lower ecological value.

While the proposed land exchange may not enhance wetlands, as Wildlands note on page 36, it is unclear or at least arguable that wetlands will diminish in extent, with the measures described above, and the likelihood of additional wetlands forming on the lake margins.

Accuracy of Freshwater Assessments

Paragraph 72 of the Draft Report states that the Wildlands raise issues of confidence, accuracy and the quality of assessments with the original SLR Report. In turn paragraph 37 of the Wildlands Assessment refers to a lack of evaluation of the North Stream and South Stream in the SLR Report. It is noted that the North Stream only bounds the SEB land for a stretch of approximately 60m and on that basis it was considered the assessment should focus on the other streams of greater extent within the SEB land. The SLR Response Memo comments on the South Stream,¹⁶ which has subsequently been assessed by RMA Ecology (see Appendix 4) including eDNA sampling and Rapid Habitat Assessment. The results identify a “good quality Rapid Habitat Assessment Score, lower fish diversity than Middle Stream, but an excellent Taxon-Independent Community Index”. Having regard to that additional information the SLR Response Memo goes on to confirm that “*stream values in the DOC-get land are lower than those in the DOC-give land and the panel will need to weigh that against the increase in terrestrial ecological values.*”

The RMA Ecology South Stream Memo provides a comprehensive assessment of that stream with reference to Rapid Habitat Assessment and eDNA testing findings. It also identifies a 4m high waterfall being a barrier to the upstream movement of longfin eel. The Memo includes at Table 2 a conservation values assessment of South Stream, with comparisons made against the other streams in the SEB land. The RMA Memo therefore helps fill some of the gaps identified by the Wildlands Assessment.

Paragraph 37 (iii) of the Wildlands Assessment is critical that the Mākaroro braided river is not assessed in the original SLR Report. With reference to Figures 1 and 2 of The Property Group assessment (attached as **Appendix 5**), and noting that the unsurveyed Land Parcel F is ‘distinct’ from the Mākaroro River, it can be seen that the Mākaroro River does not form part of the DOC-give land. Those land parcels adjoin rather than include the Mākaroro River. On that basis it is considered that a lack of assessment of that river is not an information gap

¹⁵ *Ibid.*

¹⁶ SLR Response Memo (Section 6.0, page 4).

as it does not form part of the DOC-give land. As discussed earlier, the adverse effects on freshwater values of the reservoir were fully assessed by the BOI process, with an assessment from the Cawthron Institute, for the RWSS consents and has resulted in the off-setting requirements of Schedule 6 to enhance freshwater values elsewhere.

Returning to paragraph 72 of the Draft Report, with the technical memoranda attached to this report and the additional information referenced above, it is considered that some of the information gaps in the Wildlands Assessment have been addressed and that it is now unreasonable to state that there are issues of confidence, accuracy and quality with the assessment provided by the applicant. It is further noted that the Wildlands Assessment while identifying information gaps does not make an equivalent statement and at paragraph 46 states the assumptions in the SLR Report appear reasonable based on the information that is available. It is therefore not considered that '*issues of confidence, accuracy and the quality of assessments*' is a fair representation of Wildland's comment that the '*assumptions appear reasonable*' and that it is '*difficult to be entirely confident*'.

With the information now provided with this TWSL response, it is requested that paragraph 72 be amended to reflect both the additional information now available and to correctly reflect the actual Wildlands' comment.

Finally on Freshwater Values, the DOC Report concludes with an assessment table, Table 7, based on the Wildlands findings. It is requested that the Table be updated as necessary with the additional information provided with this response, including the RMA Ecology South Stream Memo, and Eel Trap & Transfer Memo.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Change paragraph 66 to acknowledge that there is evidence of downstream transfer of adult migratory longfin eels being successfully undertaken at the Waimea Community Dam, which indicates potential for this approach to be successful for the TWSP.
2. If considered appropriate, to add an additional clause to the Condition 25 of Appendix 8 requiring the planting of native sward-forming hydrophytes to preserve wetland habitat, where such habitat is likely to reduce with tree cover.
3. Change paragraph 71 to state the now agreed size of the kahikatea treeland.
4. Change paragraph 72 to reflect the additional freshwater assessment information provided with this response and reflect the actual comment from Wildlands.
5. Update Table 7 in light of the additional information provided.

2.5 CULTURE AND HERITAGE VALUES

Paragraph 90 of the Draft Report states the April 2026 CIA was not provided with the applicant's response package. While that is correct, it was however subsequently provided to DOC on request and as such has been referenced in the DOC Cultural Heritage Report (prepared by Richard Nester) attached as Appendix 4B to the Draft Report.

Paragraphs 83 – 88 of the Draft Report references cultural concerns raised in comments on the TWSL land exchange application by various parties.¹⁷ In response to the concerns raised that the reservoir will inundate wāhi tapu burial sites, the applicant commissioned an archaeological assessment of the true right bank of the Mākaroro in identified areas of concern to mana whenua. Archaeological evidence was unable to be identified.¹⁸ Although this investigation does not relate to either the DOC give-land or get-land involved in the land exchange application, the resulting Heritage Services Hawke's Bay Report¹⁹ is attached as **Appendix 6** to this report for completeness. It is noted that Heritage Services Hawke's Bay are completing further investigations in support of the substantive application regarding the distribution network and the final report to be submitted with the substantive application will be updated from the report attached as **Appendix 6**.

Paragraph 91 of the Draft Report invites further information on *“effects to wāhi tapū, pā sites, urupa and other taonga tuku iho located within or near the proposed flooded area to assist the Panel in their consideration of the land exchange application.”* While such effects are relevant to the wider project, albeit that the dam and reservoir are already consented, the relevance to this land exchange application is questioned if these areas of cultural interest are not specifically located within either the DOC give-land or SEB land.

Paragraph 97 of the Draft Report states that the Applicant has not provided an assessment on a 'criteria by criteria' basis and may wish to consider this in any feedback on this draft report. TWSL is generally supportive of the DOC Cultural Heritage Report and its criteria by criteria assessment, with the exceptions discussed below.

Mr Nester assigns a Low / medium rating for the 'architectural significance or value' criterion for the DOC give land, not because that land has any architectural value, but because of the

¹⁷ With many of these concerns being on the cultural effects of the dam and reservoir generally rather than being specifically related to the land involved in the exchange.

¹⁸ As was the case with the Clough & Associates 2013 Archaeological Assessment in support of the original RWSS application.

¹⁹ Titled *'Tukituki Water Security Project: Archaeological Assessment'*, August 2026.

Ellis Hut located some distance to the north being potentially impacted (in terms of access) by the proposed reservoir under Scenario 2.

In response TWSL offers a solution to ensure that access to the Yeomans Track and to Ellis Hut, remains available from the southern side, or true right bank of the reservoir. Under Schedule 6 of the RWSS consents, which the TWSP relies on, a new public access track from the end of Wakarara Road is to be constructed to the Mākaroro River above the reservoir and within the Ruahine Forest Park from where existing tracks can be accessed. This replaces the Forest Park access currently available from the road end via the Mākaroro River.

In response to both the DOC Recreation Report and the DOC Cultural Heritage Report, TWSL hereby offers as a condition of its Land Exchange Application to construct, or pay for, a connecting track within the Ruahine Forest Park from the Mākaroro River beyond the end of the new access track, to Mākaroro Road which is located between the edge of the Ruahine Forest Park and the Kaweka Gwavas Forestry Company land to the north of the Mākaroro River and the proposed reservoir. In turn Mākaroro Road provides access to Yeomans Track from which Ellis Hut can be accessed. The proposed connecting track is shown in yellow in the diagram in Figure 1 below. The green dashed line represents a new track that TWSL is required to install by the conditions in Schedule 6a of the existing resource consents enabling the dam and reservoir.

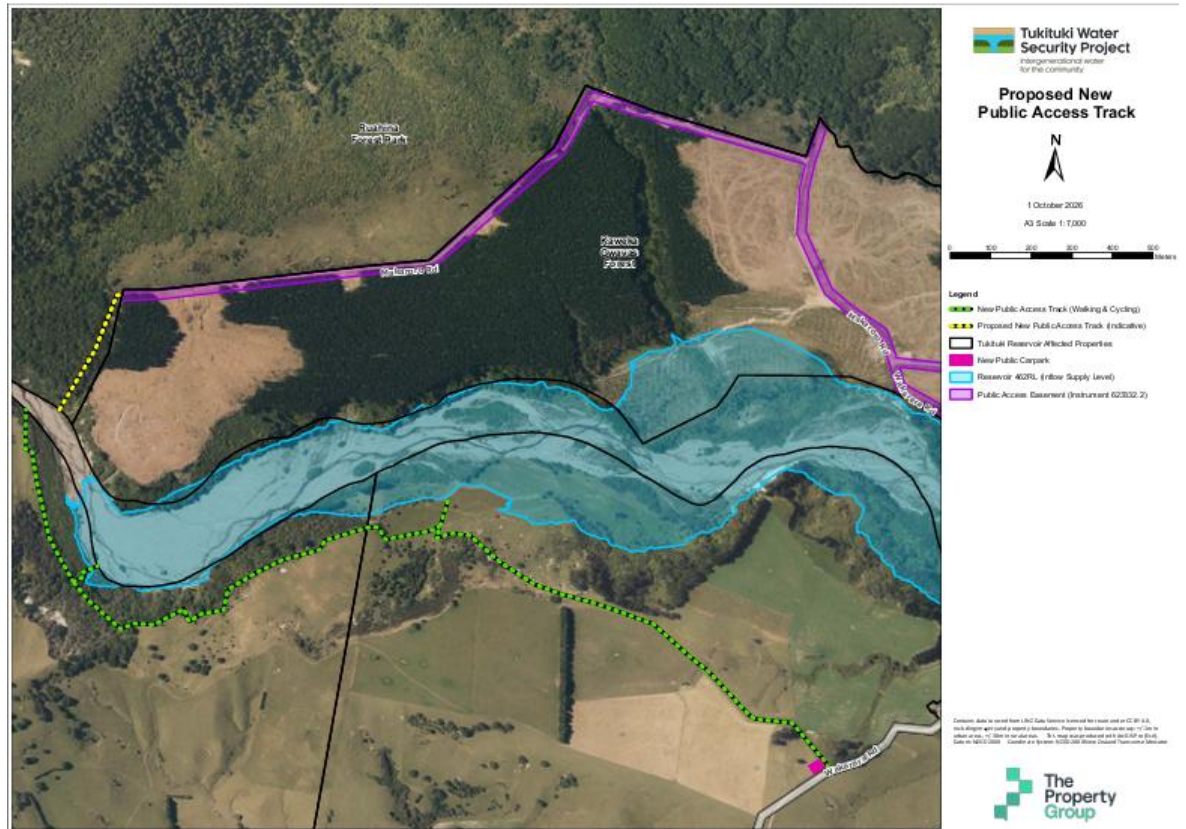


Figure 1: Proposed new track (in orange) to connect public access from the southern side of the reservoir to Mākaroro Road and Yeomans Track beyond to the north

Figure 2 below shows the wider area, including the new public access track required under Schedule 6, the extent of the reservoir, the now proposed connecting track to Mākaroro Road and Yeomans Track and Ellis Hut beyond. The existing public access easement is shown in purple. Ellis Hut will be accessible by road from the north and with the proposed new track connections, via Yeomans Track from the south.

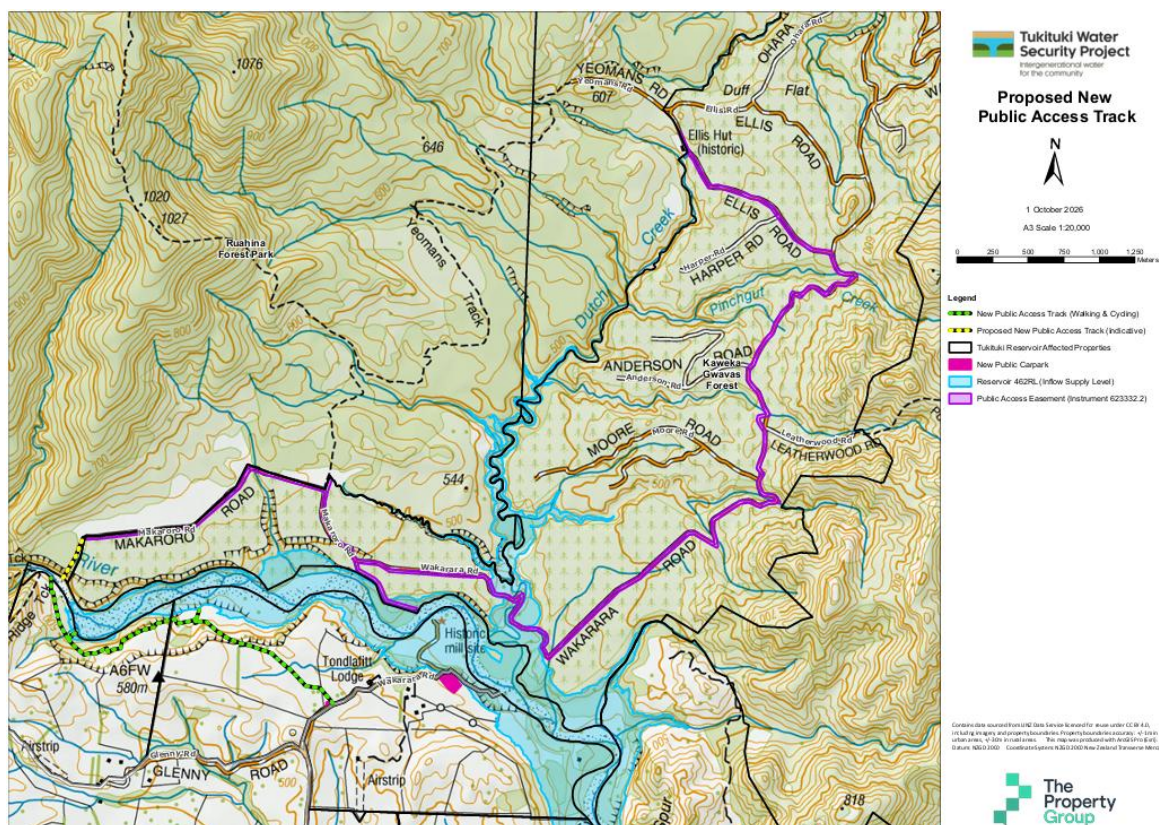


Figure 2: Wider Context Map of proposed new track connections to the public access easement and Yoemans Track

With the new connecting track to Mākaroro Road to be constructed by TWSL as part of the project and offered as a condition of the land exchange, it is requested that the ‘Architectural significance or value’ criterion be reassessed in the DOC Culture and Heritage Report and that Table 8 in the Draft Report be correspondingly amended.

The medium rating for the ‘Social significance or value’ criterion for the DOC-Get land is agreed and supported by TWSL in acknowledgement of the significance of Smedley Station to the farming and agricultural community of New Zealand.

Paragraph 26 of the DOC Culture and Heritage Report refers to the Smedley Station land needing to maintain the retention of grazed pasture, fencing, and other farming infrastructure in order to maintain and interpret its agricultural heritage values, noting that this could involve considerable ongoing management costs.

Retaining such agricultural infrastructure on the SEB or DOC-get land in its entirety, would conflict with terrestrial biodiversity values and the proposal to manage the transition of the existing pasture to indigenous vegetation cover. A potential solution could be to retain representative sections of the existing Smedley Station fencing (which will be required on

the boundaries at least to prevent stock access) and or farm track (which could be utilised as a walking track or track for pest management access) and add an interpretive sign acknowledging the link to Smedley Station and its agricultural heritage values. TWSL would be agreeable for such action to be required as a condition of consent of the land exchange, to ensure that there is a net gain in overall cultural and heritage values from the land exchange.

The current conclusion of the overall net gain for cultural and heritage values as stated in paragraph 98 of the Draft Report is supported. It is however requested that the statement that the applicant finds no net gain in culture and heritage values be removed. In light of the expert findings of Mr Nester, and the proposed new track connection and works to acknowledge the link to the agricultural heritage values of Smedley Station offered through this response, the applicant now considers that the land exchange will result in a net gain in cultural and heritage values.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Update the 'Architectural significance or value' criterion in the DOC Culture and Heritage Report and in Table 8 of the Draft Report in light of the offered connecting track to Mākaroro Road to be constructed by TWSL as part of the project.
2. Include a new condition be added to Appendix 8 to secure the offer for the connecting track to Mākaroro Road to be constructed, or paid for, by TWSL (see suggested wording under conditions heading below).
3. Include a new condition be added to Appendix 8 to secure the offer for works, including signage and representative fence and track retention to acknowledge the agricultural heritage values of Smedley Station (see suggested wording under conditions heading below).
4. Remove reference to the applicant finding no net gain in culture and heritage values from paragraph 98.

2.6 RECREATIONAL VALUES

TWSL generally has no issues with the summary of Mr Harbrow's Recreation Assessment provided in the Draft Report and the conclusions that:

- > *Mr Harbrow comes to the same conclusion as the applicant in finding the recreational values of the DOC-Give site to be Low.* ²⁰
- > *Under Scenario 2 Mr Harbrow's assessment finds **Low/Medium** recreation for the DOC-Get land.* ²¹

It is however requested that paragraph 111 of the Draft Report be amended to provide a more complete summary of Mr Harbrow's findings by also referencing that the land exchange does represent an enhancement in recreational values under Scenario 2.

Paragraph 108 of the Draft Report summarises Mr Harbrow's conclusions on access. The filling of the reservoir under Scenario 2 does not hinder access to the SEB land by walking off-track from the adjacent Gwavas Conservation Area. Further to this, if the SEB land was approach via road from the north via the public access easements over the KGFC land, access would still be possible from Wakarara Road and then with permission to cross the KGFC land, as would be the case under Scenario 1 (see Figure 2 above). This should be referenced in paragraph 108 for completeness, as it currently reads as if access to the SEB land would be better under Scenario 1 (which Mr Harbrow is not suggesting), with his table rating access under Scenario 2 as better.

Mr Harbrow also references the option of walking around the edge of the reservoir at low flow and, in some places, potentially on new areas of Crown Marginal Strip, but discounts such access on the basis that there are no clear proposals for managed access in consent conditions.²² At paragraph 53 of his report Mr Harbrow suggests how an access point into the SEB land could be secured by way of conditions as follows:

The location of any future access points is currently undetermined, but they could potentially be located where the land borders the future location of Crown Marginal Strip, where future walking and cycling tracks either cross the DOC-Get land or facilitate access, and where any access is agreed on the true left of the reservoir including from the KGFC land. At a minimum, this would require the installation of appropriate signage and an entrance stile and it would be appropriate for the cost of this to be borne by the Applicant.

To secure such recreation benefit TWSL propose that conditions be added to Appendix 8 for an entrance stile and a practicable access point from the Crown Marginal strip or other agreed location, with appropriate signage at the same location as the heritage signage

²⁰ DOC Draft Report (paragraph 105).

²¹ DOC Draft Report (paragraph 110).

²² DOC Recreation Report, M Harbrow (paragraph 37).

regarding Smedley Station is proposed as mentioned above. This would further secure the net gain in recreational values from the proposed land exchange.

In referring to Table 10 of the Draft Report and to the corresponding Table 2 of Mr Harbrow's report, it is noted that the 'Natural hazard / climate risk' criterion rating is intended to illustrate that the DOC-Give land has greater natural hazard susceptibility from flooding than the DOC-Get (SEB) land, which should be a negative, however the ratings are expressed as a positive with the Give-land rated L/M and the Give-land rated L. It is requested that both these tables be amended to assign a more positive rating for the SEB land compared to the DOC-Give land for the Natural hazard / climate risk criterion.

It is acknowledged that the proposed new connection track set out in Figures 1 and 2 above in responding to heritage values is not directly related to the recreational values of the DOC-Get (SEB) land, but could be referenced under the context section of Mr Harbrow's report under the heading 'Recreation opportunities around the project area'.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Add the additional wording in bold font to the following sentence in paragraph 111: *"Mr Harbrow's findings however indicate the land exchange does not represent an enhancement in recreational values under Scenario 1 **but does represent an enhancement under Scenario 2.**"*
2. Include a new condition be added to Appendix 8 to require an access stile and appropriate signage to secure recreation values at the same location as the heritage enhancements are proposed (see suggested wording under conditions heading below).
3. Change the ratings for Natural hazard / climate risk in Table 10 of the Draft Report and Table 2 of the Recreation Report to clarify that the SEB land is assessed more positively in being subject to a lesser flooding risk than the DOC-Give land.

2.7 LANDSCAPE CHARACTER VALUES

Paragraph 112 of the Draft Report states "expert landscape assessment was not provided by the Applicant." The reasons for this have already been explained under 2.2 above, with the DOC Guidelines referred to for the preparation of TWSL's land exchange application not separately listing 'landscape character' as a conservation value requiring assessment, nor this requirement being discussed during pre-engagement. Nevertheless, as part of this response to the DOC Draft Report, TWSL has commissioned a landscape assessment from Wayfinder Planning and Strategy, with that assessment being attached as **Appendix 7** to this report ("Wayfinder Assessment"). It is noted the Wayfinder Assessment is not a peer review

of Mr Head's DOC Landscape Character Assessment, but rather an independent expert assessment.

The Wayfinder Assessment concludes as follows:²³

In my opinion, these broader landscape and conservation outcomes warrant greater weight in the assessment. When considered over the long term, the exchange would expand and strengthen the Wakarara-Gwavas conservation landscape and support a more coherent and resilient conservation land. While the exchange involves the loss of some existing conservation values associated with the DOC-Give land, these losses are outweighed by the future gains.

Therefore, in my opinion, the exchange proposed in this instance is considered to represent a net positive outcome for landscape conservation values.

It is requested that the Draft Report be amended to reference the Wayfinder Assessment in regard to landscape character values.

The Draft Report summarises Mr Head's assessment and sets out its breakdown into 'landscape value' and 'waterways value'. This appears to place significant overall weighting on waterway values for a landscape character assessment. The Wayfinder Assessment makes the following comment on this matter:²⁴

The LAR includes a separate waterways assessment which I consider a practical addition given the conservation-focused purpose of the assessment. However, the methodological relationship between the waterways assessment and the landscape assessment is not fully explained. The report appears to treat waterways as both a landscape attribute and a separate assessment stream. This creates some uncertainty regarding whether waterways are effectively considered twice: once as part of landscape character and again through the standalone waterways assessment. The methodology would be stronger if it explicitly explained how the waterways findings are integrated into the overall value assessment and how any potential overlap is managed.

The Draft Report sets out Mr Head's conclusions at paragraphs 129 and 130. TWSL is concerned with the significance assigned to the area of destocked pasture on the SEB land when, with the proposed conditions and additions to those conditions now proposed,²⁵ that area provides significant opportunity for enhanced conservation values, including landscape values, over time as it reverts to indigenous vegetation cover.

²³ Wayfinder Assessment (Page 13).

²⁴ Wayfinder Assessment (Page 11).

²⁵ See the commentary under 'Biodiversity (terrestrial) - Existing Area of Pasture and Rank Grass on Smedley Exchange Block', above.

Indeed, as stated in the Wayfinder Assessment:²⁶

The LAR identifies the 45 ha of pasture as a potential future management issue that impacts on the suitability of the exchange. Weed management and restoration feasibility are not clearly identified as separate methodological components in the LAR, yet are given noticeable influence on the comparative analysis. There is a methodological question regarding whether weed burden is being assessed as a component of current landscape value, future landscape trajectory, management cost, ecological value, or some combination of these factors. The report appears to use all of these considerations, but the methodology does not explicitly define how they should be incorporated. The report does not clearly identify why weed infestation has been treated as a discrete assessment category or how its effects have been incorporated into the broader evaluation of landscape character and value. As a result, it is difficult to determine the relative weight given to weed infestation compared with other landscape attributes. The section also places considerable emphasis on the ecological consequences of weed infestation. While ecological condition may contribute to landscape character and value, the assessment does not consistently explain how ecological effects translate into landscape effects. In addition, the comparative conclusions appear to rely partly on assumptions regarding future management success, and it is not always clear whether conclusions are based on existing landscape conditions or anticipated future outcomes.

It is considered that the Wayfinder Assessment should be preferred for Scenario 2 as it appropriately places weight on the DOC-Get land being subject to stock exclusion, pest and weed control, indigenous revegetation, wetland restoration and ongoing conservation management.²⁷ These measures are required by the proposed conditions in Appendix 8 which are agreed to by TWSL along with further strengthening of those conditions. This should be given appropriate consideration in regard to landscape character in the DOC Report. To the extent that the LAR is influenced by concerns about weeds in the pasture area, these concerns would appear to be at odds with the conditions and obligation to regenerate the pasture to indigenous vegetation (with 80% canopy cover of woody indigenous species per the Ecological Restoration Plan 25 c).

The Wayfinder report notes on page 9 that:

“The DOC-Get land is anticipated to enhance the values of ONF-1 Wakarara over time through further regeneration of indigenous vegetation. In contrast, the loss of the DOC-Give land from ONL-1 Ruahine Ranges will have a more immediate but very limited effect on the values of that ONL due to the area lost relative to the ONL. The DOC-Give land is not considered to contribute strongly to the expressiveness of the

²⁶ Wayfinder Assessment (Page 10).

²⁷ Wayfinder Assessment (Page 12).

formative process of the ranges, so the landscape values relate primarily to the indigenous vegetation.”

The conclusion in the LAR is counter intuitive in that small and segregated land parcels bordered by commercial forestry operations should not be assessed as having greater landscape value than the significantly larger area of the DOC-Get (SEB) land that will enhance the values of ONF-1 Wakarara.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Appropriately address the landscape character values of the DOC-Get (SEB) land with regard to the Wayfinder Assessment and the proposed improvement and management actions to the existing area of pasture that are secured by the proposed consent conditions, with a finding that there will be a net gain in landscape character values.

2.8 CONCLUSION ON CONSERVATION VALUES

Paragraph 132 of the Draft Report refers to the Department’s External Guidance for conservation values assessments for land exchanges under the FTAA and lists Landscape character as a specific subject area. Again, I note that ‘Landscape character’ was not one of the specific subject area values in the FTAA Land Exchange Guidelines that DOC shared with TWSL as part of pre-lodgement engagement.

Paragraphs 133 and 134 of the Draft Report refers to the two scenarios under which the DOC assessments were undertaken. It is reiterated that Scenario One is an unrealistic scenario as that is not the basis on which the TWSL land exchange is advanced. TWSL will not be purchasing land off Smedley Station to enable the exchange unless it has a consented and viable project to implement. Therefore, the only way in which the land exchange could proceed is under Scenario Two, and that is the only basis on which the benefits of the proposed land exchange to conservation values should be measured. TWSL request that the Draft Report acknowledge this point.

Paragraphs 139 and 140 of the Draft Report note comments received on the Application that there are wāhi tapu, pa sites, urupa and other taonga tuku iho located within or near the proposed area to be inundated. The archaeological reports undertaken on the project (Clough 2013 and Heritage Services Hawke’s Bay 2026) document Māori historical associations with the wider area, however there is no evidence to suggest that such sites of significance may be located within the specific land parcels subject to this land exchange application. Nevertheless, TWSL acknowledges the importance of this issue, particularly with the CIA referring to wāhi tapu within the extent of the reservoir. Therefore, at the time of

writing TWSL has agreement with Tamatea Pōkai Whenua (TPW) to investigate again²⁸ and consider this matter further by undertaking a site visit with mana whenua representatives and archaeologists on 12 October 2026. The outcome of this process is not specifically relevant to the land exchange but is of importance to the wider project and to the substantive FTAA application and will therefore be documented in that application.

Paragraphs 141 and 142 refer to the conclusions of Mr Head's Landscape Assessment. As discussed above, TWSL has provided an independent landscape assessment that concludes that the land exchange would result in an enhancement of landscape character values for Crown-owned land. Furthermore, the rationale for Mr Head's conclusions under Scenario 2 are questioned given the requirements of the Ecological Restoration Plan in the proposed conditions, that TWSL is largely accepting, to regenerate the pasture into indigenous forest. It is requested that Mr Head reconsider his conclusions on Scenario 2 with regard to both appropriate recognition of the proposed conditions and the Wayfinder Assessment, and that this reconsideration be reflected in the Landscape character conclusions.

The Draft Report's conclusions on conservation values (section 5.1.6) have not carried across the conclusions on recreation values. It is requested that recreation values be included in the conclusion on conservation values section of the Draft Report.

Regarding an overall conclusion on conservation values, it is considered that the proposed land exchange will result in a net gain in the conservation value of Crown owned land for the values of terrestrial biodiversity, cultural heritage, recreation and landscape, with a loss in conservation value in regard to freshwater. On this basis it is considered that the land exchange, with the conditions proposed in Appendix 8 of the Draft Report and added to by the amendments sought in this report, will result in a clear overall net gain in the conservation value of Crown owned land. This conclusion should be reflected in section 5.1.6 of the DOC Report.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Acknowledge that the DOC land Exchange Guidelines that TWSL were provided with in pre-lodgement engagement did not include 'Landscape character' as a specific conservation value to be accessed.

²⁸ In preparing the Archaeological Assessment attached as **Appendix 6**, the Heritage Hawke's Bay Archaeologists did undertake a site visit to the proposed reservoir in the vicinity of the wāhi tapu site, which is documented in their report.

2. To acknowledge that Scenario 1 is only a theoretical exercise and that the FTAA conservation values test is appropriately applied under Scenario 2 as that is the only basis on which any land exchange could occur.
3. Update the landscape values conclusions in light of a reassessment under Scenario 2 that considers the undertaking of the Ecological Restoration Plan to provide certainty of the indigenous revegetation of existing pasture areas.
4. Add conclusions on recreation values to section 5.1.6.
5. Articulate that the assessments demonstrate a net gain in the following conservation values: terrestrial biodiversity, cultural heritage, recreation and landscape, with a loss in conservation value in regard to freshwater; and that with the conditions proposed in Appendix 8 of the Draft Report and added to by the amendments sought in this report, there will be a clear overall net gain in the conservation value of Crown owned land.

3. TWSL RESPONSE TO OTHER STATUTORY CRITERIA ASSESSED

3.1 FINANCIAL IMPLICATIONS FOR THE CROWN

The conclusion in paragraph 148 of the Draft Report that there are no financial implications of the land exchange for DOC is agreed with. In regard to paragraphs 149 and 150 it is noted that the stated operational costs would not arise until TWSL has completed necessary actions in compliance with the proposed consent conditions, which for weed and pest management is set as a minimum of 10 years.²⁹

3.2 CONSEQUENCES OF THE LAND EXCHANGE

Paragraphs 153 – 158 raise issues with the ongoing management of the DOC-Get (SEB) land relating to pest plan and animal control of the retired pasture, and access infrastructure. Both these matters have been commented on above and are addressed by the proposed conditions in Appendix 8 of the Draft Report. These conditions are further strengthened by the proposed additions to the Ecological Restoration Plan to provide for an adaptive management approach for the revegetation of pasture areas, and conditions to require the installation of access infrastructure and signage, as now proposed by TWSL. It is requested that this be acknowledged in the DOC Report.

Paragraphs 159 and 156 of the Draft Report comment on an area of pastoral farmland currently owned by Smedley and located between the SEB land and the KGFC land. The future of that land is still subject to negotiations and, if vehicular access is required to

²⁹ See Appendix 8 of DOC Draft Report Conditions 25 & 33.

connect that land with the KGFC land, the necessary resource consent required from Hastings District Council for the removal of indigenous vegetation³⁰ would be applied for at the time.

The Smedley owned land located between the proposed reservoir and the SEB is discussed in paragraphs 161 and 162 of the Draft Report. Again, the future ownership of this land is subject to negotiations.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Acknowledge agreement from TWSL to the Proposed Conditions (in Appendix 8) and the additional conditions offered to reduce the management liability concerns raised by the DOC experts.

3.3 LEGAL AND FINANCIAL LIABILITIES AND HEALTH & SAFETY RISKS

Visitor safety is discussed in paragraphs 166 – 171 of the Draft Report. In regard to paragraph 170 of the Draft Report, TWSL is accepting that it would bear the cost of appropriate signage and an entrance stile as is discussed under the ‘Recreation Values’ heading above.

3.4 STATEMENTS OF GENERAL POLICY

In regard to section 5.5 of the Draft Report the requirement under clause 29 of Schedule 6 of the FTAA is for the Panel to “take into account” statements of general policy approved under s17B or 17C of the Conservation Act 1987. It is noted that this is not therefore a threshold test, but rather a mandatory relevant consideration.

Paragraph 184 of the Draft Report states that:

“The land exchange will arguably not provide for a significant improvement in the natural functioning of conservation land when considering all conservation values and hence will not achieve Policy 6(a)(ii) either under Scenario One or Two. This difficulty is evidenced by the loss of the considerably higher freshwater (including wetland) values and landscape values for the DOC-Give land and further loss indicated as regards terrestrial biodiversity.”

Noting that only Scenario 2 should be considered as a feasible option, this paragraph does not appear consistent with section 5 of the report. Specifically, and by way of example, the

³⁰ Rule IN4 (Restricted Discretionary Activity) of the Hastings District Plan (Chapter 20.1).

reference to “... further loss indicated as regards terrestrial biodiversity” appears to be at odds with Wildlands conclusion on page 29 that:

*“the evidence provided does not indicate that the exchange will enhance the conservation values of land managed by the Department of Conservation under Scenario 1 (i.e. current values). **However, under Scenario 2, it is likely that the overall conservation values of Crown owned land will be enhanced.**”* (emphasis added).

Paragraph 186 of the Draft Report sets out Policy 6(a) relating to land acquisitions and exchanges, which is described as having three limbs, the third limb of which in turn has a list of outcomes (i) – (vii) listed.³¹

The three limbs of Policy 6(a) and the outcomes (i) – (vii) of the third limb are disjunctive, therefore, properly interpreted, consistency or achievement of any one of the limbs, including any one of the outcomes of the third limb is enough to comply with the policy. The disjunctive nature of the considerations in Policy 6(a) is not conveyed in the Draft Report, and it is requested that the report be amended to make this clear.

Paragraphs 180 – 186 of the Draft Report assess the TWSL Application under Policy 6(a) under both Scenarios One and Two. Again, it is noted that Scenario One is not being sought by the application and cannot occur, therefore the assessment should be focussed on Scenario Two.

Paragraphs 180 and 181 conclude that the first limb is arguably met and the second limb is not. It is considered that the first limb is clearly met, with the improvements proposed as part of the application and secured by the proposed Appendix 8 conditions.

Given the technical assessments appended to this Response, along with the TWSL acceptance of the proposed conditions and offer of additional conditions to secure gains in terrestrial biodiversity, heritage, recreation and landscape values, it is considered that paragraph 184 of the Draft Report is not a fair assessment and should be amended.

As well as meeting the first limb of Policy 6(a) it is also considered that the third limb is met on the basis of the improvements offered to the SEB land in the original application and by additional conditions proposed in this response alongside the proposed Appendix 8 conditions, with the following specific outcomes being met:

- (i) improve representativeness of public conservation land

³¹ These matters are listed as bullet points under paragraph 178 of the Draft Report, which should be amended to the policy number references (i) – (vii).

- (iii) improve the amenity or utility of places
- (v) improve the natural linkage between places
- (vi) secure practical walking access to public conservation lands and waters, rivers, lakes or the coast
- (vii) achieve any other purpose allowed for under the relevant Acts

On that basis the land exchange meets Policy 6(a) by meeting the first and third limbs and is therefore clearly within the scope of the Policy. The weight to be given to this matter is for the Panel, noting that compliance (or otherwise) with the Policy is a matter that must be taken into account.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended as follows:

1. Paragraph 184 be amended to reflect section 5 and the fact that only Scenario 2 should be assessed.
2. Change the bullet points in paragraph 178 to the corresponding number references of Policy 6(a) (i) – (vii).
3. Change section 5.5.1 to clarify the disjunctive nature of the clauses in Policy 6(a)(i)-(vii) only require one outcome be achieved for the policy to be complied with.
4. Update the assessment and conclusion of section 5.5.1 to confirm that the land exchange satisfies Policy 6(a) of the Conservation General Policy.

3.5 STRATEGIES AND PLANS

The Draft Report identifies that pursuant to clause 29(1)(b) of Schedule 6 of the FTAA the panel ‘may’ consider any conservation management strategy, conservation management plan or reserve management plan.³²

The relevant strategies and plans identified in the Draft Report are:³³

- > *Wellington Conservation Management Strategy 2019-2029 (“WCMS”).*
- > *Ruahine Forest Park Management Plan 1992 (“RFPMP”).*
- > *Hawke’s Bay Conservation Management Strategy 1994 – 2024 (“HBCMS”).*

³² Draft Report (paragraphs 187 & 189).

³³ Draft Report (paragraph 189).

Due to jurisdictional boundaries the WCMS and RFPMP are only relevant to the DOC-Give land, while the HBCMS is also relevant to the DOC-Get land.

The Draft Report provides assessment of the proposal against the WCMS in paragraphs 190 – 197 and in Table 5. The assessment in Table 5 in particular is considered to be somewhat artificial insofar as it applies to the DOC-Give land and it is requested that this be taken into account by the panel.

In considering the HBCMS and the relevant provisions identified in the Draft Report, it is considered that the DOC-Get land will assist in achieving consistency with the following provisions:

- > *A Conservancy in which people's interaction with land, water and air reflects a spirit of restoration.*³⁴
- > *A Conservancy in which natural and historic places are enjoyed for recreation*³⁵
- > *To seek an integrated approach to land management, irrespective of ownership, in co-operation with other landowners and local authorities.*³⁶
- > *To protect the soil and water conservation and water quality/quantity values of areas managed by the Department, primarily by animal pest control and fire prevention.*³⁷
- > *To maintain, and where appropriate enhance, public access to areas managed by the Department, particularly to the forest parks.*³⁸
- > *In the provision of further recreational facilities, to give more emphasis to day use opportunities on the fringes of the mountainlands.*³⁹

³⁴ Given the Ecological Restoration Plan set out in the Proposed Conditions as agreed to and enhanced by TWSL in its amended condition set (Appendix 8 to this report).

³⁵ Given the proposed heritage signage acknowledging the values of the Smedley Cadet farm and the additional natural areas within the SEB block, it will add to the natural and historic places available to the public within the Conservancy.

³⁶ Acceptance of the Land Exchange will require enhancement actions to commence on the SEB land prior to its exchange, while the wider project and offset package includes various biodiversity enhancements on private land.

³⁷ The Ecological Restoration Plan (proposed conditions 24 – 31) and Pest Management Plan (Conditions 32 – 37) will ensure both additional indigenous planting to contribute to soil and water conservation as well as animal pest control and plant weed control.

³⁸ The proposed entrance stile and signage and walking linkage to the public access easement around the reservoir margin will assist in achieving this objective, as will the proposed new link track around the top of the reservoir on the northern side of the Mākaroro River to provide linkage to Yeomans Track and Ellis Hut.

³⁹ As above, additionally the wider proposal involves additional day visit facilities with a new picnic area, shelter, and boat ramp facilities and access to Ruahine Forest Park tracks to be accessible from the Wakarara Road end.

Paragraph 209 of the Draft Report refers to the management burden through pest control and fire prevention of the DOC-Give land, while paragraph 212 refers to an absence of access. The matters raised have been addressed in this response report and it is requested that both these paragraphs be updated with consideration of the management actions proposed by TWSL and secured by conditions, and the proposed additional conditions in Appendix 8 of this report.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended as follows:

1. By acknowledging the difficulty in assessing the land exchange under the relevant management plans and strategies due to the jurisdictional boundaries of the WCMS in particular not including the DOC-Get land.
2. Update paragraphs 209 and 212 to the management actions proposed by TWSL and secured by conditions proposed by DOC and agreed with and added to by TWSL.

4. TWSL RESPONSE TO CONDITIONS

TWSL is generally and largely accepting of the Conditions proposed in Appendix 8 of the Draft Report as has been referenced though out this response. As mentioned, additional conditions are proposed to further secure the benefits of the conservation values of the proposed land exchange. The now proposed conditions set from TWSL, formatted as a track-change version to the Draft Report's conditions set, is attached to this report as **Appendix 8**. This includes:

1. Amending the Ecological Restoration Plan to both better define 'weeds', consistent with the Hawkes Bay Regional Pest Management Plan, and suppress pest plants in a manner that facilitates establishment of indigenous species across the site and protect existing indigenous habitat from pest plants. This is explained in the appended SLR memo. This could, by way of example, include nursery crops to protect establishing indigenous plants.
2. Adoptive regeneration through firstly natural regeneration and pest plant control. This is explained in the appended SLR memo.
3. Amending the Pest Mammal Management Plan to be the sooner of 10 years or achieving the target. The reason for this change is explained in the SLR memo, in that if there is not corresponding pest control performance in the neighbouring DOC land then ongoing reinvasion from neighbouring DOC land could continue the obligation for ever.

5. SECTION 34(4) MATTERS AND TREATY OF WAITANGI CONSIDERATIONS

Paragraph 229 and Figures 9 and 10 of the Draft Report identifies that portions of the DOC-Give land are located within the Heretaunga Tamatea Statutory Acknowledgement Area and Deed of Recognition covering ‘Part of the Ruahine Forest Park’ and ‘Ruahine Forest (East) Conservation Area’. TWSL acknowledges that this is the case.

Paragraphs 233 – 235 of the Draft Report set out concerns raised in comments by TPW. These concerns are acknowledged by TWSL and as mentioned above arrangements have been made for a site visit with TPW representatives, mana whenua, TWSL representatives and Hawke’s Bay Heritage Services archaeologists on 12 October 2026. The purpose of this site visit is to view the wāhi tapu area identified in the CIA and to better understand the potential effects of the reservoir on that area and any other areas of significance and to consider mitigation options.

There are also other matters identified by TPW about the wider project that will be worked through. TWSL intends to engage with TPW in discussing and resolving these issues prior to the lodgement of the substantive application.

Similarly, paragraphs 240 – 242 of the Draft Report identify concerns raised by KGFC, which is jointly owned by TPW and Mana Ahuriri. The proposed reservoir would necessitate the purchase of land from KGFC, and TWSL is actively engaging with KGFC regarding this matter and other potential concerns that KGFC may have regarding the project. As is noted in the Draft Report, the KGFC land is not directly involved in the land exchange application.

6. COMMENTS

Section 8 of the Draft Report provides a summary received of comments from other parties on the TWSL land exchange application. A separate appendix is provided to the Draft Report, Appendix-2, which tabulates the comments received by DOC along with responses to those comments.

Paragraph 257 describes the opposition of Royal Forest and Bird Protection Society (“**RFBPS**”) and their view that the proposed land exchange “*does not satisfy the statutory requirement to enhance conservation values*”. Appendix 2 on page 85 of the Draft Report, in the first line under RFBPS, articulates this point.

“Pg. 2, Para 5: Application fails to pass the statutory criteria for land exchange under the FTAA, failing to demonstrate the exchange would enhance the conservation values of areas and Crown-owned reserves considered as a whole”

To which the Response from DOC to the comments received is:

“The assessment of conservation values and Crown-owned reserves considered as a whole is addressed in Section 5. The Department does not find the proposal would enhance the conservation values of areas and Crown-owned reserves considered as a whole.”

This second sentence is at best unclear or misleading, or otherwise inconsistent with the Draft Report and improvements in terrestrial biodiversity, cultural heritage, recreation and landscape.

Further to this, it is noted that Section 5 of the Draft Report addresses the Conservation General Policy 2019. As set out above, this Response Report establishes that the TWSL land exchange meets Policy 6(a) by meeting the first and third limbs and is therefore clearly within the scope of the Policy. Also established in this Response Report is that the relevant conservation management strategies and plans may be taken into account by the panel, but care needs to be taken in doing so due to the applicable jurisdictional boundaries meaning that the DOC-Give land falls outside of the WCMS. It is nevertheless established above that the DOC-Give land will assist in achieving consistency with various provisions of the HBCMS.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Reword the sentence on page 85 to be clearer as to the context and consistent with the Draft Report and with the land exchange being within the scope of Conservation General Policy 6(a).

7. TWSL COMMENTS ON DRAFT REPORT SUMMARY OF CONCLUSIONS

Paragraph 292 of the Draft Report refers to the two scenarios assessed. Again, it is requested that Scenario 2 be acknowledged in this concluding section of the report as the basis on which the application has been made as the only possible outcome if the application is granted.

Paragraphs 292, 297 and 301 all refer to Scenario 2 resulting in a net loss in regard to landscape character values. Based on the independent Wayfinder Assessment (attached as **Appendix 7**), and the weighting that the LAR placed on the existing pasture area in the DOC-Get land, which this Response Report demonstrates will be returned to indigenous vegetation cover over time in accordance with DOC's proposed conditions, this conclusion

is strongly disagreed with. On the basis of this Response Report, it is requested that the conclusions in paragraphs 292, 297 and 301 be amended to acknowledge that Scenario 2 will result in an improvement in landscape character values.

The comment in paragraph 295 that potential effects on wāhi tapū, pā sites, urupā and other taonga tuku iho located within or near the proposed inundation area should be addressed with further information is acknowledged, noting that such area maybe beyond the scope of the proposed land exchange. As described above, TWSL is actively engaging with TPW on these matters including with a further site visit to the areas of concern planned for 12 October 2026.

Paragraph 297 refers to recreation values and it is requested that the conclusion be revisited with the increase in recreation values with the additional conditions now proposed and set out in Appendix 8.

Paragraphs 298 and 299 refer to management costs and ongoing liabilities for DOC. These sections of the report should acknowledge that the estimated \$25,000 of operational management costs would not be incurred by the department for at least 10 years after the date of transfer as the proposed conditions require 10 year minimum timeframes for fencing maintenance, ecological restoration work including pest plant management, and pest mammal management. Further to this it is considered that the management liabilities referenced in paragraph 299 are overstated given the management actions agreed to be TWSL and required by the proposed conditions set out in Appendix 8.

Amendments sought:

TWSL therefore respectfully requests that the Draft Report be amended to:

1. Update paragraph 292 to acknowledge that Scenario 2 is the basis on which the application has been made as the only possible outcome of the application if granted.
2. Update paragraphs 292, 297 and 301 to acknowledge that there will be an enhancement of landscape character values under Scenario 2.
3. Update paragraph 296 in light of the increase in recreation values from the proposed conditions to require an entrance stile and signage to be installed.
4. Update paragraphs 298 and 299 to acknowledge the proposed conditions will help reduce ongoing management liabilities and that operational management costs will not fall to DOC for at least 10 years after the transfer of the land given the 10 year timeframes set out in the relevant conditions.

8. CONCLUDING COMMENTS

TWSL thanks DOC for producing the Draft Report and the associated technical reports. These reports have highlighted the benefits, concerns and potential improvements that can be made to conservation values as a result of the land exchange.

The proposed conditions attached as **Appendix 8** to the Draft Report are helpful and mitigate some of the issues identified in the Draft Report. The amendments proposed in Appendix 8 to this Response Report seek to further strengthen the certainty of the conservations values that will result from the land exchange.

Through this Response Report and the appended technical memoranda, TWSL has taken the opportunity to propose enhancements to the land exchange to help secure its benefits and the overall enhancement of conservation values. TWSL looks forward to these enhancements being considered and acknowledged in the Director-General's Final Land Exchange Report.

APPENDIX 1

Professional Qualifications and Experience of Report Author, Philip McKay

I am currently employed as a consultant planner and Partner at Mitchell Daysh Limited (**MDL**). I have worked as a consultant planner for MDL since April 2018. Prior to that I was employed as a Senior Consultant Planner at Environmental Management Services Limited from September 2015 to April 2018. I held the position of Environmental Policy Manager with the Hastings District Council from January 2009 to September 2015.

I hold a Bachelor of Regional Planning with Honours from Massey University, and am a Member of the New Zealand Planning Institute, and committee member and former secretary of the Central North Island Branch of the Institute. In total I have some 33 years' experience as a practicing planner and have a Chair's certification under the Making Good Decisions programme.

My professional experience includes the presentation of both resource consent and district plan related planning evidence to Council and Environment Court hearings over many years. I have also chaired and made decisions on several resource consent hearings as an independent commissioner.

To: Mike Scott

From: Hamish Dean

Company: Tukituki Water Security Ltd

SLR Consulting New Zealand Limited

cc:

Date: 30 September 2026

Project No. 875.016805.00001

**RE: Smedley Land Exchange
DOC Evaluation**

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1.0 Introduction and Background

In March 2026, Tukituki Water Security Ltd applied through the Fast-track Approvals Act 2024 to undertake a land exchange with the Department of Conservation (DOC). The land exchange is required if the Tukituki Water Storage project is to go ahead, as 29.7 ha of DOC land will be inundated. As part of the application an assessment¹ of biodiversity values in the area to be lost (the DOC-give land) and the area to be gained (the Smedley Exchange Block or DOC-get land) was undertaken by SLR Consulting New Zealand (SLR). The report relied primarily on data collected by Kessels Ecology in 2013-14 during the previous consenting process but also on the assessment of the exchange undertaken by DOC experts², who concluded that the exchange “would enhance conservation values of the land managed by the Department”. With respect to criticism of the use of ten-year-old data, I would note that ten years is a very small amount of timeframe in terms of ecological change in an established system.

SLR undertook a brief site visit in late 2025. The purpose of this site visit was to update vegetation descriptions for the seral vegetation types and assess wetlands in the Donovan Gully area. A brief visit was also made to the lower reaches of Dutch Creek, but observation and assessment of the creek was heavily constrained by time.

The overall approach to the land exchange application was discussed with DOC representatives and Wildlands prior to submission on Thursday 27 Nov 2025, and there was no indication that our approach was unacceptable.

DOC engaged Wildland Consultants (Wildlands) to undertake a review of the SLR assessment and provide advice on the relative ecological values of the DOC-give and DOC-get land. The review and assessment were largely fair and balanced, and I agree with their overall assessment that under Scenario 2 “*it is likely that the overall conservation values of Crown owned land will be enhanced.*”³ This memorandum addresses selected points from the Wildlands report that relate to terrestrial ecology and that require further elaboration or a direct response. Aquatic ecological values are not dealt with here and will be addressed by others.

¹ SLR Consulting New Zealand. 2025. Land Exchange Assessment. Prepared for Tukituki Water Security Limited. 83 pp.

² La Cock, G., Rogers, G., Gerbeaux, P., and Scrimgeour, J. 2015. Assessment of proposed land exchange between Ruahine Forest Park revocation land and proposed Smedley Exchange Block in relation to Ruataniwha Water Storage Scheme. Department of Conservation.

³ Page 29 of the Statement of Evidence of Wildland Consultants.

2.0 Basis of Memo

This report has been prepared by SLR with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Tukituki Water Security Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report has been prepared for Tukituki Water Security Limited in respect of its application for all approvals under the Fast-track Approvals Act 2024 for the Tukituki Water Security Land Exchange. The Panel appointed to consider the application may rely on this report for the purpose of making its decision under the Fast-track Approvals Act 2024.

This report has been prepared in accordance with the Environment Court's Code of Conduct for expert witnesses, contained in the Environment Court's Practice Note 2023. The author of this report agrees to comply with the Code of Conduct, and confirms that unless otherwise stated, the issues addressed in this report are within the area of expertise of the author. No material facts have been omitted that might alter or detract from the opinions expressed in this report.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

3.0 Grazed Pasture and Rank Grass

The proposed land exchange includes around 45 ha of pasture. Wildlands have pointed out that there was no proposal for returning this area to indigenous cover and that it represents a potential ongoing liability for DOC⁴. I agree that there is a risk that this area could require ongoing management, however given the prevalence of indigenous regeneration on the land, I think that the pasture areas can be managed and converted to indigenous cover. There are several options for doing this, including bulk planting of indigenous species, direct seeding, and managing the block in such a way as to support natural regeneration.

Tukituki Water Security Ltd propose taking an adaptive management approach to revegetation on the block, which will be detailed in the management plan. Initially, this is likely to involve monitoring of vegetation establishment and succession from pasture. As topography, microclimate, and seed availability play a significant role in vegetation succession, different parts of the block will respond differently to the removal of grazing livestock. Direct planting may be required in some areas, but the most likely scenario is that the succession to indigenous scrub and, eventually, forest can be managed solely through selective weed control. As vegetation succession begins, and more information becomes available on the nature of that succession, decisions on appropriate management responses can be made. Proposed conditions 25 and 26⁵ allow for extended timeframes, provided that 80% indigenous cover is met.

4.0 Wetlands

Wildlands identified a wetland adjacent to up Dutch Creek, approximately 300 m upstream of the Makaroro confluence. This wetland was not identified in our report. This area was not able to be surveyed in 2025 and our report relied on data collected in 2013, which did not identify a wetland at that location. It is possible that the wetland has formed since the stream was scoured out during Cyclone Gabrielle but given its location on a terrace above the

⁴ Paragraphs 51 – 52 of Wildlands evidence.

⁵ Page 105 of the Draft DOC report.



stream, it is likely that it was missed during the previous survey. After reviewing the photographs of this site provided by Wildlands, I agree with their assessment.

Wildlands also questioned the overall size and classification of the kahikatea treeland area in the northern part of the DOC-get land⁶. Unfortunately, this area also was not visited in 2025, as it had been surveyed and mapped in 2013 and there was no reason to believe the data were incorrect. Considering Wildlands have visited the site most recently, I defer to their assessment although I do note that delineating the exact edge of a wetland can be difficult at times and conditions, including vegetation composition, may have changed somewhat since the site was originally surveyed.

With these changes, the overall give and get ratio for wetlands changes (Table 1). However, there is still slightly more wetland in the DOC-get land than in the DOC-give land, although the DOC-get land wetlands are of lower ecological value.

Table 1: Changes to wetland areas in the DOC-give and DOC-get (SEB) land.

Veg Type No.	Vegetation / Habitat Type	DOC Land	SEB	Difference
	Wetland			
8	Wetland	~~0.236~~ 0.306		
22	Rautahi sedgeland		0.023	
21	Juncus – blue sweetgrass rush-grassland		0.107	
20	Kahikatea treeland		~~0.453~~ 0.210	
	Wetland total	~~0.236~~ 0.306	~~0.583~~ 0.340	~~0.347~~ 0.034

Wildlands also raised the issue of the permanence of the wetlands in the DOC-get land, arguing that once indigenous vegetation cover is achieved, these areas will likely revert to streams. I agree that under forest cover these areas would not be maintained as wetlands – they have formed due to dense grasses trapping sediment and creating saturated soils. Under increased shading, the grasses are unlikely to persist. However, if wetlands need to be maintained within the site to satisfy the ‘conservation enhancement’ requirement, these sites could be planted in native sward-forming hydrophytes which would likely preserve the wetland habitat for many years. In addition, it is highly likely that additional wetlands will form as a result of the reservoir flooding the gully floors. While we agree with the Wildlands assessment⁷ that the wetlands within the DOC-get land are not as high value as those in the Dutch Creek valley, the proposed restoration activities will improve their value, and in association with the new wetlands that will likely form on the lake margins, will provide habitat for indigenous wetland flora and fauna and form part of a well-connected landscape of forest, scrub, streams and the new lake.

5.0 Stream Length

Dr Storey has identified an error in our calculation of stream length lost at Dutch Creek. It is not clear how this error occurred, but it may have been that the original length calculation

⁶ Paragraphs 26 – 27 of the Wildlands evidence.

⁷ Page 36 of the Wildlands evidence.



was done using topographic data and this was not as accurate as it should have been. The situation is made difficult by the fact that the DOC land boundary no longer aligns with Dutch Creek, and instead the creek meanders in and out of DOC land. Regardless, our report clearly acknowledged that the aquatic values in the DOC-get land are lower than those in the DOC-give land. However, the Panel will weigh the overall merits of the proposal.

6.0 South Stream

RMA Ecology⁸ have recently undertaken an assessment of the southern stream (referred to as South Stream), which was not able to be assessed during the 2025 assessment. RMA Ecology found that the stream has a wetted width of 1–2 m and features a substrate of fine sediment, gravels, cobbles and bedrock. The Rapid Habitat Assessment scored 69.5, which equates to 'good' quality. The environmental DNA (eDNA) sampling revealed a lower fish diversity than what has been recorded in Middle Stream, but an 'excellent' Taxon-Independent Community Index (TICI) score. Overall, this additional data does not change our aquatic habitat assessment, and we acknowledge the points made by Dr Storey about the adequacy of that assessment. We reiterate that our assessment (and that of Dr Storey) is that stream values in the DOC-get land are lower than those in the DOC-give land and the Panel will need to weigh that against the increase in terrestrial ecological values.

7.0 Biodiversity Assessment

Wildlands undertook an assessment of the two sites against four ecological criteria (Representativeness, Diversity and Pattern, Rarity & Distinctiveness, and Ecological Context) and compared their findings to the assessment in our report. They generally agree with our assessment, which had been informed by the assessment of DOC's own experts (La Cock *et. al.*⁹) but was more conservative. There is a slight difference of opinion on the Diversity and Pattern criterion, which Wildlands rate as M/H (Moderate-High) for the DOC-give land (compared to M (Moderate) in our assessment) and M/H or H (High) under Scenario 2 for the DOC-get land (compared to H in our assessment). I consider this is a relatively minor difference and I accept that the vegetation on the DOC land is more floristically diverse, which may warrant an increase to M/H. However, I believe the score of H assigned to the DOC-get land is warranted due to the diversity of vegetation types, habitat, landform, geology and altitudinal range. It is also highly likely that there is equivalent or, at least, similar floristic richness in the DOC-get land, albeit suppressed by browsing. La Cock *et. al.*⁹ also note the presence of habitats such as dry faces, which are not present on the DOC-give land.

I note that the pasture areas did not contribute to the overall biodiversity value in the assessment, or the ratio of give to get, but with the proposed restoration works and the return to indigenous cover this additional 45 ha will represent a considerable increase in indigenous habitat when compared to the area being lost.

⁸ Kroos, H. 2026. Tukituki: Smedley Exchange Block – South Stream Supplementary Memo. RMA Ecology memorandum to Tukituki Water Security Ltd. 13p.

⁹ La Cock, G., Rogers, G., Gerbeaux, P., and Scrimgeour, J. 2015. Assessment of proposed land exchange between Ruahine Forest Park revocation land and proposed Smedley Exchange Block in relation to Ruataniwha Water Storage Scheme. Department of Conservation.



8.0 Proposed Conditions

DOC have proposed a set of conditions for the Panel to consider, should they grant permission for the land exchange to occur. Included in these conditions are requirements for an Ecological Restoration Plan (ERP), and a Pest Mammal Management Plan (PMMP).

Generally, I agree with the proposed ERP conditions (Conditions 25-31), but do not agree with the weed control target. Firstly, what constitutes a 'weed' needs to be defined. I suggest plants classified as pests in Table 2 of the Hawkes Bay Regional Pest Management Plan (RPMP)¹⁰ be used to define a 'weed' for the purposes of the ERP conditions. The requirement to control weeds to the level where no flowering or fruiting individuals remain is unreasonable in my opinion. The goal is to facilitate establishment of indigenous species across the site and protect existing indigenous habitat from pest plants. For all the pest plants identified within the site to date, this would require suppression only and, in some cases, (for example gorse if it is used as a nurse crop) control may not be attempted. However, I recommend that a pest plant control plan be developed as part of the ERP and I acknowledge that there may be some more aggressive species for which an eradication approach may be more appropriate.

The conditions requiring a PMMP (Conditions 32-37) are generally reasonable and represent good practice pest animal control. The targets set for individual species are best practice and achievable, provided a similar level of control is achieved by DOC in the neighbouring parts of the Gwavas Conservation area. Otherwise, constant reinvasion will jeopardise sustained control in the DOC-get land.

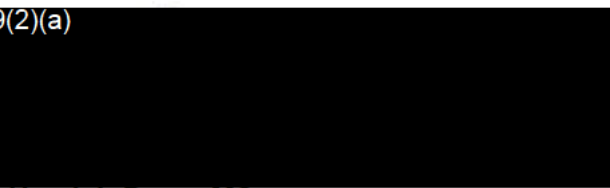
9.0 Closure

SLR's assessment of biodiversity values clearly expressed that there were 'unders and overs' of biodiversity values in the proposed exchange, particularly regarding aquatic values. However, I maintain that assuming the proposed management actions and robust conditions are implemented, there will be an overall conservation benefit from the proposal.

Regards,

SLR Consulting New Zealand Limited

9(2)(a)



Hamish Dean, MSc
Principal Ecologist

¹⁰Hawkes Bay Regional Pest Management Plan 2018 – 2038. Hawkes Bay Regional Council publication Number 5030. 102p.



Memo

To:	Mike Scott, Tukituki Water Storage Project	Job No:	2622
From:	Harrison Kroos, RMA Ecology	Date:	16 September 2026
cc:	Jeroen Lurling, RMA Ecology		
Subject:	Tukituki Water Security Project: Migratory longfin eel downstream trap and transfer at Waimea Community Dam, Tasman District.		

Dear Mike,

This memorandum summarises the results of the downstream trap and transfer programme at the Waimea Community Dam, Tasman District. Tukituki Water Security Limited (TWSL) have requested this information to inform its response to the Department of Conservation on the feasibility of downstream trap and transfer at the proposed Makaroro River dam.

1 Background and purpose

The Tukituki Water Security Project (TWSP), formerly the Ruataniwha Water Storage Scheme, is a consented water storage scheme in the Tukituki catchment, Central Hawke's Bay. It comprises a dam on the Makaroro River impounding a reservoir of approximately 372 ha, with a hydro-electric station at the toe of the dam and irrigation intakes downstream. RMA Ecology has been engaged by Tukituki Water Security Limited to prepare the Native Fish Monitoring and Relocation Plan (NFMRP) for the Project.

The dam will be a barrier to upstream and downstream fish migration. Condition 5 of Schedule 2a of resource consent AUTH-120423-03 requires a downstream eel trap and transfer programme under Project C of the Integrated Mitigation and Offset Approach, targeting migratory longfin eel (At Risk – Declining, Dunn et al. 2025) and shortfin eel. Spillway flows alone cannot provide downstream passage, because eel migration occurs in late summer and autumn when reservoir levels are lowest and spill is least likely. Passage through the outlet and turbine are not a downstream migration option as it carries a high mortality risk for large eels.

The Department of Conservation has questioned the feasibility of trap and transfer as the primary means of downstream passage. This memorandum provides information on the application of that method over two seasons at the Waimea Community Dam, a recently commissioned water supply dam and reservoir.

2 Waimea Community Dam trap and transfer

RMA Ecology operates the fish trap and transfer programme at the Waimea Community Dam, Tasman District, for Waimea Water Limited. Waimea Dam is the closest operational analogue available to us, as it is a recently commissioned water supply dam and reservoir where downstream trap and transfer of migratory longfin eel have been attempted over two consecutive autumn

seasons, using the method proposed for the Makaroro River dam. It provides data that are not otherwise available for a programme and structure of this type in New Zealand.

2.1 2025 season

Five large fine-mesh fyke nets were set for three consecutive nights close to the new moon on 29 April to 1 May 2025. They were checked daily, resulting in a total of three nights of trapping and 15 net lifts (trap nights) overall. Nets were set along the dam face and the shoreline nearby (**Figure 1**).

No longfin eels expressing migratory features were captured during the three days of fyke netting. Nine non-migratory longfin eels were captured, ranging from 600 mm - 1000 mm.

2.2 2026 season

Eight fine-mesh fyke nets were set for three consecutive nights close to the new moon, on and near the dam face on 23-26 March (**Figures 1 and 3**). This was repeated on 20-23 April and 18-21 May, providing a total of nine nights of trapping, and 72 net lifts (trap nights) overall.

A total of 39 longfin eels were captured in fyke nets. Two of these captured eels exhibited migratory characteristics (**Figures 2 and 3**) and were transferred to the release site below the dam.

Captured adult eels were assessed for the following migratory characteristics:

- The head becomes flatter and slenderer (bullet shaped);
- The lips become thinner;
- The pectoral fins, head and back darken;
- The belly lightens to a grey or silver colour; and
- The pectoral fins and eyes enlarge and become surrounded by a narrow (sometimes bluish) ring.

2.3 Feasibility of trap and transfer

Results from the 2026 Waimea Community Dam downstream trap and transfer programme demonstrate that migrant longfin eels can be captured and identified in a large water supply reservoir and transferred downstream of the dam.

There are no baseline fish metrics for eel populations above the dam, so it is not possible to estimate the proportion of downstream migratory eels that were captured and transferred during the programme.



Figure 1. Fyke net locations (red circles) at the Waimea Community Dam for the 2025 and 2026 seasons of the downstream trap and transfer program.



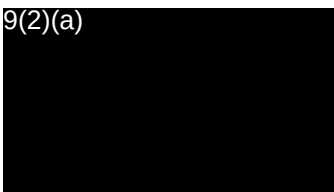
Figure 2. A migrating longfin eel trapped at within the reservoir of Waimea Community Dam and transferred downstream. This longfin eel exhibited a darker head and pectoral fins, and the eyes were enlarged and surrounded by a narrow blue ring.



Figure 3. A large migratory longfin eel caught in a fyke net (centre of image) set on the shoreline at Waimea Community Dam.

Yours sincerely,

9(2)(a)



Harrison Kroos

Ecologist¹

RMA Ecology Ltd

g:\shared drives\rma ecology main drive\rma ecology ltd\active projects\2622 tukituki wsp, hawkes bay\working\2622 eel trap and transfer from wcd memo.16september.draft.docx

¹ This report has been prepared for the benefit of our Client with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by RMA Ecology Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

Memo

To:	Mike Scott, Tukituki Water Security Limited	Job No:	2622
From:	Harrison Kroos, RMA Ecology	Date:	23 September 2026
cc:	Jeroen Lurling, RMA Ecology		
Subject:	Tukituki: Smedley Exchange Block – South Stream Supplementary Memo		

Dear Mike,

The Department of Conservation (DOC) is investigating the option of a land exchange under the Fast-track Approvals Act 2024 (FTAA) for 29.7 ha of DOC administered land which would be inundated by water as part of the proposed Tukituki Water Security Project (the Project). The area of land that may be available for exchange with the Department of Conservation is the “Smedley Exchange Block” (SEB; **Figure 1**). The exchange is subject to conclusion of negotiations with the landowner and to an evaluation of the ecological values of both blocks.

Kessels Ecology (2013) assessed the area of land proposed for exchange (the SEB) with DOC. A follow-up site visit was undertaken by SLR Consulting in October 2025 which included stream mapping, Rapid Habitat Assessments (RHA) and eDNA sampling.

Only three of the four streams in the SEB were viewed in 2025, and rapid habitat assessments were carried out for two of them (Middle Stream and Donovan Stream; **Figure 1**). None of the four streams have official names in the New Zealand topographical database so these have been labelled with contextual names for ease of reference.

Neither North Stream nor South Stream were viewed in 2025, and DOC has requested further information including:

- i. Fish species information for the North and South Streams; and,
- ii. Rapid Habitat assessments for the North and South Streams.

Only 60 m of the full 2,030 m length of the North Stream is within the SEB and it was decided by the applicant that this length of reach was insufficient for sampling and data collection to characterise this stream further.

This memorandum details the site investigations undertaken on 3 September 2026 by RMA Ecology Limited at the South Stream within the SEB. Assessments undertaken include a RHA Assessment, environmental DNA (eDNA) sampling and photopoints along the length of the stream within the SEB.

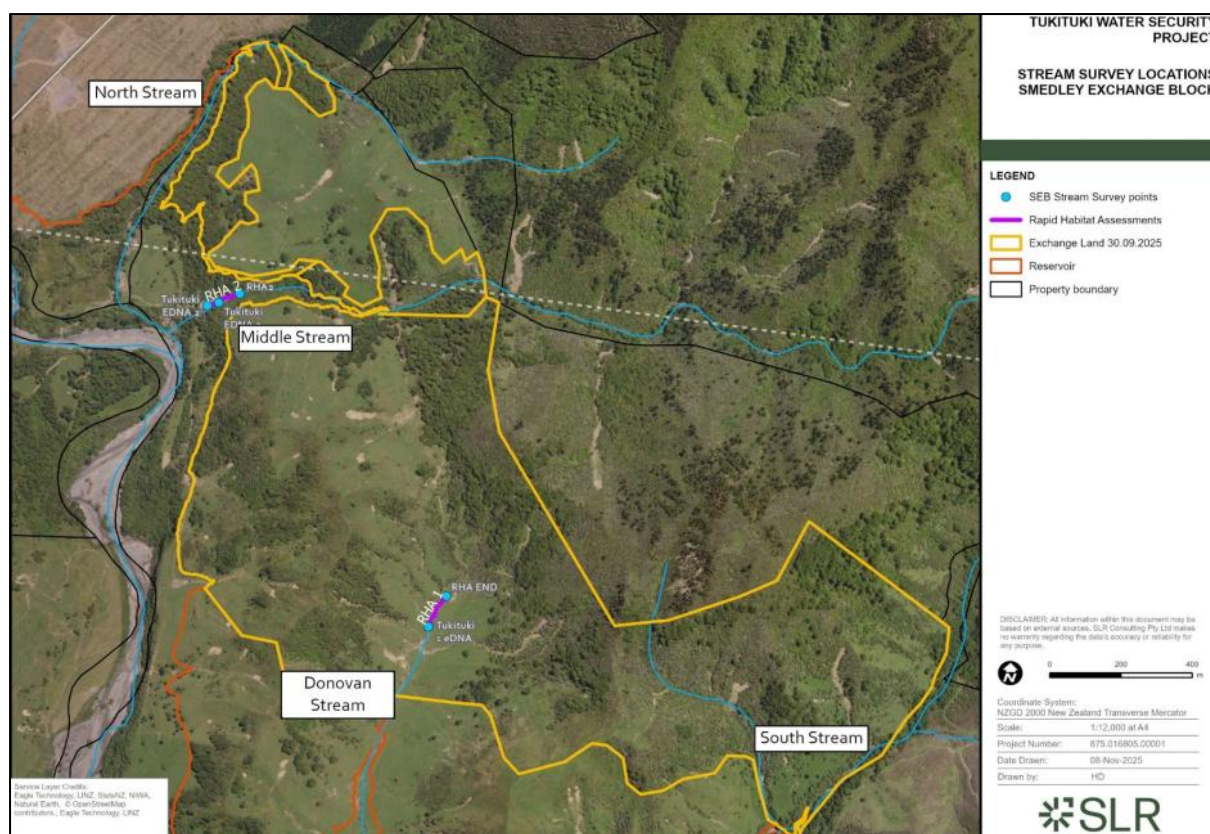


Figure 1. Streams (blue lines) in the SEB (amber outline polygon), with existing RHA and eDNA sample locations on Middle Stream and Donovan Stream. Figure provided by SLR.

1 South Stream Assessment

1.1 Stream description

The South Stream is the second largest of the four streams flowing through the SEB and had an average wetted width of 1.5-2 m at the time of the survey. The substrate was a mix of fine sediments, gravels, cobbles and bedrock. Most of the South Stream channel within the SEB was heavily shaded with indigenous trees and shrubs. One area, cleared for a farm road, was dominated by blackberry.

Approximately 70 m downstream of the South Stream's northernmost boundary within the SEB, the channel went dry, but a defined channel was still evident. At the southernmost extent of the SEB, South Stream converges with a larger stream, approximately 2-3 m in wetted width at the time of the survey. Throughout the SEB, three small flowing tributaries of the South Stream were noted.

The lower half of the South Stream within the SEB is within a well-defined and incised gully, ranging from 5 m to 10 m deep and 7 m to 15 m wide. At the upstream end of the gully section there were two smaller waterfalls (2 m and 1.5 m high) followed by one larger waterfall (4.5 m high; **Plate 1**) before levelling out into a shallower gradient with open floodplain for the remainder of the reach within the SEB (**Plate 2**).



Plate 1. The approximately 4 m high waterfall 400 m upstream in the SEB.



Plate 2. South Stream upstream of the waterfalls with a shallower gradient and open floodplain.

1.2 Rapid Habitat Assessment

The RHA was conducted at the lower-middle end of the stream across 100 m (**Plate 3; Figure 2**). The wetted width ranged from 1-1.5 m. Deposited sediments were relatively high within the narrow-gorge section where the RHA was conducted (around 60 % of the wetted width) however, factoring the whole reach of the stream within the SEB, deposited sediments would be considered moderate-low (15-20 %).

Substrate was predominantly gravel, cobble and bedrock. Where deposited sediments were lower, invertebrate and fish habitat was good with a range of habitat types present, including leaves, vegetation and woody debris for invertebrates, and woody debris, overhanging vegetation, boulders and cobbles for fish. The hydraulic heterogeneity for the RHA reach was high, with features such as pools, runs, riffles, waterfalls and small backwaters. This was representative of the whole reach within the SEB. Fish passage through the gorge was not physically assessed. However, eDNA samples were collected both upstream and downstream of significant fish barriers, including multiple waterfalls > 3 m in height.

Overall, the RHA scored 69.5 (**Appendix 1**) which rates as 'Good' quality (Clapcott *et al.* 2020).



Plate 3. South Stream within the SEB, approximately 200 m upstream of the SEB boundary and within the 100 m RHA reach.

1.3 eDNA and fish species

One six-replicate eDNA sample was collected from within the South Stream. Wilderlab generally recommend that all six replicates are taken at the same location. However, for the purposes of identifying potential fish passage barriers, and sampling a wider spatial area and range of habitats, eDNA replicates were evenly distributed across the length of the south stream.

Throughout the length of the South Stream within the SEB, only one species of fish was identified with the six replicate eDNA; Longfin eel (*Anguilla dieffenbachii*; At Risk – Declining¹), a native diadromous species (Table 1).

Table 1. Name, sampling replicate and locality of longfin eel detected within the South Stream with eDNA.

Scientific Name	Common Name	Sample Replicate	Locality
<i>Anguilla dieffenbachii</i>	Longfin eel (tuna)	740001 (rep 1)	10 m upstream SEB
<i>Anguilla dieffenbachii</i>	Longfin eel (tuna)	740003 (rep 3)	250 m upstream SEB; 125 m downstream 4 m waterfall
<i>Anguilla dieffenbachii</i>	Longfin eel (tuna)	740004 (rep 4)	370 m upstream SEB; 5m downstream 4 m waterfall

Longfin eel was the only fish species detected within the South Stream (Appendix 2). It was recorded in three of the six replicates, with eel DNA also returned at Genus and Order level in a fourth. No galaxiid species, including kōaro, and no bully species were detected in any replicate. Detection in three of six replicates is consistent with presence at low density. Smith et al. (2024) report an approximately 40 percent chance of a species being missed where a single replicate is used, which is the basis for the six-replicate protocol DOC requested.

Because the replicates were distributed along the reach rather than pooled at one point, the results can in principle be used to test whether the waterfalls act as a barrier to fish passage. No eel DNA, including at the genus level was detected above the large 4 m waterfall in replicates 740005 and 740006 (replicates 5 and 6; Figure 2). These results indicate that the larger waterfall acts as a natural fish passage barrier to the longfin eels present in the stream. eDNA replicate 740004 (replicate 4) is located 5 m downstream of the larger waterfall (4 m), but just upstream of the smaller 1.5 and 2 m high waterfalls, suggesting that eels are able to climb the two smaller waterfalls.

Of the approximately 750 m of South Stream within the SEB, this eDNA sampling suggests that only half (375 m) of the South Stream is accessible by longfin eels.

1.3.1 Taxon-Independent Community Index

Taxon-Independent Community Index (TICI) is a biotic index of riverine community health developed by eDNA-provider Wilderlab (Wilkinson *et. al.* 2024). It uses data on the sensitivity of a range of taxa to assess the ecological health of a waterway in a similar way to the Macroinvertebrate Community Index (Stark 1985). Although the scoring system of the two indices is not directly comparable, the TICI quality bands align with those used by the Macroinvertebrate Community Index (MCI).

¹ Dunn et al. (2025).

The six replicate eDNA samples collected in the South Stream returned TICl scores of 115.0 to 118.5 (Appendix 2), with a mean of 117.3. All six replicates fall within the 'Excellent' band, between the 77th and 82nd percentile of the national reference distribution, and all six are returned with a reliability rating of 'Very high' (425 to 590 contributing taxa per sample). The 'Excellent' rating indicates the stream has high ecological health, with a strong eDNA signature from sensitive species that survive only in clean ecosystems, and few pollution-tolerant species present. Excellent is the second highest rating on the six-tier scale, just short of an untouched, "Pristine" reference site.

The eDNA-derived MCI results returned hard-bottom MCI values of 126.3 to 139.3 (mean 132.4) and soft-bottom MCI of 121.4 to 137.6 (mean 127.7). These fall comfortably within the 'excellent' band, highlighting a very sensitive and intact aquatic ecosystem.

1.4 Summary of results against the conservation values criteria

The following summarises the September 2026 results against the four ecological criteria used in the SLR Land Exchange Assessment (SLR 2025) and in the Department's technical advice (Wildland Consultants 2026), so that they can be read alongside the assessments already prepared for Middle Stream and Donovan Stream. Ratings are a matter for the Department; the table records the evidence rather than assigning a score.

Table 2. September 2026 South Stream results summarised against the ecological criteria applied in the land exchange assessment.

Ecological criterion	Evidence from the September 2026 survey	Comment
Representativeness	RHA score 69.5, 'Good' band (Clapcott et al. 2020). First-order headwater stream, largely unmodified within the SEB, shaded by indigenous riparian vegetation over most of its length, with an incised gully, three natural waterfalls and a substrate of gravel, cobble and bedrock. The channel is intermittent in the upper reach within the SEB.	Comparable to Middle Stream; higher than Donovan Stream
Diversity and pattern	High hydraulic heterogeneity across the reach, with pools, runs, riffles, waterfalls and backwaters. Between 19 and 28 macroinvertebrate taxa contributed to the eDNA-derived community index in each replicate, including taxa with MCI sensitivity scores of 9 to 10 (Stenoperla, Zelandoperla, Ameletopsis, Zelolessica, Olinga, Orthopsyche, Coloburiscus, Austroclima, Nesameletus, Austroperla, Hydrobiosella, Hydrochorema, Edpercivalia). Fish diversity is low, with one species detected across six replicates.	Moderate for habitat and macroinvertebrates; low for fish
Rarity and distinctiveness	One At Risk fish species detected: longfin eel (At Risk – Declining, Dunn et al. 2025). No Threatened species detected. No At Risk fish species additional to those already recorded from Middle Stream and Donovan Stream.	Does not add to the At Risk species already recorded from the SEB streams
Ecological context	Three natural waterfalls within the SEB reach, the largest 4.5 m high, limit upstream fish access independently of the Project. South Stream	Not resolved by this survey; connectivity upstream and

	converges with a larger stream at the southern SEB boundary. The single fish species detected is diadromous and therefore depends on retained or reinstated access to the sea.	downstream of the SEB is outside the surveyed reach
--	--	---

2 Conclusion

The South Stream is in good physical and biological condition. The Rapid Habitat Assessment scored 69.5, within the 'Good' band (Clapcott et al. 2020), and all six eDNA replicates returned TICI scores within the 'Excellent' band, with a mean of 117.3. Habitat within the SEB reach is largely unmodified, shaded by indigenous riparian vegetation over most of its length, and hydraulically diverse.

Fish diversity is low. Longfin eel (At Risk – Declining, Dunn et al. 2025) was the only species detected, in three of six replicates. No galaxiid or bully species were detected. This is consistent with the stream's small size and first-order status, and with the three natural waterfalls within the SEB reach, the largest 4.5 m high, which limit upstream fish access independently of the Project.

Of the three SEB streams now assessed, South Stream returned the highest RHA and TICI scores and the lowest recorded fish diversity. Donovan Stream scored 45.5 ('Fair') on its RHA and 109.54 ('Good') on its TICI, and Middle Stream scored 68 ('Good') on its RHA and 116.09 ('Excellent') on its TICI.

These results respond to the two information gaps the Department identified for the South Stream: fish species information, and a Rapid Habitat Assessment (Wildland Consultants 2026). They allow the Diversity and Pattern and Rarity and Distinctiveness criteria to be assessed for the South Stream rather than left as unknown, and they support the Representativeness assessment.

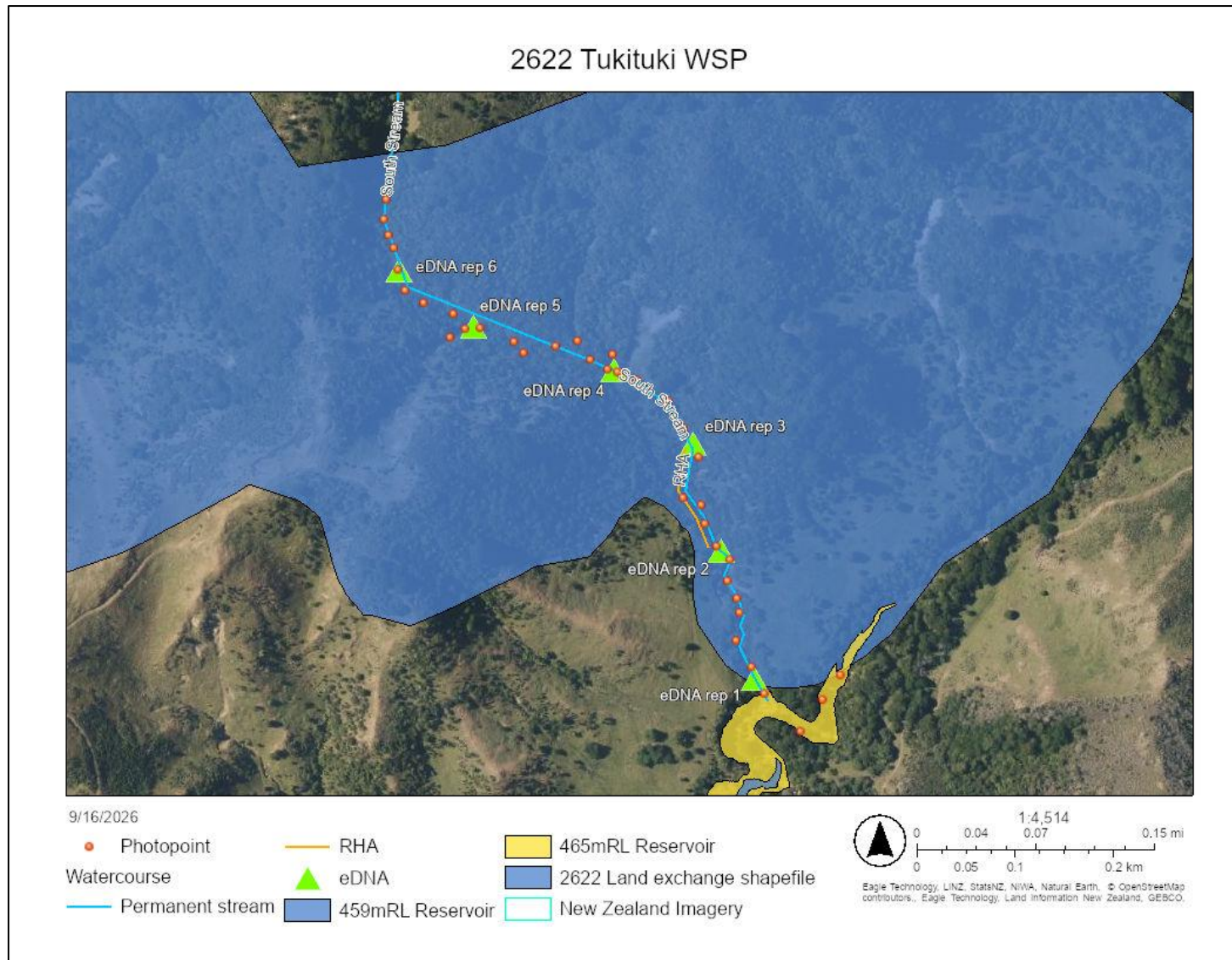


Figure 2. Location of eDNA samples, photopoints and the RHA collected on 3 September 2026 on the South Stream within the SEB.

Yours sincerely,

9(2)(a)

A large black rectangular redaction box covers the signature area.

Harrison Kroos

Ecologist²

RMA Ecology Ltd

g:\shared drives\rma ecology main drive\rma ecology ltd\active projects\2622 tukituki wsp, hawkes bay\working\2622 south stream supplementary memo.23september.draft.docx

² This report has been prepared for the benefit of our Client with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by RMA Ecology Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

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Appendix 1 – Rapid Habitat Assessment

"South Stream" 3/9/26

River Habitat Assessment (RHA) Field Recording Sheet

Habitat parameter	Condition category										SCORE
1. Deposited sediment	The percentage of the stream bed covered by fine sediment.										2
	0	5	10	15	20	30	40	50	60	≥ 75	
SCORE	10	9	8	7	6	5	4	3	2	1	
2. Invertebrate habitat diversity	The number of different substrate types such as boulders, cobbles, gravel, sand, wood, leaves, root mats, macrophytes, periphyton. Presence of interstitial space score higher.										8
	≥ 5	5	5	4	4	3	3	2	2	1	
SCORE	10	9	8	7	6	5	4	3	2	1	
3. Invertebrate habitat abundance	The percentage of substrate favourable for EPT colonisation, for example flowing water over gravel-cobbles clear of filamentous algae/macrophytes.										7
	95	75	60	50	40	30	25	15	5		
SCORE	10	9	8	7	6	5	4	3	2	1	
4. Fish cover diversity	The number of different substrate types such as woody debris, root mats, undercut banks, overhanging/encroaching vegetation, macrophytes, boulders, cobbles. Presence of substrates providing spatial complexity score higher.										8
	≥ 5	5	5	4	4	3	3	2	2	1	
SCORE	10	9	8	7	6	5	4	3	2	1	
5. Fish cover abundance	The percentage of fish cover available.										8
	95	75	60	50	40	30	20	10	5	0	
SCORE	10	9	8	7	6	5	4	3	2	1	
6. Hydraulic heterogeneity	The number of hydraulic components such as pool, riffle, fast run, slow run, rapid, cascade/waterfall, turbulence, backwater. Presence of deep pools score higher.										9
	≥ 5	5	4	4	3	3	2	2	2	1	
SCORE	10	9	8	7	6	5	4	3	2	1	
7. Bank erosion	The percentage of the stream bank recently/actively eroding due to scouring at the water line, slumping of the bank or stock pugging.										9
Left bank	0	≤ 5	5	15	25	35	50	65	75	> 75	
Right bank	0	≤ 5	5	15	25	35	50	65	75	> 75	
SCORE	10	9	8	7	6	5	4	3	2	1	
8. Bank vegetation	The maturity, diversity and naturalness of bank vegetation.										9
Left bank AND Right bank	Mature native trees with diverse and intact understorey	Regenerating native or flaxes/sedges/tussock > dense exotic	Mature shrubs, sparse tree cover > young exotic, long grass	Heavily grazed or mown grass > bare/impervious ground							
SCORE	10	9	8	7	6	5	4	3	2	1	
9. Riparian width	The width (m) of the riparian buffer constrained by vegetation, fence or other structure(s).										2.5
Left bank	≥ 30	15	10	7	5	4	3	3	1	0	
Right bank	≥ 30	15	10	7	5	4	3	2	1	0	
SCORE	10	9	8	7	6	5	4	3	2	1	
10. Riparian shade	The percentage of shading of the stream bed throughout the day due to vegetation, banks or other structure(s).										7
	≥ 90	80	70	60	50	40	25	15	10	≤ 5	
SCORE	10	9	8	7	6	5	4	3	2	1	
TOTAL	(Sum of parameters 1-10)										69.5

constrained by narrow gully incision in rock.

Appendix 2 – eDNA results (Wilderlab comprehensive analysis)

Full eDNA results are available on request.



CERTIFICATE OF ANALYSIS



Report ID: WLM615264_260917

Date Generated: 2026-09-17

Client name: Harrison Kroos

Client Organisation: RMA Ecology

Client Email: harrison.kroos@rmaecology.co.nz, liz.ussher@rmaecology.co.nz

Job Number: 615264

Assay Panel: Comprehensive freshwater panel (NZ)

Sample Receipt Date: 2026-09-07

Testing Period: Testing was completed between 2026-09-07 and 2026-09-16. Date of analysis is available on request

Client Job Reference: NA

CLIENT SAMPLE INFORMATION

UID	Sample ID	Collection date	Latitude	Longitude	Environment type	Volume filtered (mL)	Deployment duration (h)
740005		2026-09-03	-39.760688	176.30089	River/Stream		
740006		2026-09-03	-39.760688	176.30089	River/Stream		
740001		2026-09-03	-39.760688	176.30089	River/Stream		
740002		2026-09-03	-39.760688	176.30089	River/Stream		
740003		2026-09-03	-39.760688	176.30089	River/Stream		
740004		2026-09-03	-39.760688	176.30089	River/Stream		

METHODS
Analyses were carried out based on the methods described in the [Wilderlab metabarcoding methods technical note](#)

TEST RESULTS
The full [eDNA test results](#) have been stored in a cloud-based file (NB: .xlsx file will auto-download). Please note that this link is permanent. The data stored at the link will not change, ensuring integrity and consistency of the results.

UID	TICI Version	Score ¹	Rating ²	Quantile ²	No. of Indicators ^{2,3}	Reliability ^{2,3}
740005	Riverine V1	114.84	Excellent	0.76	507	Very high
740006	Riverine V1	117.52	Excellent	0.79	427	Very high
740001	Riverine V1	116.76	Excellent	0.78	543	Very high
740002	Riverine V1	118.35	Excellent	0.82	544	Very high
740003	Riverine V1	117.89	Excellent	0.8	593	Very high
740004	Riverine V1	117.49	Excellent	0.79	551	Very high

¹ The TICI score is only valid for the specific time and place at which the sample was taken. Note that TICI scores can vary over small spatial scales and fluctuate over time due to external factors such as rainfall and nutrient input (Drysdale et al., 2023)

² Out of scope of ISO 17025 accreditation

³ The TICI measurement uncertainty is a function of the number of indicator sequences found in the sample. Note that in the original dataset

Job Number: 615264

IANZ accreditation number: 1470

Page 1 of 2

Indicators:

UID	Indicator	Version	Value	Quantile	Band	Ncontributors	Reliability	Details	No
740001	TICI	Riverine V1	117.02	0.79	Excellent	538	Very high		
740002	TICI	Riverine V1	118.46	0.82	Excellent	542	Very high		
740003	TICI	Riverine V1	118	0.81	Excellent	590	Very high		
740004	TICI	Riverine V1	117.59	0.8	Excellent	549	Very high		
740005	TICI	Riverine V1	115.04	0.77	Excellent	503	Very high		
740006	TICI	Riverine V1	117.65	0.8	Excellent	425	Very high		
740001	HBMCI	Q326	132.8	0.84	A	25	Very high	Platyhelminthes(3	
740002	HBMCI	Q326	128.89	0.79	B	27	Very high	Ostracoda(3);Plat	
740003	HBMCI	Q326	139.29	0.95	A	28	Very high	Amphipoda(5);Pla	
740004	HBMCI	Q326	137.6	0.93	A	25	Very high	Amphipoda(5);Pla	
740005	HBMCI	Q326	129.57	0.8	B	23	High	Platyhelminthes(3	
740006	HBMCI	Q326	126.32	0.76	B	19	Average	Platyhelminthes(3	
740001	SBMCI	Q326	129.6	0.92	B	25	Very high	Platyhelminthes(0	
740002	SBMCI	Q326	124.23	0.81	B	26	Very high	Ostracoda(1.9);Pl	
740003	SBMCI	Q326	137.64	0.99	A	28	Very high	Amphipoda(5.5);I	
740004	SBMCI	Q326	128	0.89	B	25	Very high	Amphipoda(5.5);I	
740005	SBMCI	Q326	125.04	0.83	B	23	High	Platyhelminthes(0	
740006	SBMCI	Q326	121.37	0.77	B	19	Average	Platyhelminthes(0	

eDNA signatures for fish:

Sequence	Target	ScientificName	Rank	TaxID	CommonName	Group	74000	74000	74000	74000	74000	74000
TCAACCTTA ^{RV}		Anguilla dieffenbachii	species	61127	Longfin eel; tuna; kūwharuwharu; rehere Fish	Fish	1639	0	0	4909	0	0
TTTAGACAA ^{WV}		Anguilla dieffenbachii	species	61127	Longfin eel; tuna; kūwharuwharu; rehere Fish	Fish	1165	0	1468	2049	0	0
CACCGCGGT ^{LX}		Anguilla dieffenbachii	species	61127	Longfin eel; tuna; kūwharuwharu; rehere Fish	Fish	0	0	0	1726	0	0
TCTAGCTGG ^{CI}		Anguilla dieffenbachii	species	61127	Longfin eel; tuna; kūwharuwharu; rehere Fish	Fish	188	0	0	125	0	0
TCAACCTTA ^{RV}		Anguilla dieffenbachii	species	61127	Longfin eel; tuna; kūwharuwharu; rehere Fish	Fish	0	0	0	12	0	0
CACCGCGGT ^{LX}		Anguilla	genus	7935	Eels	Fish	0	0	0	717	0	0
CACCGCGGT ^{LX}		Anguilla	genus	7935	Eels	Fish	0	0	0	94	0	0
TCAACCTTA ^{RV}		Anguilla	genus	7935	Eels	Fish	0	0	0	52	0	0
TCAACCTTA ^{RV}		Anguilliformes	order	7933	Eel; tuna	Fish	0	0	0	609	0	0

Email Memorandum

To	Mike Scott – Tukituki Water Security Project
From	Rebecca Mackenzie
Date	30 September 2026
Subject	DOC Land Parcels - Measurements

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As requested, we have reviewed the measurements to attempt to identify the now clarified river abutting boundary with the “Makaroro braided river” for the two DOC land parcels (Land Parcel A & F).

Please note that these results are based solely on GIS and aerial imagery analysis available. LINZ river and streams dataset: [NZ River Centrelines \(Topo, 1:50k\) | LINZ Data Service](#)

These are two parcels of DOC land (impacted by TWS) that are located adjacent to the Makaroro River hydro parcel. The extent to which these two parcels of land adjoin the Makaroro River hydro parcel are shown in Figures 1 and 2 below.

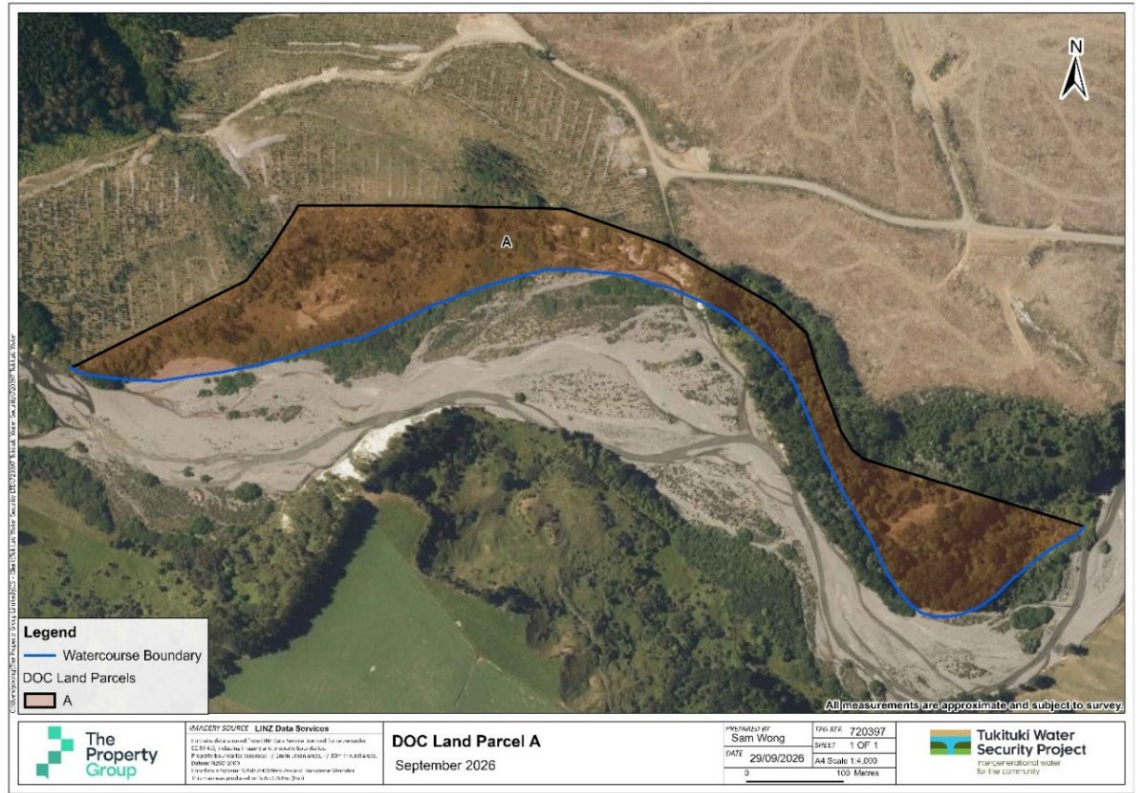


FIGURE 1: DOC LAND PARCEL A, SEPTEMBER 2026

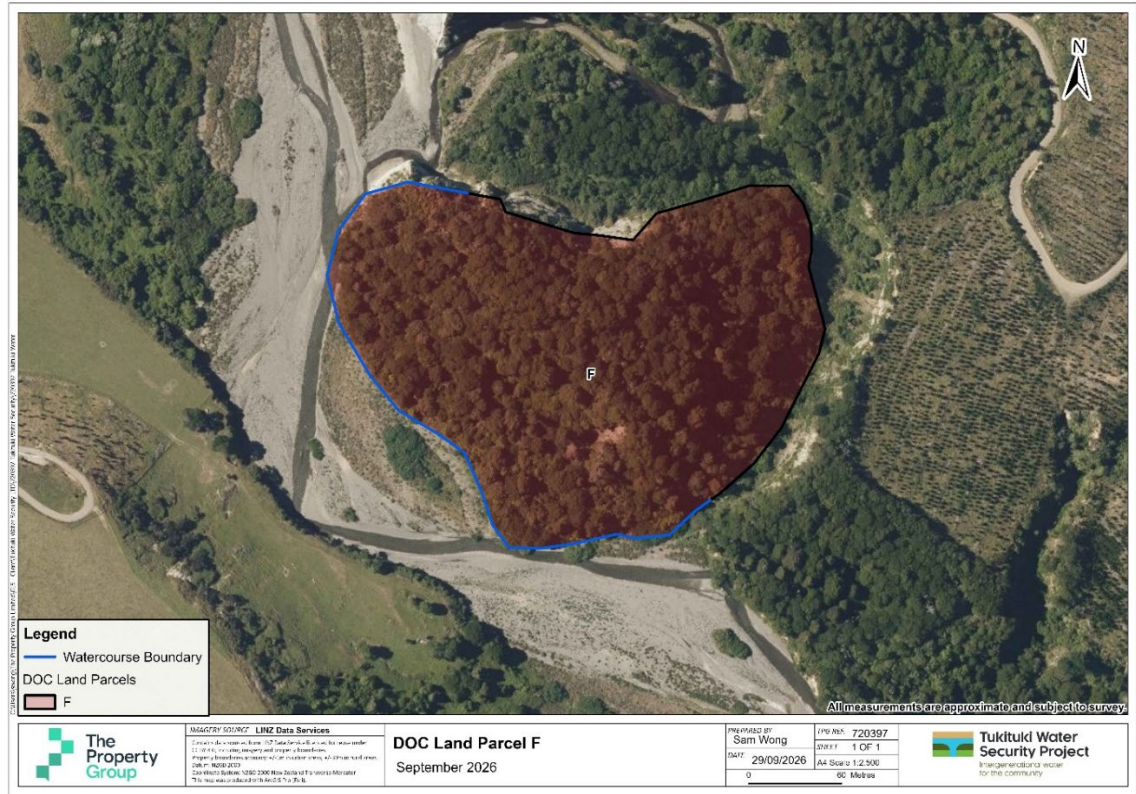


FIGURE 2: DOC LAND PARCEL F, SEPTEMBER 2026

In relation to each area of land, it is important to note following.

DOC Land Parcel A

It appears that two short sections of DOC Land Parcel Area A (refer Figure 1 below) are located within the riverbed of the Makaroro River. However, the aerial plans show that the main river channel is not located within these areas (DOC Land Parcel Area A), and these areas appear to be dry riverbed, with the exception of a stream channel that looks to joins the main river channel outside of this land parcel.

DOC Land Parcel F

There may be a length of some approximately 40-50m where DOC Land Parcel F could directly abut or adjoin the main river channel, however this is challenging to accurately determine due to the dense forestry cover and canopy in areas on Land Parcel F which 'overhang' the boundary.

However, it is important to note that Land Parcel F is considered to be distinct from the Makaroro River. This is supported by early depictions of Land Parcel F on survey plans which show this land parcel is being **distinct** from the Makaroro River.

An example of this is SO 7439 dated January 1979 shown in snip below. This is a plan of Section 8 Block IX Wakarara SD, which is located on the opposite side of the Makaroro River from Land Parcel F. We can see from this survey that Land Parcel F has been shown *distinct* from the Makaroro Riverbed.

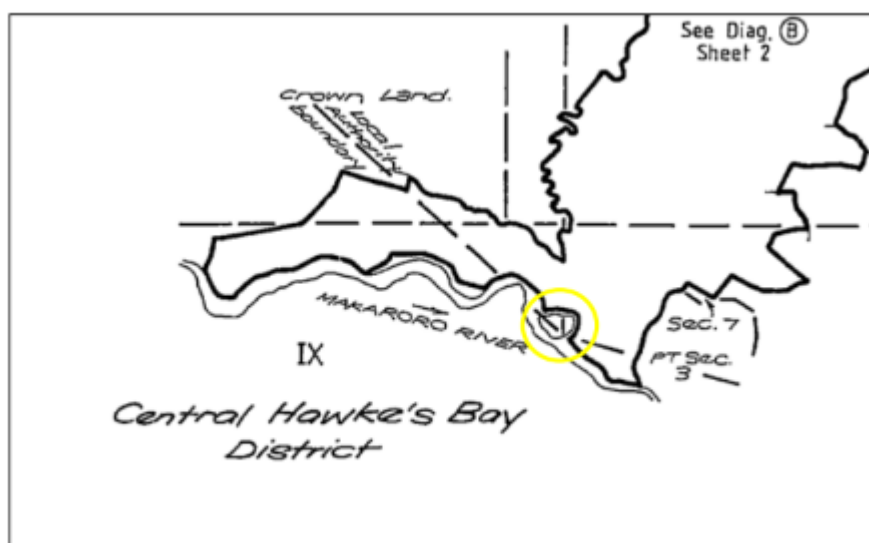


EXTRACT FROM SO 7439 WITH THE PROPERTY CIRCLED IN YELLOW.

Further to that, there is a challenge of accurately measuring any length or area in relation to Land Parcel F, as Land Parcel F has not been defined as to survey. It is not a separately defined parcel of land in the LINZ cadastral system, rather it is **depicted** as being **distinct** from the Makaroro Riverbed on various survey plans over time.

That 'depiction' is shown in GIS on aerial imagery, but it is only that; a depiction of a land area and not a surveyed land parcel and area.

An example of this is SO 10158 shown in snip below. This was a Crown Forest Plan certified correct for the purposes of the Crown Forest Assets Act 1989 on 16 May 1991. What we refer to as DOC Land Parcel F, was not taken for Crown Forest, but **has been depicted as being distinct from the Makaroro River**. This is shown outlined in yellow in the snip below.



EXTRACT FROM SO 10158.

The more recent survey plans over time continue to show the same depiction of DOC Land Parcel F and also continue to show this as being distinct from the Makaroro River.

It is that 'depiction', not a surveyed parcel of land, that has been brought forward into GIS and is that which approximate measurements can be taken. However, they are approximate at best.

Tukituki Water Security Project: Archaeological Assessment

Proposed solution for water storage and water security in Central Hawke's Bay

Report prepared for: Tukituki Water Security Limited



Report prepared by: Wikitoria Moore (MArchP) and Stella August (MArchP)

Reviewed by: Elizabeth Pishief (PhD)



One of the native trees adjacent to the Makaroro River that will be flooded if the proposed Tukituki Water Security Project (TWSP) proceeds if the dam and reservoir are created. S August, July 2026.

Executive Summary

The Tukituki Water Security Project (TWSP) is a catchment-scale development that will create a water storage reservoir to enable regional water security and sustainability. The project will require the installation of major infrastructure and will have effects on many aspects of the environment and community.

The project is located in the Makaroro, Waipawa, Tukituki and Papanui Stream catchments stretching from the base of the Ruahine Ranges to the lower reaches of the Tukituki River. The TWSP is a revised and improved version of the Ruataniwha Water Storage Scheme (RWSS).

Tukituki Water Security Ltd (TWSL) applied to the Ministry for the Environment (MfE) in May 2025 for the TWSP to proceed under the Fast-track Approvals Act (FTAA) and to Department of Conservation (DOC) to use the FTAA to exchange 29.7 ha of DOC land that sits within the dam footprint. All the documentation associated with these applications can be found on the following websites respectively; (<https://environment.govt.nz/acts-and-regulations/acts/fast-track-approvals/fast-track-projects/tukituki-water-security-project/> and <https://www.fasttrack.govt.nz/projects/tukituki-water-security/land-exchange-application>).

It has been over a decade since much of the documentation for the RWSS was produced. This archaeological assessment addresses several key challenges that have arisen in the years since the original RWSS application and the present TWSP.

- i) Significant technological advancements have occurred over the years particularly around Geographic Information System (GIS) and the use of spatial data. This assessment will briefly review historic aerial photographs and LiDAR around the dam and reservoir and zones A, B, M and N, with particular focus on the alteration to the primary distribution network of pipelines.
- ii) Due to their inaccessibility, the two additional parcels of land ('island' and Donovan's Gully parcels) will also be reviewed spatially.
- iii) Heritage New Zealand do not accept archaeological assessments for authority applications that are more than five years old. This archaeological assessment can be used in conjunction with Clough's assessment if HBCWT intend to apply for an archaeological authority for the TWSP.

The purpose of this archaeological assessment was to:

- Undertake a brief spatial analysis of the TWSP using recent technology.
- Desktop review of dam, reservoir, Zones M and N and the two additional parcels of land for archaeological sites.
- Conduct necessary field survey, ground-truthing and consultation with tangata whenua.
- Detail findings and make recommendations in accordance with statutory requirements.

No archaeological sites were found from the review of spatial information or field survey. We did, however, find several cultural sites that are adjacent to the proposed alteration of the primary distribution network. On reviewing the wider project area, there is a likelihood of unrecorded archaeological sites and subsurface archaeology, partially intact archaeological materials and evidence below the ground. The likely impact or effect is damage or destruction to archaeological and/or cultural sites.

The purpose of this archaeological assessment is to evaluate the effects of the TWSP on the archaeology within the project area. The parameters constraining this assessment are; a brief review using GIS and spatial information of the area around the dam and reservoir including the 'island' and 'Donovan's Gully' parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed up with consultation and field survey. The recommendations from this assessment are in addition to the recommendations proposed by Bickler and Clough (2013).

It is recommended that:

- An archaeological authority is applied for under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014 to minimise delays should archaeological materials or remains be discovered during work associated with the TWSP;
- An archaeological management plan is prepared for the TWSP to guide and manage the process if archaeological materials or remains are uncovered during work associated with the TWSP;
- Any sub-surface archaeological features or material encountered are investigated by an archaeologist using accepted archaeological methods;
- Any taonga tūturu encountered are reported to the hapū and then registered with the Ministry for Culture and Heritage within 28 days of completing the fieldwork;
- Archaeological material that will provide information about the approximate age of the site is sampled and sent away for C14 analysis;
- Archaeological assessments be undertaken in Zones N and M along the water distribution network (pipelines, headraces, canals and any other associated infrastructure) once the design has been finalised
- The proposed alteration to the primary distribution network in Zone A is at least 50 m from the SASM identified in this assessment (SASM number to be confirmed);
- Earthworks, for the alteration to the primary distribution network in Zone A, near or in sites of cultural significance, be monitored for archaeological materials or remains by a suitably qualified archaeologist and a cultural monitor, as appropriate;
- Reports are prepared by a suitably qualified person every 12 months during the TWSP to update HNZPT and Tangata Whenua on progress and the effects of the project on the archaeology in the project area.
- Develop and maintain meaningful relationships and communication with Tangata Whenua regarding the ongoing management of their cultural heritage.

Contents

Executive Summary	2
Contents	4
Introduction	7
Statutory Requirements	13
Methodology	15
<i>Geographic Information System (GIS) and spatial information</i>	15
<i>Desktop research</i>	16
<i>Consultation</i>	16
<i>Field Survey</i>	16
Physical Environment or Setting	18
<i>Makaroro River Catchment – Dam and Reservoir Area</i>	18
<i>Ruataniwha Plains – Zones A and B</i>	20
<i>Wider Plains – Zones N and M</i>	20
Historical Background	22
<i>Māori History</i>	22
<i>History after European arrival</i>	26
Previous Archaeological Work	32
<i>Archaeological survey</i>	32
<i>Archaeological research</i>	36
<i>Development-driven archaeology</i>	38
Results	39
<i>Desktop Review of Spatial information</i>	39
<i>Field Survey</i>	41
<i>Overview of Spatial information</i>	53
Constraints and Limitations	57
<i>Project Scale</i>	57
<i>Access</i>	57
<i>Vegetation</i>	57
<i>Methodology</i>	57
<i>Activities</i>	57
<i>Values</i>	58
Archaeological and Other Values	59
<i>Archaeological Values</i>	59
<i>Other Values</i>	64
Assessment of Effects	65
Further Considerations	69
<i>Site Management</i>	69
<i>Analysis, Collections Management and Report Writing</i>	69
Conclusion	70
Recommendations	71
References	72
Appendix	75

List of Figures

Figure 1 Map of the Tukituki Water Security Project (TWSP). Source: https://www.tukitukiwater.co.nz/about/the-project .	8
Figure 2 Created image of the proposed Makaroro dam and reservoir. Source: https://www.tukitukiwater.co.nz/about/the-project .	9
Figure 3 The scale of the Tukituki Water Security Project (TWSP) showing the dam and construction area, the reservoir (465 m above sea level) and the proposed Alteration to the primary distribution network of pipelines on a Google Terrain basemap.	18
Figure 4 Snip of map showing the elevation and terrain along the Makaroro River as it flows out of the Ruahine Forest Park. Sourced by W Moore from en-nz.topographic-map.com , 24 July 2026.	19
Figure 5 Snip of map showing the elevation and terrain of the wider Ruataniwha Plains area. Sourced by W Moore from en-nz.topographic-map.com , 24 July 2026.	20
Figure 6 Image taken facing northeast overlooking part of the Makaroro River and adjacent land that will be flooded by the reservoir. The photo shows the cutover from recent forest harvest, existing commercial forest, remnant native bush surviving in river and tributary gullies, the location of Yeoman's mill (river flat far right in image), the Wakarara ranges covered in mature native vegetation on the skyline and evidence of pastoral farming in the foreground. Source: W Moore.	21
Figure 7 Map of Hawke's Bay showing key locations and rivers. Waipawa River can be seen in the bottom left of the image. Map produced by McIvor in Allen et al (2024).	22
Figure 8 Map of recorded archaeological sites in Heretaunga and the six polities identified by Allen in 1994. Wetlands and lakes as they existed circa 1500 to 1870 CE. Map produced by McIvor for Allen et al (2024:57).	23
Figure 9 Close up of the Waipukurau Block from Map showing from McLean's Purchases 1851. Sourced from MTG Hawke's Bay Archives Online Collection (VN 71728).	25
Figure 10 Painting by Joseph Rhodes, circa 1858 of Waipukurau Pā. Source: ATL.	25
Figure 11 Snip of map titled Map of the Province of Hawke's Bay New Zealand, compiled and drawn from official sources by A. Koch, Wellington, dated April 1874. The red arrow indicates the Tikokino Native Reserve and the shading indicates native bush. Sourced from MTG Hawke's Bay (VN 64707).	27
Figure 12 Snip of map titled Map of Patangata County, Tamatea Tribal District circa 1927 showing the Tikokino Native Reserve area indicated with the red arrow. Unlike previous maps of the Tikokino Native Reserve, this map has blocks and titles. Source: Brian Morris, 2026.	27
Figure 13 Pukekaihai pā, mid-20th century. Source: CHB museum.	33
Figure 14 A 1952 aerial image (Crown_230_1993_3) of Te Moana-i-rokia pā, Hatuma Road. Source: Retrolens.	33
Figure 15 Aerial photograph looking northeast at Moana-i-rokia pā (U23/3) taken in 1990. Source: Allen (1994).	34
Figure 16 A 1943 aerial image (Crown_258_H_28) of Kaitoroa pā, Lindsay Road. Source: Retrolens.	34
Figure 17 Photograph of pits taken by Walton in September 2002. Source: ArchSite.	35
Figure 18 Image from Allen (1992:19) showing the pā in Hawke's Bay.	36
Figure 19 Aerial photograph of Pariokoro Pā (V22/273; facing north) on the southern bank of the Waipawa River, approx. 1800m northwest of its confluence with the Tukituki River. Source: Allen, 1994.	37
Figure 20 Aerial photograph of Tukipoho pā (V22/60; facing northwest) overlooking the Waipawa River in 1990. Source: Allen, 1994.	37
Figure 21 Looking north from Pukekaihai pā towards Mount Vernon. Source: https://locales.nz/projects/nga-ara-tipuna .	38
Figure 22 Approximate locations of the 'island' and Donovan's Gully' parcels (orange polygons) that were reviewed for archaeological evidence. The blue line indicates the 465m contour. Image created in QGIS; ESRI Satellite basemap.	39

Figure 23 The 'island' parcel can be seen on the right-hand side of the photograph (looking north), the Makaroro River in the foreground. Source: S August.	40
Figure 24 Retrolens aerial photograph from 1951 (Crown_541_1712_24) of the 'island' parcel of land (orange) that is to be included in the land exchange. The blue line indicates the 465m contour. Image created in QGIS.	40
Figure 25 LiDAR imagery of the approximate location of the 'Donovan's Gully' parcel (orange). The blue line indicates the 465m contour line. Image created in QGIS.	41
Figure 26 Snip of the locations of SASM 45, 46 and 47 from Central Hawke's Bay District Plan. Source: www.eplan.chbdc.govt.nz/	42
Figure 27 View south at the urupā Brian was aware of, enclosed by a one-wire fence on a river terrace, below the terrace Makaroro Road is on. Source: S August.	42
Figure 28 Image taken facing southwest showing a close up of the urupā. It is hard to distinguish, but there looks to be a headstone which has been knocked over near the middle of the urupā. Source: W Moore.	43
Figure 29 Locations of the three SASMs (pink triangles), photo locations (white photo icons) and location of urupā identified by Brian Morris (red polygon), along Makaroro Road and overlooking the Waipawa River. The proposed alteration to the primary distribution network of pipelines is indicated by the thick white line through the image. Image created in QGIS; ESRI Satellite basemap.	43
Figure 30 Snip of 1952 Retrolens image (Crown_541_1717) showing the locations of two cemetery (indicated by two red arrows) on either side of Makaroro Road.	44
Figure 31 Image showing the sites of cultural significance, 465 m contour line and archaeologist tracking during the field visit on 15 July 2026.	45
Figure 32 LiDAR of Area 1 (purple polygon) highlighting the two cone-shaped hills. The blue line indicates the 465m contour line. Image created in QGIS.	46
Figure 33 Image taken facing north showing the undulating landscape and vegetation as well as the two cone-shaped hills (left of two people) with the Makaroro River in the background. Source: S August.	47
Figure 34 Image taken facing northeast from the upper terrace looking down at Area 1, the two cone-shaped hills separated by a narrow saddle. Source: W Moore.	47
Figure 35 Image taken facing north standing in the southeastern corner showing the top of the largest cone-shaped hill. Source: W Moore.	48
Figure 36 Image taken facing northeast standing on top of the largest cone shaped hill. Wikitoria is standing at northeastern corner of the hill. There are two quite flat areas here. Source: S August.	48
Figure 37 Image taken facing north standing on top of the largest cone shaped hill. The ranging pole is at the back of the depression. Source: S August.	49
Figure 38 Image taken facing northwest standing on top of the smallest coned-shaped hill showing how flat the top is. Source: S August.	49
Figure 39 Image taken facing northeast with the depression in the foreground. The small cone-shaped hill and saddle can be seen in the background. Source: S August.	50
Figure 40 Image taken facing north looking across the Makaroro River showing the vegetation in the area. Source: W Moore.	51
Figure 41 Image taken facing east showing the vegetation and survey conditions in the area. Source: S August.	52
Figure 42 Image taken facing southeast showing the riverbed and area immediately adjacent to the Makaroro River. Source: W Moore.	52
Figure 43 Image taken facing west showing what the riverbed looked like and a waterfall in the background. Source: W Moore.	53
Figure 44 Overview of archaeological and cultural findings within the TWSP area.	54
Figure 45 Recorded archaeological sites from ArchSite superimposed on LiDAR in part of Zone M. The green arrows indicate sites where their locations are not accurate. The orange arrows indicate sites that are much larger than the site polygons suggest.	55
Figure 46 Map showing the proposed Alteration to Designation (yellow line) and the Designation CHBDC-72 (orange line) of the Primary Distribution System for the TWSP. Provided by P McKay, 2026	65

Introduction

Heritage Services Hawkes Bay (HSHB) was engaged to undertake this archaeological assessment by Philip McKay (Mitchell Daysh) on behalf of Tukituki Water Security Limited (TWSL) in April 2026.

Separate from TWSL, is the Hawke's Bay Water Community Trust (HBWCT) that has been formed as a partnership between mana whenua, the Central Hawke's Bay District Council and water users, to advocate for water security for the community and future citizens of Hawke's Bay. The objective of the Hawke's Bay Water Community Trust (HBCWT) is to "retain a strategic water storage opportunity in the Tukituki catchment to provide water security for environmental, community, social and economic activity, in the face of climate change and population growth which is increasing pressure on the water resource".

The HBWCT was formed from a group of local residents and community members who united in 2020 to rescope the needs of the Tukituki catchment and develop a strategy to help provide water security for the region. The 2021 Lewis Tucker rescoping report concluded that water storage at the Makaroro River site was the most compelling solution to provide water security for the region on environmental, economic and hydrological grounds. The report also acknowledged the proposed RWSS distribution network may need to be reconfigured, to ensure water gets to the targeted, potential high land use locations of demand.

The TWSP is a community project being developed by Tukituki Water Security Ltd (TWSL), a privately owned company. The RWSS resource consents and intellectual property are now owned by the HBCWT to ensure this information is owned by the community. HBCWT will licence to TWSL the use of the intellectual property for the development and operation of the project.

A solution for water storage and water security in Central Hawkes Bay was first proposed in the early 2000s with the Ruataniwha Water Storage Scheme (RWSS). The Tukituki Water Security Project (TWSP) is a revised version of the RWSS (<https://www.tukitukiwater.co.nz/>). The project is located in the Makaroro, Waipawa, Tukituki and Papanui Stream catchments stretching from the base of the Ruahine Ranges to the lower reaches of the Tukituki River.

The RWSS was a large, water storage scheme proposed by Hawke's Bay Regional Investment Company Limited (HBRIC) to provide irrigation water for the Ruataniwha Plains. This involved constructing a dam in the Makaroro River to create a reservoir and the infrastructure associated with the distribution of that water. Eighteen resource consents were issued to the HBRIC following a Board of Inquiry hearing process (June 2014) and a High Court appeal (June 2015). The RWSS was not progressed after 2018 when a Supreme Court decision determined the Director General of Conservation was not authorised to grant the necessary land exchange arrangement.

An application was made to the Hawkes Bay Regional Council (HBRC), Central Hawkes Bay District Council (CHBDC) and Hastings District Council (HDC) to extend the lapse period of the consents with an extension being granted to 30 June 2030. TWSL now wish to progress the TWSP as the legal obstacle surrounding the land exchange can be avoided under Section 42(4)(f) of the Fast-track Approvals Act 2024 (FTAA).

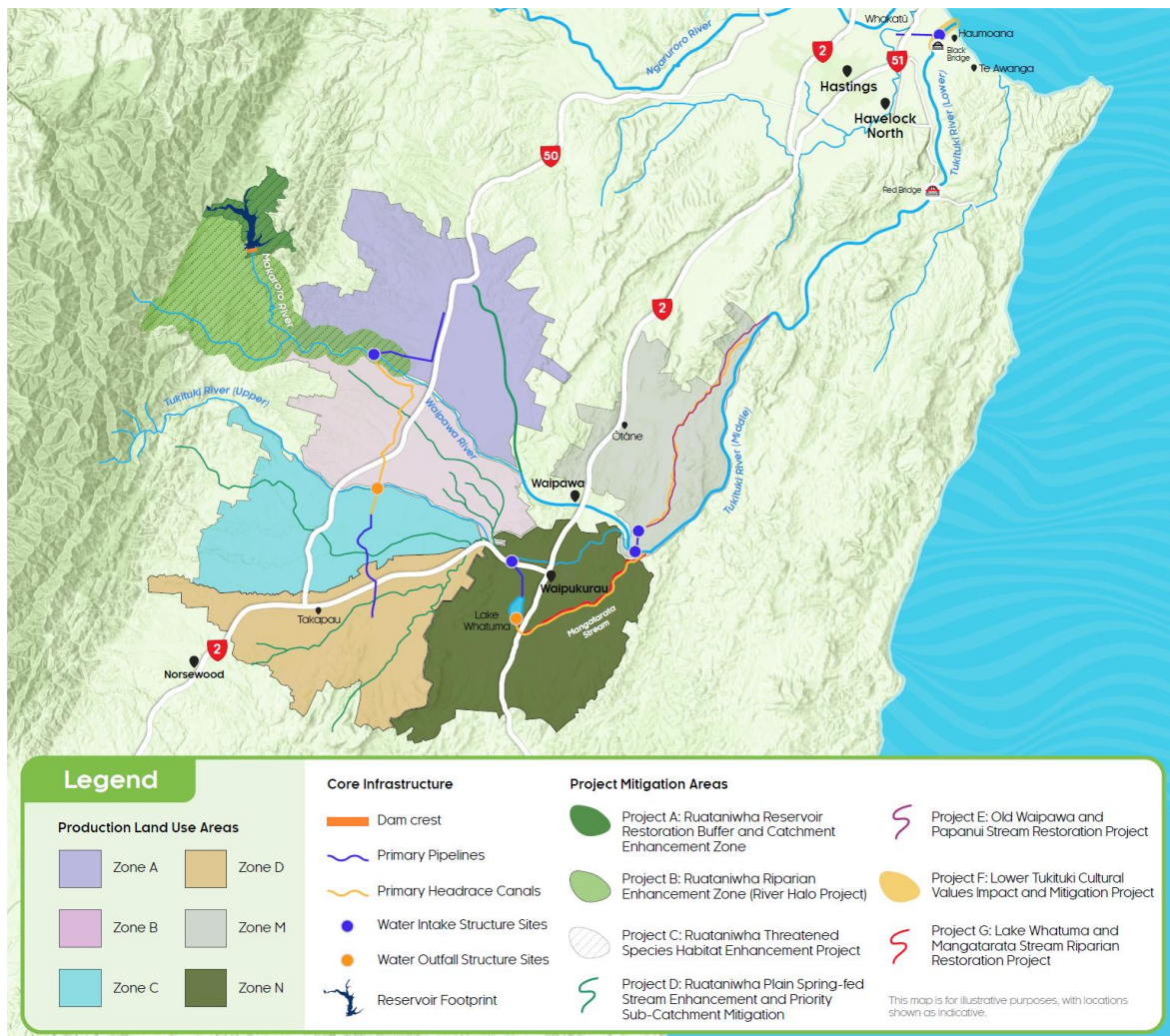


Figure 1 Map of the Tukituki Water Security Project (TWSP). Source: <https://www.tukitukiwater.co.nz/about/the-project>.

The pre-construction feasibility work is being funded by a \$3 million grant from Kanoa, the Central Government's Regional Economic Development and Investment Unit, and co-funding from a group of more than 60 local businesses, private individuals and water users. TWSP is currently in the feasibility phase which is to be completed by this October. This phase will determine the technical, environmental, and commercial viability and design of the TWSP.

TWSL applied to the Ministry for the Environment (MfE) in May 2025 for the TWSP to proceed under the FTAA legislation and to Department of Conservation (DOC) to use the FTAA to exchange the 22 ha of DOC land that sits within the dam footprint. All the documentation associated with these applications can be found on the following websites respectively; (<https://environment.govt.nz/acts-and-regulations/acts/fast-track-approvals/fast-track-projects/tukituki-water-security-project/> and <https://www.fasttrack.govt.nz/projects/tukituki-water-security/land-exchange-application>). A modification to the consented Primary Distribution Network of pipelines (Designation CHBDC-72) was also made at this time.

In April 2026, a loan of up to \$18.13 million from the Regional Infrastructure Fund (RIF) was granted to support the TWSP.



Figure 2 Created image of the proposed Makaroro dam and reservoir. Source; <https://www.tukitukiwater.co.nz/about/the-project>.

As part of pre-lodgement consultation under the FTAA, DOC provided TWSL with a guidance document outlining how to undertake a conservation values assessment for the purpose of the land exchange. The conservation values identified in that document included cultural and heritage values.

Under Section 34 of the FTAA, the Director-General of Conservation (DG) concluded TWSL's application was complete and within scope. However, particular consideration was given to the adequacy of the archaeology report. This report formed part of the RWSS original application, however two additional parcels of land have since been identified and included in the TWSP.

Simon Bickler and Rod Clough (Clough & Associates) completed the heritage and archaeology assessment in 2013. They were commissioned to assess whether the dam, reservoir and water distribution network were likely to impact on archaeological value, part of the required assessment of effects associated with the resource consent application under the Resource Management Act 1991 (RMA) and to identify any requirements under the Historic Places Act 1993.

Clough & Associates undertook a desktop assessment that involved searching ArchSite, district plan schedules, survey office plans, deposited plans, literature and archaeological reports. They visited the dam site in 2011, conducted an archaeological survey of the larger reservoir area in 2012 and attended several meetings with iwi representatives and other interested parties. Their report included a historical review by local historian Patrick Parsons spanning the years from initial Māori settlement up to the 1860s.

The Clough assessment had four pages of discussion and conclusions and a page and a half of recommendations. To summarise their findings and recommendations, they concluded there were no Māori or other pre-1900 archaeological sites recorded prior to the assessment or during the field survey in the immediate vicinity of the proposed dam and reservoir (although two pā were noted 7-10km away). One heritage site of early 20th century date was identified in the immediate vicinity of the dam and reservoir, the site of Gardner and Yeoman's Sawmill dating from the 1920s to 1930s. Further research and physical investigation and recording prior to the area being flooded were recommended as a means of mitigation. It was suggested the remaining industrial artefacts were removed and utilised in some way. In the immediate vicinity of the proposed dam and reservoir, there would be no effect on known archaeological sites and the potential for unidentified sites (subsurface archaeology) to be exposed during construction was considered low. They recommended an accidental discovery protocol be developed in consultation with Heritage New Zealand Pouhere Taonga (at that time called New Zealand Historic Places Trust) and tangata whenua.

A Cultural / Archaeological Sites Protocol (February 2014) was prepared by Professor Roger Maaka and Martell Leticia, which forms Schedule 8 of the existing RWSS consents. This document applies to the existing resource consents, but it is now out of date because it references the Historic Places Act 1993, which has been superseded by the Heritage New Zealand Pouhere Taonga Act 2014. Moreover, this is an Accidental [now termed 'Archaeological'] Discovery Protocol (ADP), which is unnecessary if the whole area is to be covered by a general archaeological authority. An authority replaces an ADP and has legal standing, which an ADP does not have. Hapū/iwi involvement will be included in the authority as well as the archaeological management plan/site instruction that will be a condition of any authority granted.

Clough and Bickler's assessment of the water distribution network did not identify any known archaeological sites that would be directly affected by the proposed works, but they recommended that the headrace canal and Zone M be field surveyed once the distribution network design was finalised. Finally, they advised there was a requirement to apply for an authority to modify an archaeological site if an archaeological site was encountered and suggested obtaining an authority for the entire project as a precautionary measure to minimise delays if archaeological remains were unintentionally uncovered.

This archaeological assessment addresses several key challenges that have arisen in the years since the original RWSS application and the present TWSP.

- i) Significant technological advancements have occurred over the years particularly around Geographic Information System (GIS) and the use of spatial data. This assessment will briefly review historic aerial photographs and LiDAR around the dam and reservoir and zones A, B, M and N, with particular focus on the alteration to the primary distribution network of pipelines.
- ii) Due to their inaccessibility, the two additional parcels of land ('island' and Donovan's Gully parcels) will also be reviewed spatially.
- iii) Heritage New Zealand do not accept archaeological assessments for authority applications that are more than five years old. This archaeological assessment can be used in conjunction with Clough's assessment if HBCWT intend to apply for an archaeological authority for the TWSP.

The purpose of this archaeological assessment was to:

- Undertake a brief spatial analysis of the TWSP using recent technology.
- Undertake a desktop review of the dam, reservoir, Zones M and N and the two additional parcels of land for archaeological sites.
- Conduct necessary field survey, ground-truthing and consultation with tangata whenua.
- Detail findings and make recommendations in accordance with statutory requirements.

Wikitoria Moore and Stella August (HSHB) conducted the field visit on the 15th of July 2026. A member of local hapū also accompanied us on the field visit.

HSHB have not been provided with the legal descriptions of affected land.

Relevant documentation that should be read in conjunction with this assessment include;

- Bickler, Clough and Parsons (2013); Ruataniwha Water Storage Scheme: Archaeological Assessment.
- Morris (2026); Cultural Impact Assessment: Tukituki Water Security Project.
- Wakefield et al (2013); Cultural Impact Assessment of the Ruataniwha Water Storage Scheme - Addendum Report on Zone M (Old Waipawa Riverbed/Papanui Stream).
- Wakefield et al (2010); Cultural Impact Assessment of the Tukituki Proposed Water Storage Dams: Final Report.

Statutory Requirements

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

Heritage New Zealand administers the HNZPTA. It contains a consent (authority) process for any work affecting archaeological sites, where an archaeological site is defined as:

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

- a. 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
- b. Provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and
- c. Includes a site for which a declaration is made under section 43(1)

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

The archaeological authority process applies to all archaeological sites, regardless of whether:

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

Heritage New Zealand also maintains the New Zealand Heritage List/ Rārangī Kōrero of Historic Places, Historic Areas, Wāhi Tupuna, Wāhi Tapu and Wāhi Tapu Areas. The List can include archaeological sites. Its purpose is to inform members of the public about such places.

The RMA requires City, District and Regional Councils to manage the use, development, and protection of natural and physical resources in a way that provides for the wellbeing of today's communities while safeguarding the options of future generations. The protection of historic heritage from inappropriate subdivision, use, and 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 Māori, including wāhi tapu;
- surroundings associated with the natural and physical resources (RMA section 2).

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

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

The following are some of the planning and regulatory legislation that apply to the assessment of the TWSP:

- Heretaunga Tamatea Claims Settlement Act 2018
- Resource Management Act 1991
- Local Government Act 2002
- National Policy Statement for Freshwater Management 2020 (NPS-FM)
- Te Mana o te Wai
- National Environmental Standards for Freshwater 2020 (NES-F)
- Hawke's Bay Regional Policy Statement
- Central Hawkes Bay District Plan

However, this report has been prepared as part of the documentation required under the FTAA. The purpose of the FTAA is to facilitate the delivery of infrastructure and development projects with significant regional or national benefits. This legislation provides projects with an alternative to current processes for the resource consents, notices of requirement, and certificates of compliance usually required under the Resource Management Act 1991, or other Acts. Through this process, expert panels will consider required approvals as a single application package, which will include the exchange of land under the Conservation Act 1987 and Reserves Act 1977. The intent is a more streamlined system than current processes, which require separate applications for different types of approvals.

Methodology

This chapter will outline the methods Heritage Services Hawkes Bay (HSHB) used to undertake this assessment.

The parameters constraining this assessment are; a brief review using GIS and spatial information of the area around the dam and reservoir including the ‘island’ and ‘Donovan’s Gully’ parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed by consultation with Tangata Whenua and a field survey.

Geographic Information System (GIS) and spatial information

GIS is a method that is used to create, manage, analyse, and map various types of data. GIS combines and layers data to show how it is related spatially. This is particularly useful in the field of archaeology where we can overlay information such as archaeological sites on top of historic aerial photographs.

All spatial information was analysed with the software QGIS version 3.44.10 using the New Zealand Transverse Mercator 2000 (NZTM2000) coordinate reference system. Images were produced using a range of base map layers and spatial data.

We were given access to two spatial datasets. These were polygon files for the designated primary distribution network (route for which consent had been obtained) and the alteration to the primary distribution network (route for which consent has not been obtained).

Historical images were sourced from Retrolens, georeferenced and added as a layer within QGIS. Fixed and distinctive reference points such as trigs were used for georeferencing to increase layer accuracy. However, even with good reference points, georeferencing historical photo layers can be difficult and it is common for layers to be slightly misaligned. The quality of historical images does influence how useful this information can be.

Historical maps have also been georeferenced and added as a layer in QGIS. With the additional errors associated with old maps, it is more likely that map layers are misaligned.

Archaeological sites were sourced from ArchSite and added as a layer in QGIS.

The route taken by the archaeologists was recorded using tracking apps and the shapefiles uploaded to QGIS.

LiDAR was sourced from LINZ. This dataset (digital elevation model) was also used to define the 459 (actually 458.6) metres above mean sea level contour line (using the New Zealand Vertical Datum 2016) represents the ‘normal’ full supply level. The 465 contour line (or actually 463.6) is the probable maximum flood (PMF) or ‘ever’, i.e. <1:10,000 year AEP flood. Anything above the 459m contour will be flooded extremely rarely.

Photographs were taken using geotags where geographic coordinates are appended to each image. This identified the precise location where the photo was taken and was added as a layer in QGIS.

Finally, some features were added into QGIS manually (either as points, lines or polygons). For

example, the six zones (A, B, C, D, M and N) were added manually as polygons. While all effort was made to copy the zones accurately, it is important to note there may be small discrepancies or errors. Cultural sites were also added as points or polygons.

It is necessary to note that, analysis and review of the spatial data occurred both before and after the time in the field.

Desktop research

Desktop research is the process of collecting, reviewing, and analysing existing data and information. Sources like reports, articles, and internet databases are used to understand the scope of work and generate objectives and a work plan. It is a cost-effective and time-efficient method for understanding 1) what has been done, and 2) what needs to be done.

The following sources were used:

- ArchSite (<https://nzaa-archsite.hub.arcgis.com/>) including Site Record Forms
- HNZPT digital library (<https://www.heritage.org.nz/archaeology/archaeology-digital-library>)
- HNZPT Rārangī Kōrero List
- Internet search
- Knowledge Bank/Hawke's Bay Digital Archives Trust (<https://www.knowledgebank.org.nz/>)
- Hawke's Bay Museum archives
- Published resources/ books/ theses/ reports
- MapsPast (<https://www.mapspast.org.nz/>)
- CHBDC website

This information was then used to plan and prepare for work in the field, and following that, research findings from in the field.

Consultation

Consultation with Tangata Whenua is important to Heritage Services Hawke's Bay and undertaken whenever possible as part of our process. Stella August and Wikitoria Moore first met Brian Morris when undertaking a previous archaeological assessment, so Wikitoria reached out to Brian to tell him HSHB were undertaking the TWSP archaeological assessment. Brian confirmed he would like to accompany them on the field survey and on 18 June 2026, Wikitoria had an online meeting with Brian to share the information that had been collated in QGIS. During that meeting Brian shared his knowledge regarding pā in the area, native reserve areas, and importantly, an urupā on Makaroro Road. Brian also shared a Cultural Assessment completed in November 2025 that identified several cultural sites near the Reservoir that were identified by Tangata Whenua (Kamau 2025). The information shared by Brian influenced the areas visited during the field survey.

Field Survey

Field survey is necessary to observe, collect, and record primary, first-hand data about archaeological sites. Stella August and Wikitoria Moore (Heritage Services Hawke's Bay) with assistance from Brian Morris completed the field survey on 15 July 2026.

The objectives of the field survey were to:

- Locate any unrecorded archaeological sites and update ArchSite, including accurate spatial data, photographs, and site condition
- Visit any cultural sites to determine if there was any visible archaeological evidence.

During discussions with Rebecca Mackenzie (The Property Group) to arrange access for the field survey, it became apparent that we were not going to be able to access the northern side of Makaroro River (in the vicinity of the Reservoir) within the timeframe allocated. Due to the area recently being harvested and presently cutover, the decision was made to not visit the northern side as the likelihood of archaeological evidence being present or identifiable was low. Access was granted for the southern side of the Makaroro River (in the vicinity of the Reservoir) but denied for the property adjacent to Makaroro Road.

Cell phones were used for photographs and to track our route with tracking apps. No investigative techniques other than observation were used during the field survey.

Hardcopies of aerial photographs, LiDAR and satellite map images were printed and on hand during the field survey.

It must be reiterated, we were constrained by the findings of the brief review of spatial information, which was restricted to around the dam, reservoir, the 'island' and 'Donovan's Gully' parcels and along the alteration of the primary distribution network. Access and time constraints contributed to this further. HSHB needs to make it clear that only a small part of the project area was surveyed (see Results chapter).

Physical Environment or Setting

This chapter will describe the physical environment or natural landscape within the assessment area. Due to the scale of the TWSP, this assessment focuses on the areas around the Dam and Reservoir, the ‘island’ and ‘Donovan’s Gully’ parcels, and Zones A and B adjacent to the proposed Alteration to the Distribution Network pipeline. Zones N and M are only discussed briefly as the locations of the secondary pipelines have not been finalised (Figure 3).

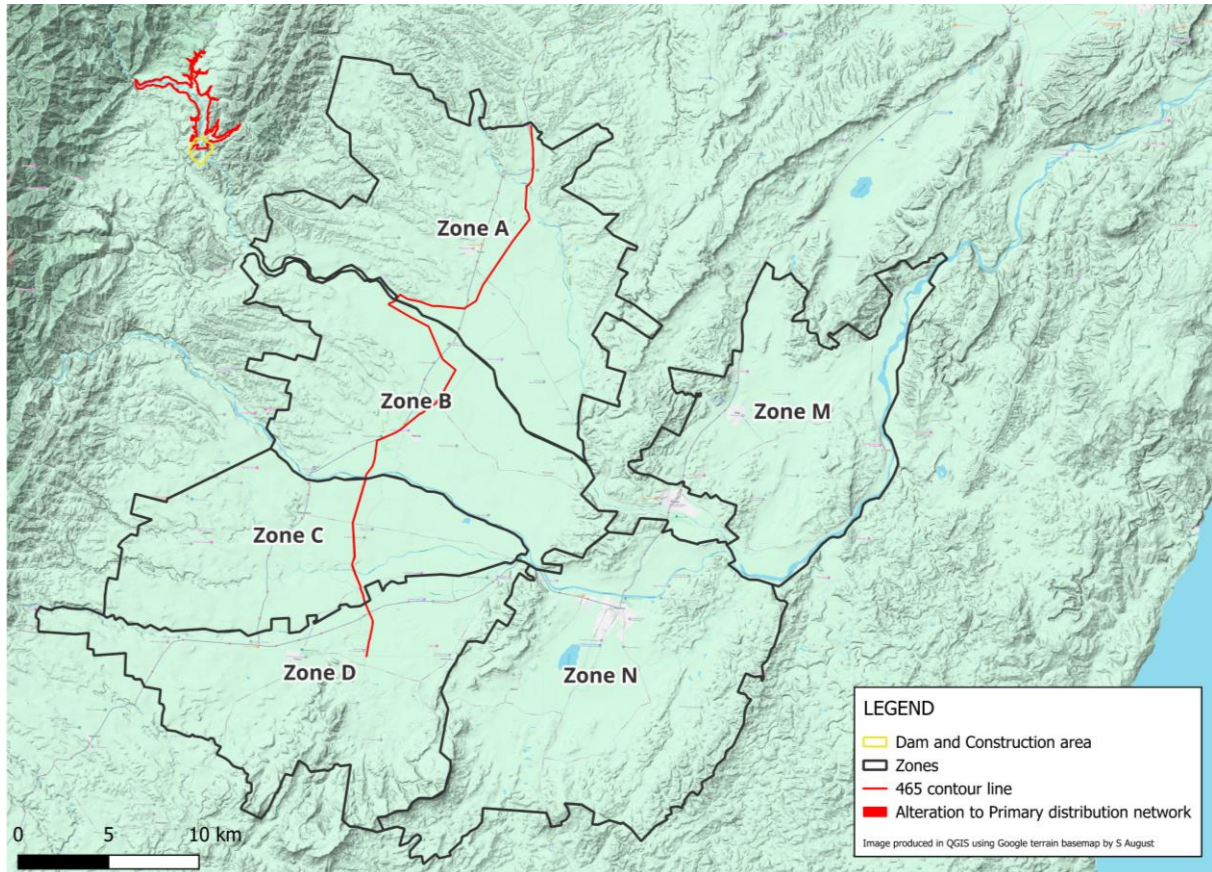


Figure 3 The scale of the Tukituki Water Security Project (TWSP) showing the dam and construction area, the reservoir (465 m above sea level) and the proposed Alteration to the primary distribution network of pipelines on a Google Terrain basemap.

Makaroro River Catchment – Dam and Reservoir Area

The Makaroro River originates from the Ruahine Range, flows southeast through steep forested gullies and tussock grasslands, and descends rapidly before joining the Waipawa River near Tikokino. The river flows through a narrow, incised valley which widens in its lower reaches (Figure 4). In some places the river abuts sheer cliffs and in others is bordered by native trees. The prevailing winds in the Makaroro River Catchment are from the west and northwest.

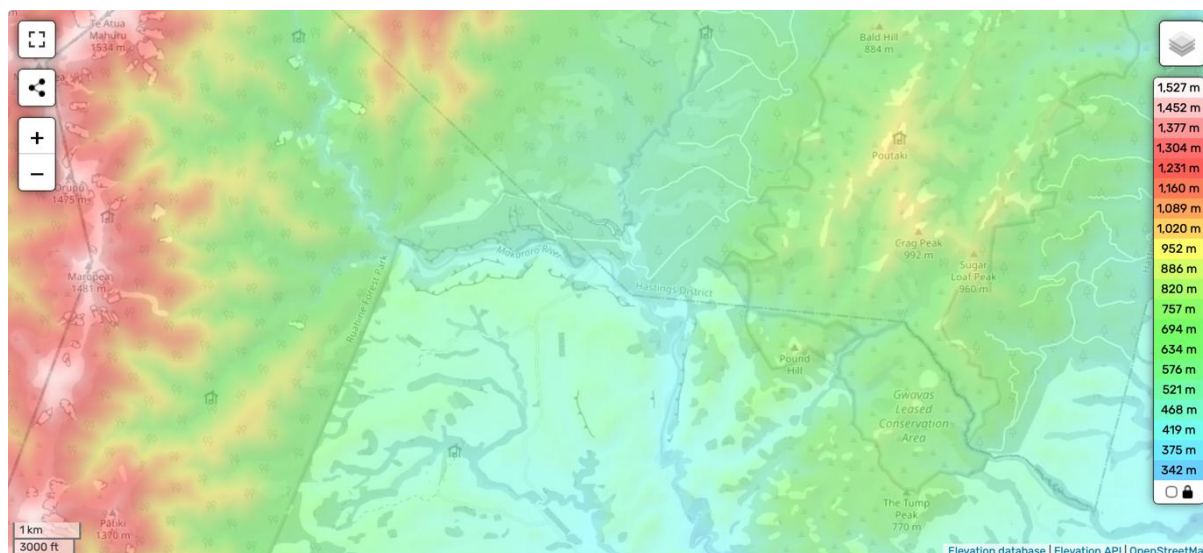


Figure 4 Snip of map showing the elevation and terrain along the Makaroro River as it flows out of the Ruahine Forest Park. Sourced by W Moore from en-nz.topographic-map.com, 24 July 2026.

Land use in the area is dominated by native forestry with the Ruahine Range to the west and the Wakarara Range which lies east of the Ruahine Range on the northern side of the Makaroro River. There are also planted pine forests (some of which have recently been harvested) and pastoral farming areas. The area is also used for recreational tramping, fishing and hunting.

Under the Central Hawke's Bay District Plan, part of the Makaroro River is designated as a Significant Amenity Feature (SAF) due to its high aesthetic, recreational, and natural character values.

There are no recorded archaeological sites in this area, however historical records document the use of Māori tracks, the bush as a food resource and pā along the Makaroro and Waipawa Rivers.

Around the Reservoir, two areas were identified to survey for archaeology, both on the southern side of the Makaroro River. The first area is elevated above the Makaroro River, but below an upper terrace, in an area that has been eroded for a very long time. Review of aerial photographs from 1951 show the eroded area as recovered or grassed. The area did not show any signs of recent damage or flooding. The area was undulating and covered in pasture, scattered native trees, and scrub but visibility was not affected.

The second area was further downstream, on the floodplain adjacent to the Makaroro River. The area ranged between 0.4-1.0 metres above the river. The area was very difficult to get to (we had to go through blackberry) and visibility was limited. It was covered in long grass, trees, and typical river vegetation. The area was very wet with a creek cutting through the floodplain and a waterfall descending a river terrace nearby.

Ruataniwha Plains – Zones A and B

The Ruataniwha Plains form a flat alluvial basin bordered by the Ruahine Ranges on the west and rolling hill country to the east. The plains are watered by many rivers and streams that all drain into the Waipawa and Tukituki Rivers. The landscape is mostly flat to gentle undulating terraces (Figure 5). The prevailing winds on the Ruataniwha Plains are from the west and northwest.

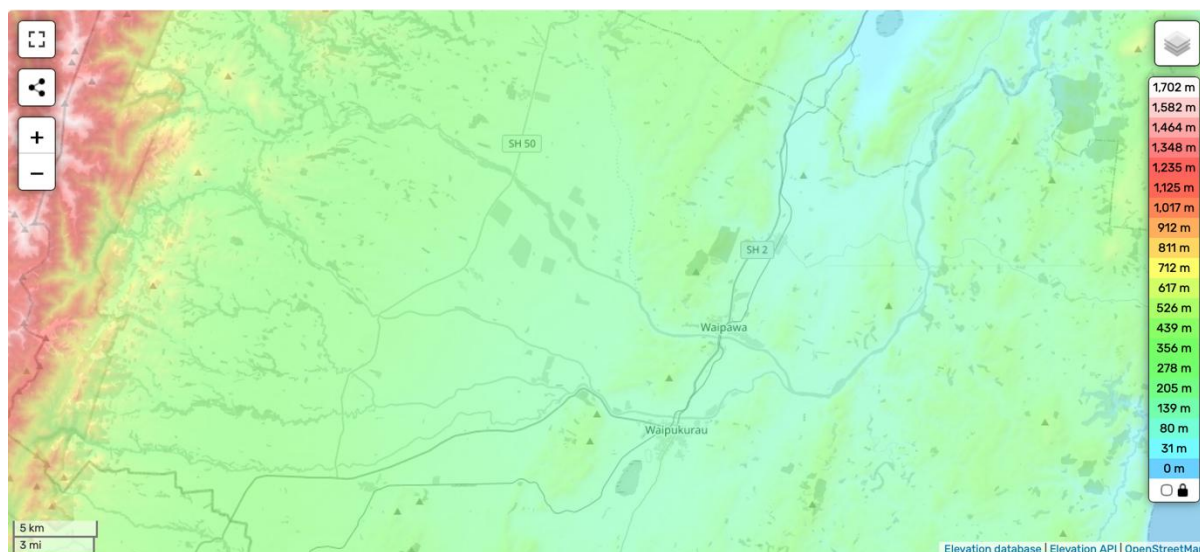


Figure 5 Snip of map showing the elevation and terrain of the wider Ruataniwha Plains area. Sourced by W Moore from en-nz.topographic-map.com, 24 July 2026.

Driving through the Ruataniwha Plains the landscape is dominated by agricultural and horticultural activities, prevalent in the area from the 1850s onwards. Native bush (consisting of magnificent stands of totara, matai, rimu and kahikatea) present on the plains and on the Ruahine–Wakarara foothills was cleared not long after the arrival of Pākehā, converted to pasture and used for buildings and fence posts (MacGregor, 1970 & 1975). More recently, the flat terrain and high sunshine hours has attracted renewable energy development with a \$50 million solar farm project underway.

Wider Plains – Zones N and M

Zones N and M are included in the Ruataniwha Plains, and are representative of the characteristics outlined above, but are further away from the Ruahine and Wakarara ranges, so are a little more low-lying in central areas and encompass more slightly elevated hilly areas towards the east and northeast. Farming and cropping are the major land use activities in the area, as well as Waipukurau township in Zone N. The Waipawa township sits between Zone A and Zone M.

There are significantly more recorded archaeological sites in these two zones, which can be likely attributed to two key features — Lake Hatuma (Whatumā) and the Tukituki River.

Parsons (1999:12) states “There is no question that Lake Hatuma and the neighbouring native forests were the two key factors to early Māori settlement in the Waipukurau district. They provided the alternative food source to fish and other kaimoana on the coast. When the fishing season closed the early Māori moved to the interior where they fed on birds and eels”. Elizabeth Pishief (2020) documents the significance of Lake Hatuma and archaeological sites in the surrounding area, including Pukekaihou Pā.

The Tukituki River served as a natural boundary area between early tribal groups, a vital food source, and the highway from the coast to the interior heartland for Māori, and then Pākehā settlers from the 1840s onwards. There are numerous pā sites located on both sides of the Tukituki River from its mouth all the way to the foothills of the Ruahine Ranges.

The TWSP is a catchment-scale development that will create a water storage reservoir to enable regional water security and sustainability. The project will require the installation of major infrastructure and will have effects on many aspects of the environment and community. The project will:

- Create a reservoir 7 kilometres long that will hold approximately 93 million cubic metres of water
- Construct an 83-metre high dam in the Makaroro River
- Irrigate approximately 20,000–30,000 hectares of land
- Release up to 20 million cubic metres of water per year to ensure minimum river flows are maintained in the Tukituki River, and
- Exchange 29.7 hectares of Ruahine Forest Park for 170 hectares of private land
- Provide water supply for local communities, and
- Increase the enhancement of Lake Whatumā and the Mangatarata catchment

Additionally, the existing resource consents require several ‘projects’ to mitigate and offset the adverse environmental effects of the TWSP (Figure 6).



Figure 6 Image taken facing northeast overlooking part of the Makaroro River and adjacent land that will be flooded by the reservoir. The photo shows the cutover from recent forest harvest, existing commercial forest, remnant native bush surviving in river and tributary gullies, the location of Yeoman’s mill (river flat far right in image), the Wakarara ranges covered in mature native vegetation on the skyline and evidence of pastoral farming in the foreground. Source: W Moore.

Historical Background

It is acknowledged that the history written here, which was obtained mostly from material in the public domain, may differ from hapū accounts of their history. We consulted with Brian Morris, a hapū member about the history of the area briefly for this report. He also accompanied us on the field survey.

Bickler and Clough completed the RWSS Archaeological Assessment in May 2013. Historian Patrick Parsons completed the detailed Historical Background of this assessment which should be read in conjunction with this report.

Finally, please refer to the Māori History section of Pishief's archaeological report (2020) for an interesting and informative synopsis of the Māori history of the area, also written by Brian Morris on behalf of hapū.

A brief summary of the region's history and some additional information from a limited literature review is provided here as context for the archaeological evidence. Key locations and rivers relevant to the Māori history of the area are shown in Figure 7.

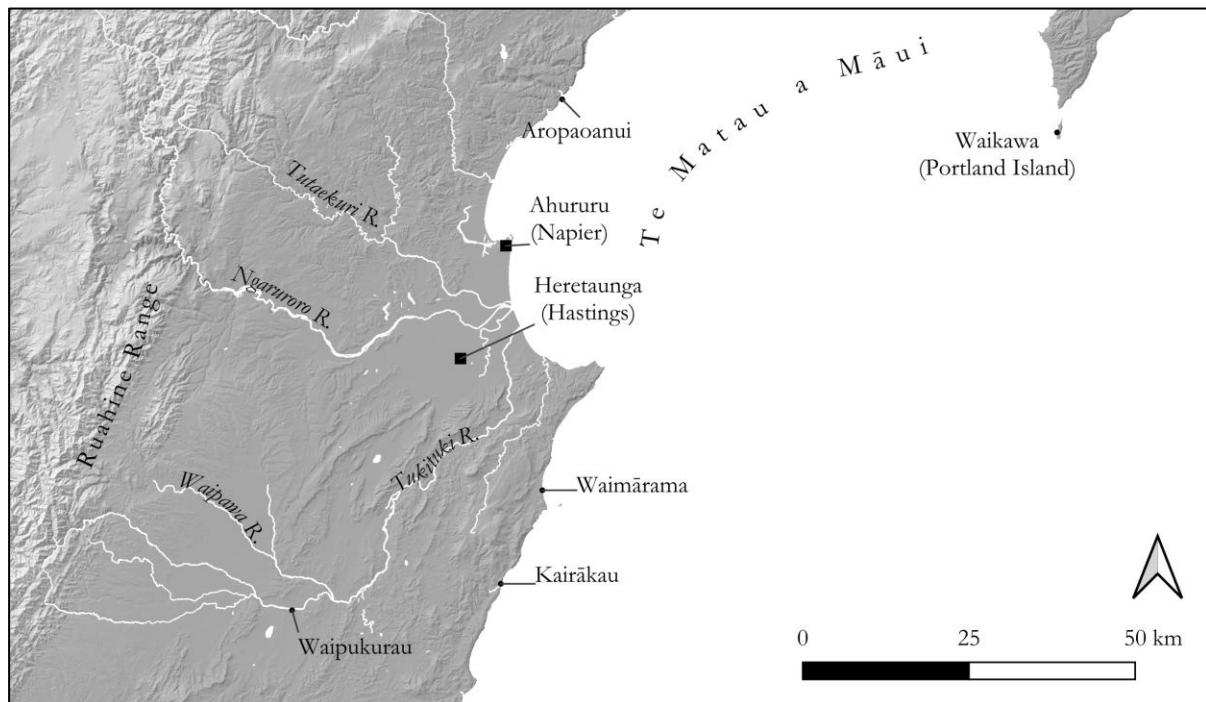


Figure 7 Map of Hawke's Bay showing key locations and rivers. Waipawa River can be seen in the bottom left of the image. Map produced by McIvor in Allen et al (2024).

Māori History

Parsons (1999:17) states "...the earliest permanent occupants of Heretaunga were Ngati Whatumamoā and Ngati Awa to the north of the Ngaruroro River and Te Aitanga a Whatonga to the south. There is evidence that the early ancestors of the southern portion, Tara, Rangitane, Puhikiaiariiki, Tangowhiti and Whata were contemporaries living towards the close of the 1300s".

Kahungunu invaded the Hawke's Bay area in the 1550s through his generals Taraia and Te Aomatarahi which resulted in attacks on already established pā, followed by alliances and strategic

marriages (e.g. Hinengātiira to Te Aomatarahi’s youngest son, Rongomaipureora) between Kahungunu’s descendants and the remaining Tangata Whenua to establish authority and control. There were two main divisions, each named after the two wives of Taraia’s father, Rakaihikuroa: Te Hika a Ruarauhanga and Te Hika a Papauma (also known as Te Ika a Ruarauhanga and Te Ika a Papauma) (Buchanan, 2004:24).

The assessment area is located within the rohe occupied by Te Hika a Papauma, south of the Ngaruroro River and east of the Tukituki River (Figure 8).

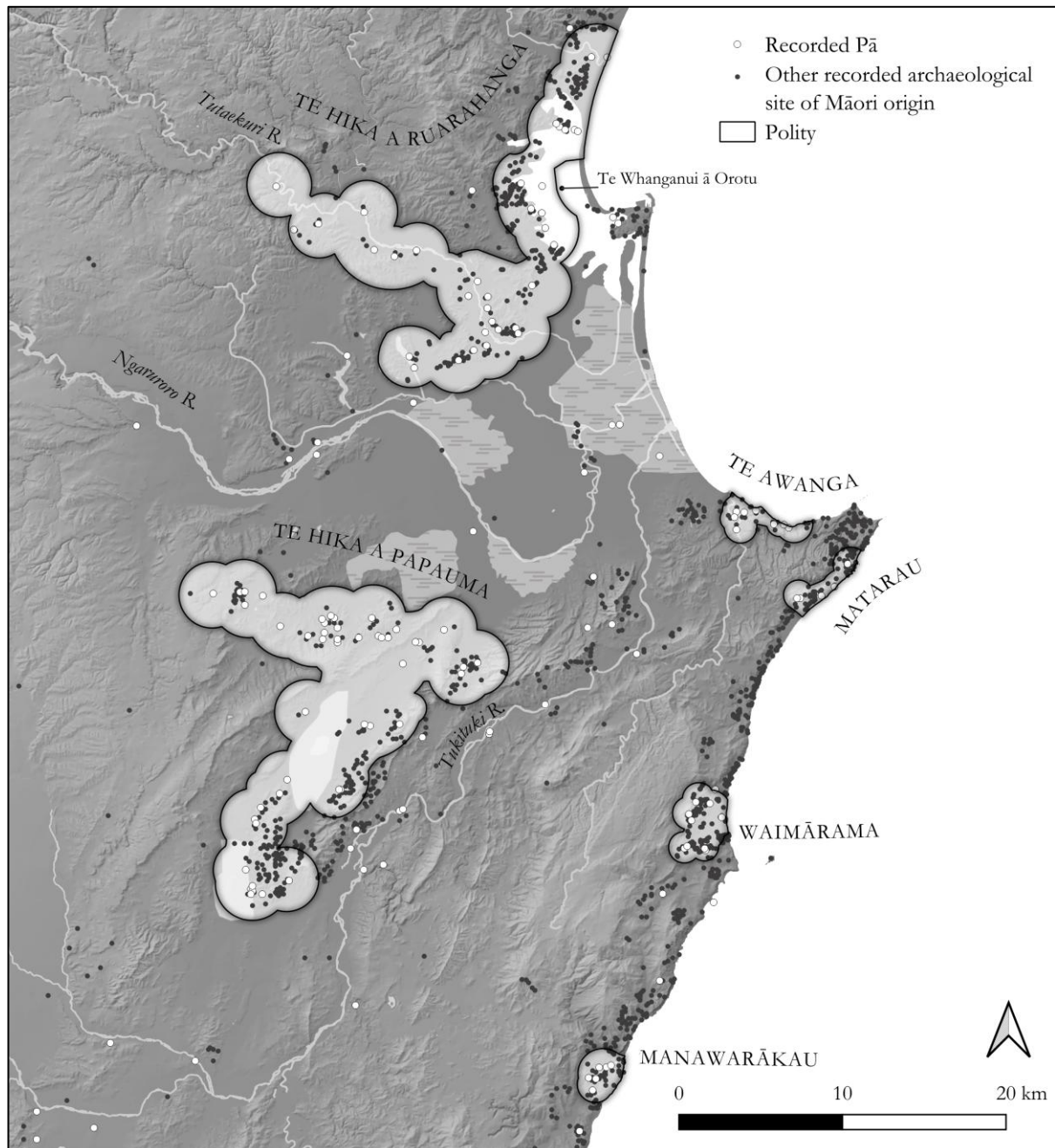


Figure 8 Map of recorded archaeological sites in Heretaunga and the six polities identified by Allen in 1994. Wetlands and lakes as they existed circa 1500 to 1870 CE. Map produced by McIvor for Allen et al (2024:57).

Decades after Kahungunu’s invasion another marriage that provided stability in the region was between Te Whatuiapiti (Te Hika a Papauma) and Te Huhuti (Te Hika a Ruarauhanga). Buchanan states “By this marriage, the two main hapu of Heretaunga were united: the descendants of Taraia and of Takaha, and from it a long line of chiefs and leaders in this district. Between them, Te Whatuiapiti

and Te Huhuti had the mana over all the lands of Heretaunga, and for the time being there was peace in Hawke's Bay" (1973:29).

Parsons documents in Bickler and Clough (2013) the association of Ngāi Te Upokoiri and other specific hapū with the Wakarara, Ruahine and Ruataniwha areas. Parsons also describes events leading up to and during the 1820s–1830s that saw many Māori leave the area and seek refuge in Nukutaurua (Mahia Peninsula) or in Manawatū due to intertribal warfare. Some stayed in those places for more than a decade, returning slowly after the signing of Te Tiriti o Waitangi (the Treaty of Waitangi) in 1840.

Parsons, in Bickler and Clough (2013) also mentions a pā site in the upper Waipawa and Makaroro river catchment area. The account is provided by Raniera Te Ahiko during Māori Land Court hearings for the Partition of Mangaohane 1 (Napier Min Bk 21, page 1). The pā mentioned is Motu o Puka. Raniera Te Ahiko discusses a Rakautatahi chief visiting the pā with another chief Tuawahia. He says Rangikoianake was killed at Motu o Puka by Ngāti Kahungunu, and he names Te Rere as living at Motu o Puka. The exact location of the pā is not discussed by Parsons.

Motu o Puka is also discussed in Part C of the Landscape Assessment prepared for the CHBDC by Hudson Associates when the CHBDC district plan was last reviewed. The location is indicated in an image on page 103, and this was used to determine the approximate location of the pā in QGIS. This places the pā less than 2.5 kilometres downstream of the dam and its associated construction zone. The Landscape Assessment states:

Motu of Puka Pā was located on the north bank of the river channel... This pā was under the leadership of chief Tuawāhia whose influence spread right down to Rakautahi Marae just south of Takapau... Motu-o-Puka was not a defensive pā but was located at the meeting point of two walking routes around the Wakarara Range (alternatively named Ngawhakarara). One was around the western side, which is now generally aligned with Mangleton and Mākāroro Roads, while the other was around the eastern side from Ngaroro.

Discussions with Brian Morris revealed that the actual name of the pā is Motu o Puku, noting Puka is most likely a spelling mistake that has unfortunately, not been corrected and therefore persisted. Motu o Puku is the name used by Johnny Nepe Apatu in the Cultural Impact Assessment for the TWSP completed by Morris in April 2026.

On the 1851 map of McLean's Purchases Waipukurau pā is shown located on the sharp bend in the Tukituki River where the river turns northeast after following an easterly path. This places the pā along present day Mount Herbert Road near Mangatarata Road (Figure 9).

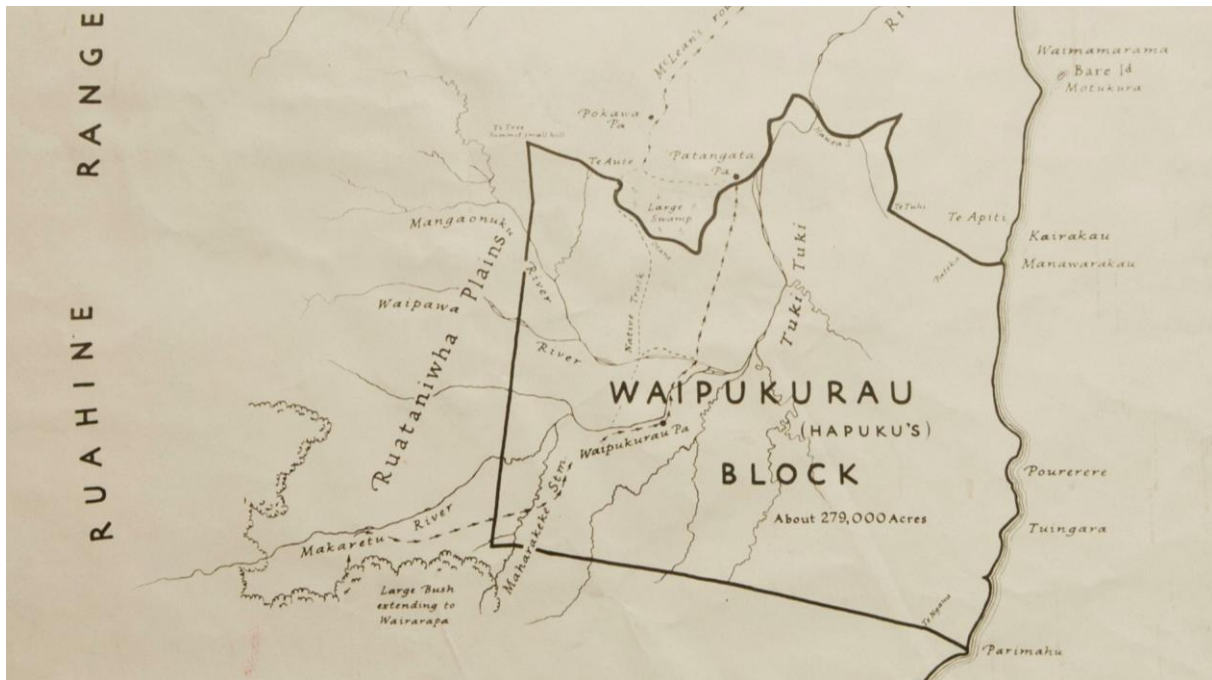


Figure 9 Close up of the Waipukurau Block from Map showing from McLean's Purchases 1851. Sourced from MTG Hawke's Bay Archives Online Collection (VN 71728).

Waipukurau pā dates back no further than 1844 after Māori returned to Heretaunga (Parsons 1999). William Colenso first visited Waipukurau on 22 April 1845. He described Te Waipukurau as a village containing about 30 inhabitants who had been expecting him and his party. The pā can be seen in the following painting by Joseph Rhodes circa 1858, Mount Vernon is on the skyline (Figure 10).

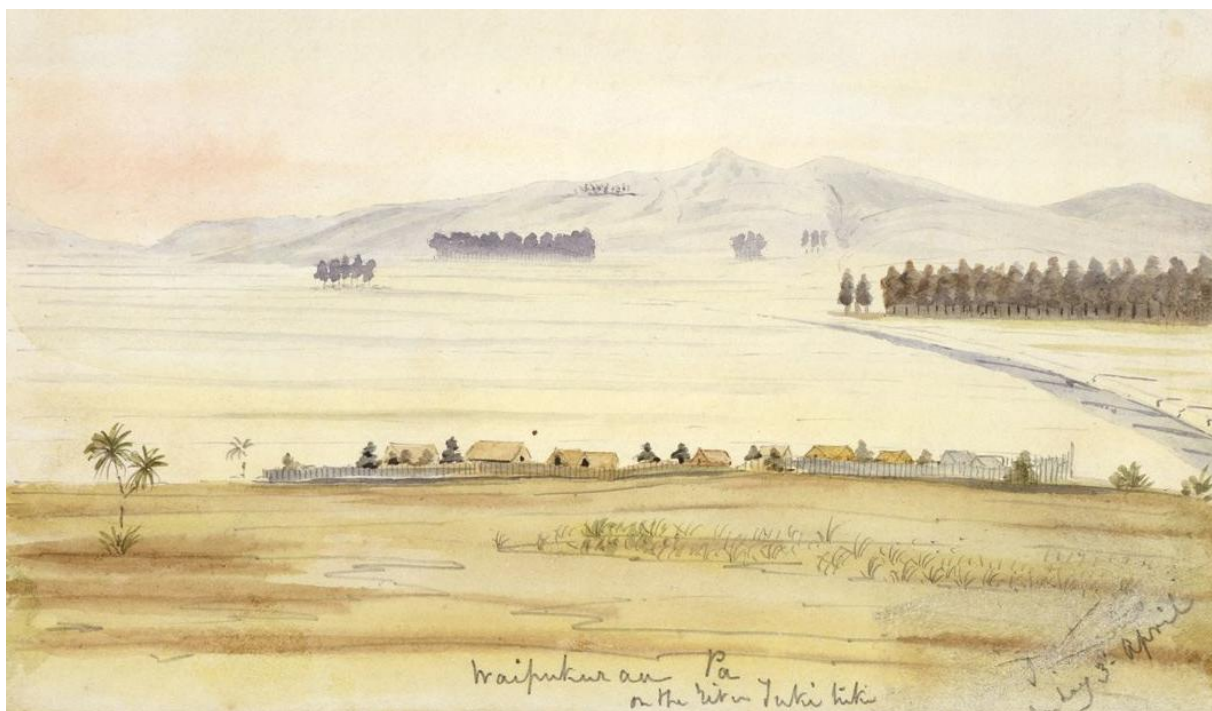


Figure 10 Painting by Joseph Rhodes, circa 1858 of Waipukurau Pā. Source: ATL.

William Colenso first tried to cross the Ruahine Ranges in 1845 but failed. When he passed through Tikokino on his return he noted that there were no Maoris [sic] living in the area (Wilson, 1966:8). Colenso successfully crossed the Ruahine Ranges in 1847 and is recognised as the first Pākehā to do so. He used established Māori tracks and was led and supported by Māori guides (Bagnall and Petersen, 1946).

History after European arrival

The presence of Pākehā in the area increased slowly after the signing of Te Tiriti o Waitangi in 1840. However, European settlement accelerated after 1850 when Donald McLean arrived in Hawke's Bay to negotiate land purchases. Waipukurau pā is where 'the great chiefs were assembling from different villages' to meet with Donald McLean 'to sell the Government a considerable portion of land' (Wilson, 1951a) in 1850. The Waipukurau block, also known as Te Hapuku's block, consisted of 279,000 acres of land and was sold for £4800 on the 4th of November 1851.

Butler and Edwards (1991:7) document that the Ruataniwha North and Ruahine Block, estimated at 130,560 acres, was the largest Crown purchase in the area after the Waipukurau Purchase and the boundaries were described as:

South: The Waipawa River

West: Summit of the Ruahines

North: Mangamauku river on to Kereru, across to the summit of the Ruahines

East: The boundary line of the 1851 'Waipukurau' Purchase, which cut across the Argyll flats.

As promised as part of the sale, there were reservations of land for individual chiefs. "Hapuku asked that one piece of land be returned at Tikokino. This was to be 500 acres, of which 200 acres were to be secured to Ropata te Waiariki, and the balance to the people living there" (Butler and Mathews, 1991:8). Māori Land Court records show 42 people listed on the multiple titles (Butler and Mathews, 1991:16).

The two figures below show the Tikokino Native Reserve and Figure 11 illustrates that in 1874, native bush extended as far east as Hampden (Tikokino) and bordered the northern edge of the native reserve. It appears the bush had been cleared by 1927 (Figure 12) and the Tikokino Native Reserve was eventually sold.

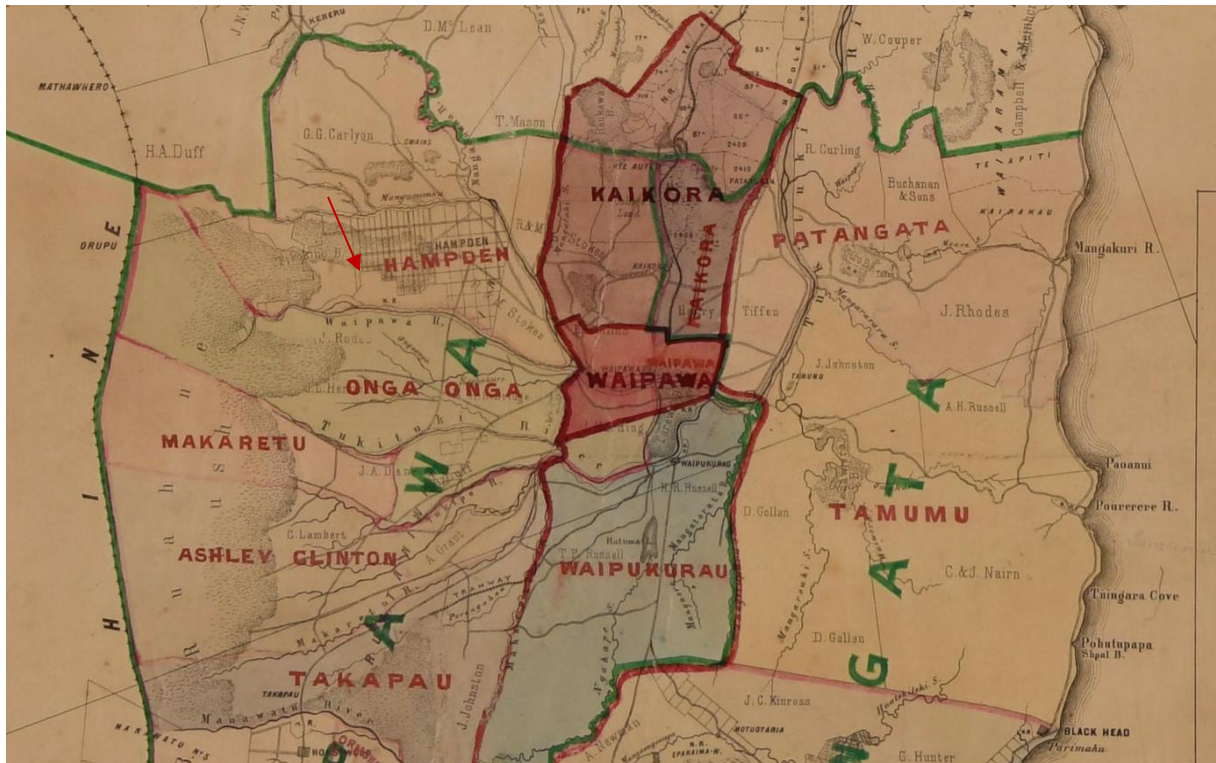


Figure 11 Snip of map titled Map of the Province of Hawke's Bay New Zealand, compiled and drawn from official sources by A. Koch, Wellington, dated April 1874. The red arrow indicates the Tikokino Native Reserve, and the shading indicates native bush. Sourced from MTG Hawke's Bay (VN 64707).

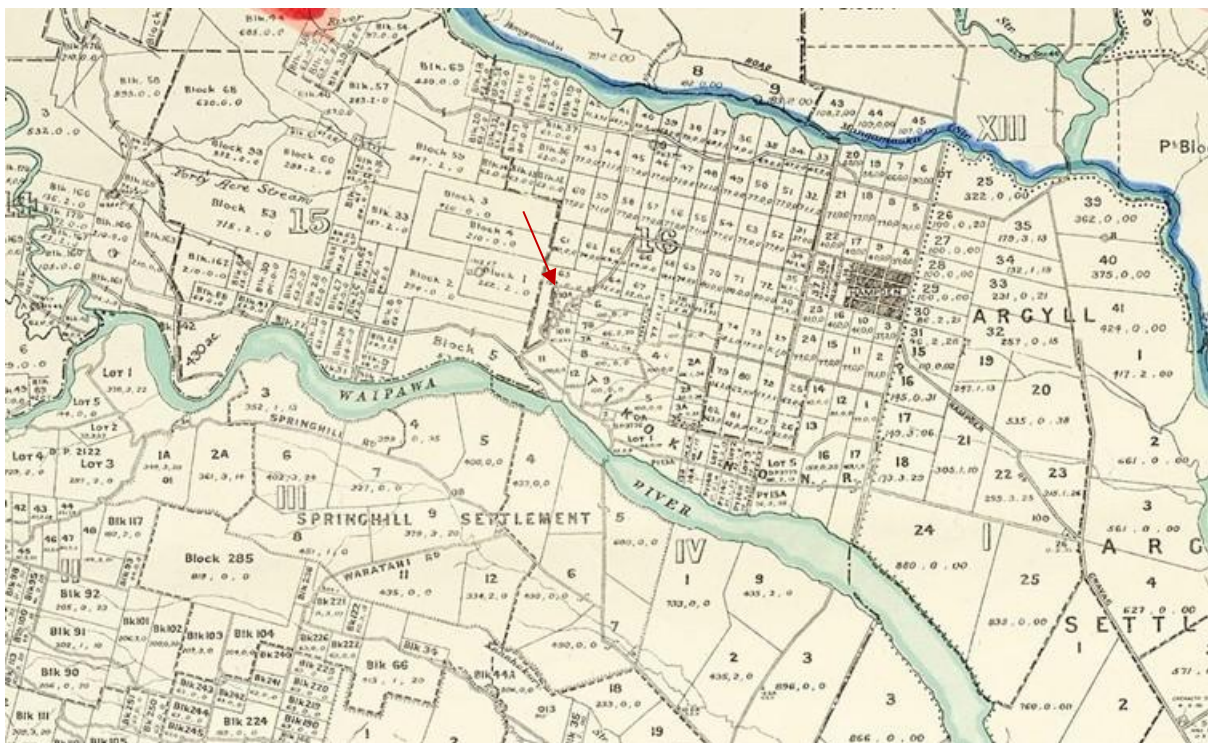


Figure 12 Snip of map titled Map of Patangata County, Tamatea Tribal District circa 1927 showing the Tikokino Native Reserve area indicated with the red arrow. Unlike previous maps of the Tikokino Native Reserve, this map has blocks and titles. Source: Brian Morris, 2026.

Ropata Te Hoakakari, also known as Ropata Te Waiariki was a local chief and had 262 acres of the Tikokino Native Reserve in his own name, cultivating the area with others. Ropata was born circa 1801, died at the age of 80 in Tikokino and is buried in a Māori cemetery adjacent to Makaroro Road. Butler and Mathews (1991:17) state “Ropata te Hoakariki [sic] is buried on the flats just below Makaroro Road, and his burial site is marked with an inscribed stone”.

Wilson (1966:8) states:

There is a Maori cemetery below a river terrace and about two chains from the Waipawa-Wakarara road. In that cemetery is a solitary tombstone erected to the memory of:

H. E. [sic] WHAKAMAHATANGA [sic]
Uo
Ropata Te Hoakakari
I Mate Tikokino
I Te 25 o Noema
1881
E Waru Te Kauona [sic]
Tau

Enquiries at the Maori Affairs Department at Palmerston North and Wellington failed to provide any information showing who this chief was. There are mounds indicating the graves of children in the enclosure. A few chains along the road can be seen the railed enclosure of an adult's grave.

Butler and Mathews (1991:16) state “The Tikokino Pa was situated on the river terrace of the Waipawa river, near the Mangahouhou Bush, or Hampden Bush as it was later called”. They suggest that the reason the area was deserted when Colenso passed through was “Possibly it was occupied on a seasonal basis when the Maori in summer came to catch kereru and other food in the bush” (1991:16). The name Hampden was not popularised and therefore, and the Māori name Tikokino remains to this day.

Around 1857, unrest in the area between Māori chiefs over the land sales to the Government led to stockades being erected in Waipawa and Waipukurau. Margaret Gray (1989:32) states “Around 1860 a stockade was erected on the Ruataniwha Plains, referred to as the Waipawa Mate Stockade for the reason of its location in the vicinity of the Waipawa-Mate Stream. The stockade actually sat on a rise on the left of Stockade Road next to the late W. Mitchell's home”. All that is left of the stockade is the Stockade Road signpost, however Gray (1989:32) further states:

It is unsure whether soldiers from the 65th Regiment were dispatched to Ruataniwha. But definitely the 14th Regiment were stationed there. In fact, a tunic button bearing the number fourteen with an embossed tiger and the words Waterloo and India were [sic] found early in the century at Ruataniwha as well as a silver shilling with the date 1835.

Samuel and Harriet Fletcher were the first settlers in the Wakarara district. Sam took up 1000 acres in 1862 and named the property Pendle Hill. Rona Davidson wrote *Pendle Hill and its People* (1994) and documents the following interaction with Māori in the area (1994:24):

Their nearest neighbours were a Maori sub-tribe who occupied a pa some seven miles away near Tikokino, then known as Hampden. It was from the Maori women at the Tikokino Pa that Harriet learned which of the barks and lichens to use for dying and the medicinal uses of native plants. She in turn showed the Maori women how to bake bread from coarse ground wheat.

Rae Nicholls in her book *Footprints of a Pioneer, a Hall Story* (1982) relays some of the trials and tribulations of William Hall who bought land in the Tikokino area in 1864. The 158 acres Hall bought from the Crown “lay right next to the Tikokino Native Reserve, between two Maori pas” (Nicholls, 1982:56). Nicholls documents many letters sent and received by Hall. The letters describe being harassed by Natives for rent payments, even though the land had been legally sold and paid for, boundary disputes, restricting road use and impounding cattle. Ropata and Hero (more likely Hira) are named as causing the trouble. Nicholls (1982:65-66) documents Hall writing to J. D Ormond (Superintendent) in 1873:

I regret having to again trouble you Honor by laying before you the annoyance which I am daily experiencing from the Tikokino Natives in reference to the land question – They are now beginning to pound my cattle and state that they will continue to do so – I would therefore feel much obliged by your informing me if the Boundaries have yet been fixed so that I may commence to fence. If not, am I in the meantime to expect any protection from you Honor.

The land adjoining me belonging to the Natives, has been for a long time leased to Mr. Stokes, but I have been paying them (the Natives) small sums from time to time, so as to keep them from molesting my cattle and beg to say that I cannot afford to do so any longer. Sometimes the Natives go so far, as to deny me the right of road, as I am fixed between two Pahs.

The Natives who are most influential in the matter are Ropata, Tikokino and Hero of the same place, who collects the cattle out of the Bush to pound them.

If I am to expect any protection, I would be glad if your Honor would write to these parties to that effect.

The Hampden Bush was described in the *Waipawa Mail* in 1886 under a section called ‘Rambles in the Bush’. The author is not named but they give insights into the size and activities undertaken in the bush, particularly by Māori. Butler and Mathews (1991:19) state:

It would be a source of great pleasure for anyone to take a ramble into the Hampden Bush; when I say bush, I mean dense bush; of course there is plenty of cleared bush that has been burnt by the disastrous fires for anyone to visit who prefers it. But there is more pleasure in visiting the dense green forest for there you see all the magnificent ferns, and a great many very pretty wild flowers and many flowering and climbing plants etc.

About a mile from our quiet little village there is a canoe, right in the dense bush, which is supposed to have been carved out by the Maoris many years back, before any of that part was inhabited by a white man, and how the Maoris came there is a mystery.

Anyhow there is a clearing about six chains square, and in it are the relics of some Maori pāhs and it is thought that these natives that built the pāhs, carved out the canoe; it seems as if it had been cut out with a stone axe for it is chopped very roughly as if done with one of these implements.

A *Waipawa Mail* report from 1906 confirms Māori still living at Tikokino Pā at that time, saying “the Maoris [sic] of Tikokino have as many as four contracts in hand for local Roads Board, and are just as smart as their pakeha brothers in price. They have as much work as they can possibly undertake for the next three months or so” (Butler and Mathews, 1991:17).

The above evidence confirms the Tikokino Native Reserve area was occupied and utilised by Māori. The whenua was lived on, and its people buried within it. There were at least two pā and the large dense bush adjacent to it was utilised. The Tikokino Native Reserve area was cultivated from approximately the 1850s to 1910.

Butler and Mathews suggest some archaeological evidence was discovered in the area. “When the gorse was cleared from the river flats in the late 1940s, squares of tilled soil, presumed to be where kumera [sic] pits have once been, were found” (1991:17).

Pendle Hill is also mentioned in the CHBDC’s Landscape Assessment as a site with a lookout and pits, although nothing has been recorded in ArchSite. When discussing Motu o Puku Pā and walking tracks through the area, the document states “Walking tracks then headed south, with one possible route being along the foothills of the Ruahine Range following the Moorcock Stream, with the other possibly passing through a lookout and pits at Pendle Hill...”. No further information regarding the lookout and pits has been uncovered to date.

James Gordon Wilson (1882-1967) lived at Netherby, Hatuma for most of his life. He was a historian and chronicler who authored many publications recording the early days of this province. Two sources of particular interest are Wilson’s *History of Hawke’s Bay* (1976) and *History of Hatuma* (1951). He identifies the location of Kiorerau, an open settlement near the Kiorerau Stream, the principal outlet of Lake Whatumā (Wilson 1951b, Parsons 1999).

Ohinewhatuia pā is located nearby where Porangahau Road crosses the Kiorerau Stream. The location of this site is described briefly in Pishief (2020: 16).

And finally, Parsons (1999) discusses Rua O Tangaroa pā in his book locating the pā at the top of the ridge behind the Mount Vernon homestead. He visited the site and provided several interpretations of the site including the observation that the site has extensive and had commanding views. The pā is associated with Te Kikiri o Te Rangi, a prominent chief of the Waipukurau region, who Parsons also

discusses in the book.

Wilson (1951b:4) mentions artefacts or material culture — burnt stones, highly polished gizzard stones and tuhua (obsidian) that he himself ploughed up at Hatuma. Wilson also mentions stone adzes and stone chisels found on farms in Hatuma, and two maire club — pointed at one end, tapered at the other end and about six feet long found by Mr. Cliff Schroder in his swamp.

As mentioned previously, this historical background is supplementary to the history provided by Pat Parsons in Bickler and Clough (2013) and any information provided by Brian Morris. History associated with the areas visited during the field survey have been given more attention. It is acknowledged there may be gaps in the historical research due to the vast size of the assessment area.

This historical background chapter demonstrates the long association with the area by Māori and later, European Settlers.

Previous Archaeological Work

This chapter will review what is known about the archaeology of Hawke's Bay and more specifically the project area, based on archaeological research, development-driven investigations and site surveys in the region.

Archaeological survey

Archaeological survey began in Hawke's Bay in the 1940s with J.D.H. Buchanan who started to systematically record Māori pā in the region (Fox 1982). However, after he retired there was little archaeological activity in Hawke's Bay until the mid-1970s (Fox 1982). The systematic recording of sites recommenced in 1975 with the New Zealand Historic Places Trust (now Heritage New Zealand Pouhere Taonga; HNZPT) facilitating archaeological surveys throughout Hawke's Bay. Coastal site surveys around Napier (Jeal & Walton n.d., Menzies & Jeal 1976), Waimārama (Ritchie & Cave 1975); Ocean Beach (Gumbley 2001, Prickett 1990a), Te Apiti (Hunter 1993) and Pōrangahau (Jones & Tanner 2002) show a landscape of archaeological sites concentrated along the coastline. Inland site surveys at Fernhill (Fox & Jeal 1978), Maraekakaho (Fox & Jeal 1979), Te Aute (Fox & Jeal 1981), and Waipukurau (Millynn & Nevin 1977) show how these settlements also extended inland up significant rivers and around lakes. Nevertheless, there are many areas where surveys have not been conducted which limits our ability to understand how the landscape in Hawke's Bay was settled and utilised by Māori.

Several archaeological surveys are of particular interest in this project area. In 1985, Louise Furey undertook several surveys of Hawke's Bay state forests for the New Zealand Forest Service. This included a survey of the Gwavas State Forest which is adjacent to the proposed dam and reservoir. Three sites, which had previously been recorded in 1979, were visited again in 1985. U21/4 and U21/5 are recorded as pā and carved pou were evident at the time of the 1985 site visit. The report notes U21/6 had been destroyed. These sites are not in the vicinity of the proposed works.

Millynn and Nevin (1977) undertook a survey of the Waipukurau area in 1977, covering a semi-circular area (6-mile radius) bordered to the north by the Tukituki River. The survey was centred around the Lake Whatumā basin and resulted in 10 new sites being identified and recorded in an area where only two sites had been recorded previously. Three of the sites were pā, five were pits and terraces, one site included three large middens, and the last site was comprised of five stone rows and midden. They concluded the area was not heavily populated, the Tukituki River was a thoroughfare through the region, and that Lake Whatumā was an important source of food.

Pukekaihai pā (V23/5) is located within Paul Hunter Memorial Park (Figure 13), on a hill that was a prominent landform adjacent to Lake Whatumā. The lake was once much larger than it is today and would have extended in this direction as far as Racecourse Road. The pā was first taken for the Waipukurau stockade circa 1858 when the Crown reserved 5 acres on the hill for a military encampment. Correspondence indicates construction of the stockade occurred circa 1863 (Wilson 1976). The water reservoir for the town was built in 1910 on the site of a spring known and utilised by Māori, and houses now cover the slopes. In 1977, all that remained of the pā was one pit and five terraces.



Figure 13 Pukekaihu pā, mid-20th century. Source: CHB museum.

Also recorded by Millynn and Nevin (1977), Kaimanawa Pā (U23/1) is located near the base of Pukeora Hill on an old river terrace adjacent to the Tukituki River.

And finally, Te Moana-i-rokia (U23/3) is located on a hill behind the Woburn homestead on Hatuma Road. The following snip is taken from a 1952 aerial image (Figure 14).



Figure 14 A 1952 aerial image (Crown_230_1993_3) of Te Moana-i-rokia pā, Hatuma Road. Source: Retrolens.

Many archaeological features on Te Moana-i-rokia have survived over the years and many are still evident in recent aerial imaging such as Google Earth (Figure 15).



Figure 15 Aerial photograph looking northeast at Moana-i-rokia pā (U23/3) taken in 1990. Source: Allen (1994).

In 1981, Fox and Jeal surveyed the area from Waipawa north to Te Aute. They recorded 28 new sites, 8 of which were pā, 8 open settlements or kāinga and 12 pit/terrace complexes. It was concluded the area was heavily occupied by Māori in prehistoric and early historic times, but that the distribution of sites was not uniform.

V23/19 was one site recorded by Fox and Jeal who noted at least 18 pits (Figure 16). This site was also identified by Parsons (1999: 284) and Walton visited the site in 2002. Parsons said that Ihaia Hutana called the site Kaitoroa, but Wilson refers to it as Toto a Pua (1951b: 37). With no source cited, MacGregor uses the name Toto o Puna (1970: 145).



Figure 16 A 1943 aerial image (Crown_258_H_28) of Kaitoroa pā, Lindsay Road. Source: Retrolens.

The site record form notes damage to parts of the site over time, including damage by the roads Lindsay and Scenic, two dwellings and farming practices (Figure 17).



Figure 17 Photograph of pits taken by Walton in September 2002. Source: ArchSite.

Hunter (1992) undertook an archaeological survey along the Tukituki River, Rotoatara hills and Kaokaoroa Range between April 1991 and March 1992. One hundred and forty seven sites were identified during the year. There were 131 pit/pit group/settlement sites, four horticultural sites and ten pā. Hunter concluded his report by saying “A very rich area in human settlement and history”.

The archaeological assessment by Bickler and Clough (2013) details an initial visual inspection of the dam area by Bickler in 2011, which was followed by a more detailed archaeological survey by Bickler and Clough in 2012 that covered “the larger footprint of the dam and reservoir”. The methodology describes how “the ground surface across [the] Scheme footprint was examined for evidence of occupation” and that “Exposed and disturbed soils were examined where encountered for evidence of earlier modification, and an understanding of the local stratigraphy”. The results describe how the 2011 field visit examined the area of the proposed dam on both sides of the Makaroro River (western and eastern) and that no archaeological features were observed. The primary focus of the 2012 survey was the areas where most of the flooding would occur (western and southern side of the Makaroro River) and again, no archaeological features were identified. The report details that they did not survey on foot the land on the eastern and northern side of the river as access was restricted and forestry reduced the likelihood of archaeological features being present or identifiable. While the report has many useful photographs, it is without a map that details where the surveys occurred.

Archaeological research

In 1994, Mark Allen investigated the development of socio-political complexity in Hawke's Bay by analysing the form and distribution of 128 pā in the region (Allen 1992, 1994). He identified six polities (clusters of pā) occupying fixed territories that were centred around economic resource zones (Figure 18).

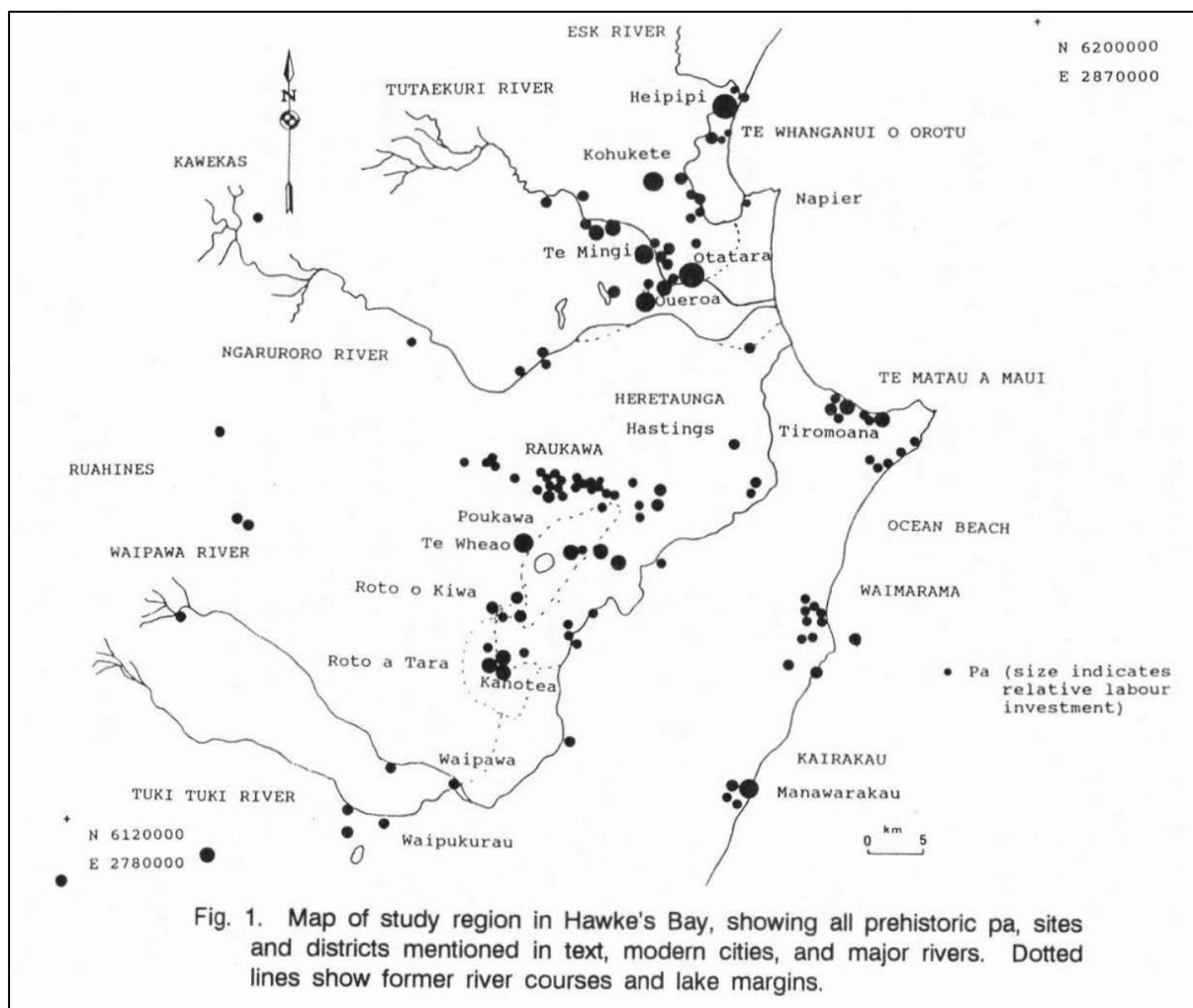


Figure 18 Image from Allen (1992:19) showing the pā in Hawke's Bay.

Allen's thesis mentions some of the key pā along the Waipawa and Tukituki Rivers and around Lake Hatuma (1994:186).

Tukipoho (V22/60) is above the Waipawa River, and Moana-Irokia (U23/3) is on the west side of Lake Hatuma. The latter is fairly large and may be considered a small regional centre because of archaeological evidence as well as Maori [sic] oral history. Two other sites in the area are both small-scale river sites. Pariokoro (V22/273) is along the Waipawa River, and an unnamed site (U23/1) is close to Pukekaihou along the Tukituki.



Figure 19 Aerial photograph of Pariokoro Pā (V22/273; facing north) on the southern bank of the Waipawa River, approx. 1800m northwest of its confluence with the Tukituki River. Source: Allen, 1994.



Figure 20 Aerial photograph of Tukipoho pā (V22/60; facing northwest) overlooking the Waipawa River in 1990. Source: Allen, 1994.

Development-driven archaeology

In 2020, a project called Ngā Ara Tipuna was undertaken in Waipukurau that focused on telling and celebrating the pūrākau and Māori history of Pukekaihou Pā, through on-site signage and information panels. An archaeological report (Pishief 2020) was used to interpret the features and extent of the site, minimise the effect of the necessary infrastructure through design on the remaining archaeological features as well as linking Pukekaihou pā via lines of sight and kōrero, to other pā in the area (Figure 21).



Figure 21 Looking north from Pukekaihou pā towards Mount Vernon. Source: <https://locales.nz/projects/nga-ara-tipuna>.

A pou and seat were erected at V23/19 as part of the Ngā Ara Tipuna project too (Pishief 2020).

This chapter has summarised the archaeological work that has been undertaken in this area. As the project area is large, the chapter focussed on the recorded pā. Given the scale of this project, it should be accepted that there is a high probability of encountering archaeological sites during the proposed works.

Results

This chapter will review the findings of our archaeological assessment from the desktop review of spatial information, consultation and field survey.

Desktop Review of Spatial information

A desktop review of the spatial information was conducted to utilise the technological advancements that have occurred over the past 14 years particularly around Geographic Information System (GIS) and the capability of spatial data. The findings are described below.

‘Island’ and ‘Donovan’s Gully’ land parcels

The TWSP requires 29.7 ha of Ruahine Forest Park (DOC) land be exchanged under Section 42(4)(f) of the FTAA for 170 ha of private land. The ‘island’ parcel was not included in the RWSS application, and this was identified in 2025. Subsequently it has been included in the TWSP application. Additionally, the parcel known as Donovan’s Gully, was included in the RWSS decision but was not included in the application.

Shapefiles for the land exchange were not shared with HSHB. The approximate locations of the ‘island’ and ‘Donovan’s Gully’ parcels were added into QGIS and are shown in Figure 22. It also depicts the 465 m contour line (465 metres above mean sea level, using the New Zealand Vertical Datum 2016). We were advised this is the maximum height or level of the reservoir.

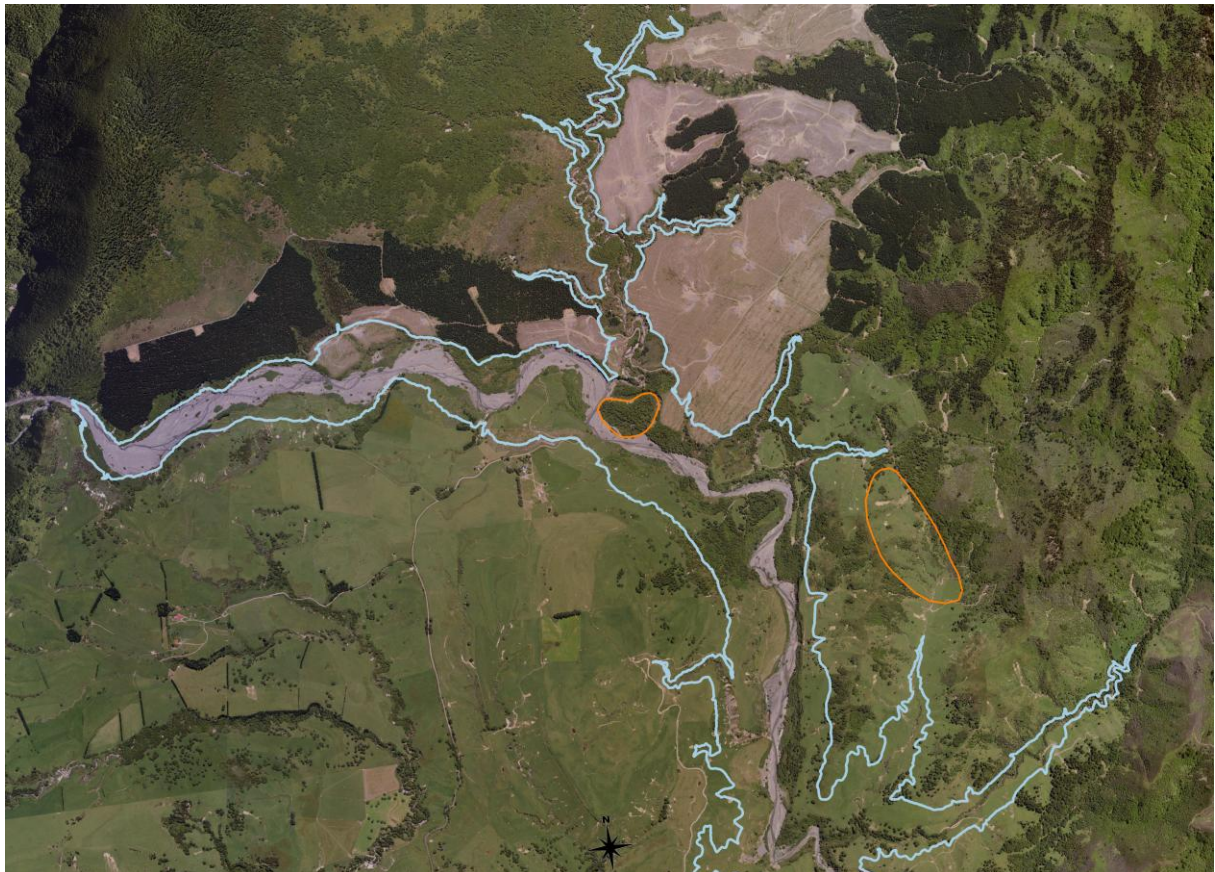


Figure 22 Approximate locations of the ‘island’ and ‘Donovan’s Gully’ parcels (orange polygons) that were reviewed for archaeological evidence. The blue line indicates the 465m contour. Image created in QGIS; ESRI Satellite basemap.

A brief review of LiDAR and historic aerial photographs was undertaken to determine if any archaeological features could be identified.



Figure 23 The 'island' parcel can be seen on the right-hand side of the photograph (looking north), the Makaroro River in the foreground. Source: S August.

An aerial photograph from 1951 illustrates that the 'island' parcel historically, has been covered in native trees. No archaeological evidence could be determined from historic imagery and LiDAR (Figure 24).

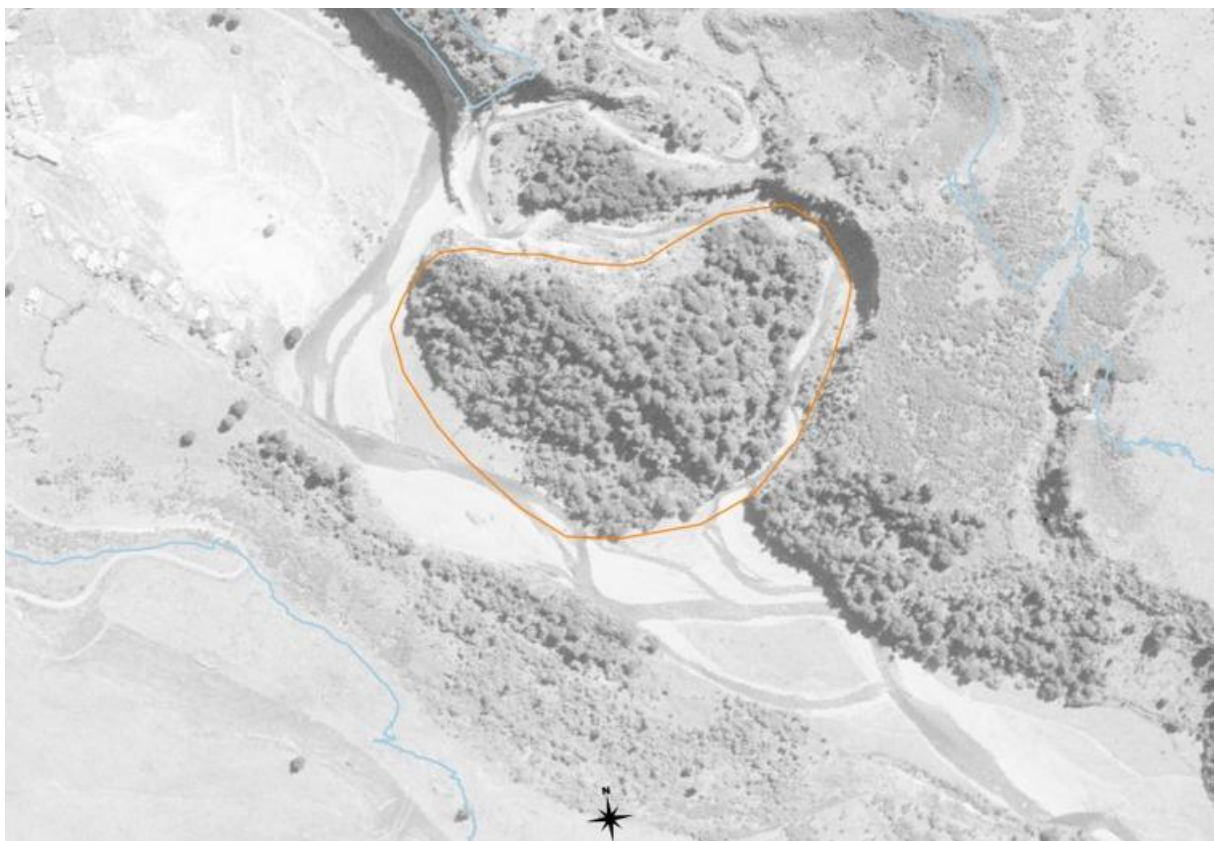


Figure 24 Retrolens aerial photograph from 1951 (Crown_541_1712_24) of the 'island' parcel of land (orange) that is to be included in the land exchange. The blue line indicates the 465m contour. Image created in QGIS.

No archaeological evidence could be seen in historic imagery or LiDAR in the vicinity of Donovan's Gully (Figure 25).

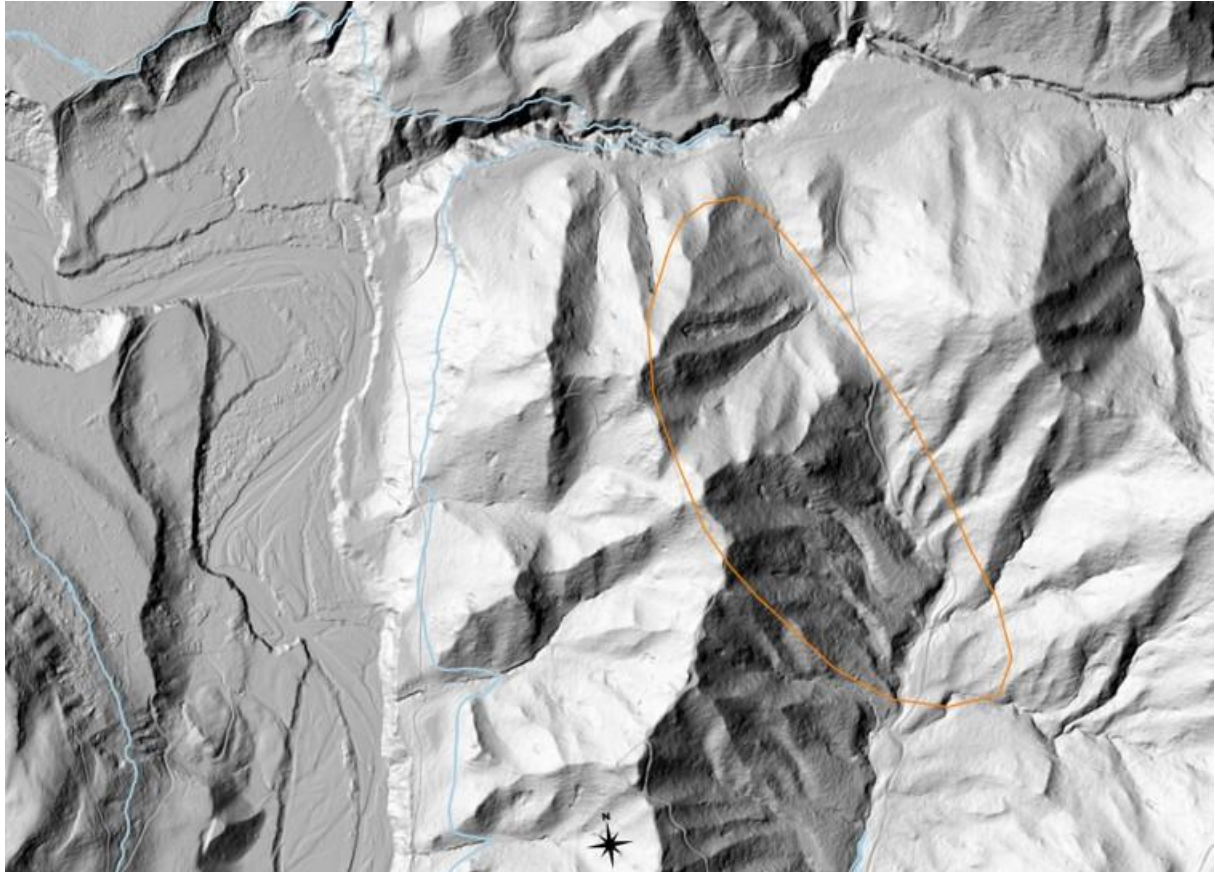


Figure 25 LiDAR imagery of the approximate location of the 'Donovan's Gully' parcel (orange). The blue line indicates the 465m contour line. Image created in QGIS.

Historic photographs and LiDAR of the reservoir, area of construction around the dam wall, and the land adjacent to the Alteration to the Primary Distribution Network of pipelines, were reviewed. No archaeological evidence was identified.

Further research identified three SASMs in the CHBDC District Plan that were close to the pipeline alteration, and four areas were noted adjacent to the reservoir following consultation with Tangata Whenua. Some of these areas were visited and are discussed below.

Field Survey

Site visits are necessary to locate unrecorded archaeological sites and to update recorded archaeological site records. It is important to gather accurate spatial data, take photographs, and record the site's condition. HSHB believe it is essential to meet with Tangata Whenua and to consult and engage with them about their cultural sites.

As mentioned above, Stella and Wikitoria met with Brian on the 15th of July 2026 to undertake the field survey. The parties combined vehicles at the junction where Makaroro Road intersects with SH 50. The first area to be checked was located just a short drive down Makaroro Road.

Alteration to Primary Distribution Network of pipelines

A previous discussion with Brian identified he was aware of an urupā, in the same location or close to, two of the SASMs. It was important to establish if Brian's urupā was one of the two SASMs (46 and 47) recorded on the CHBDC District Plan as urupā, or an additional urupā (Figure 26).

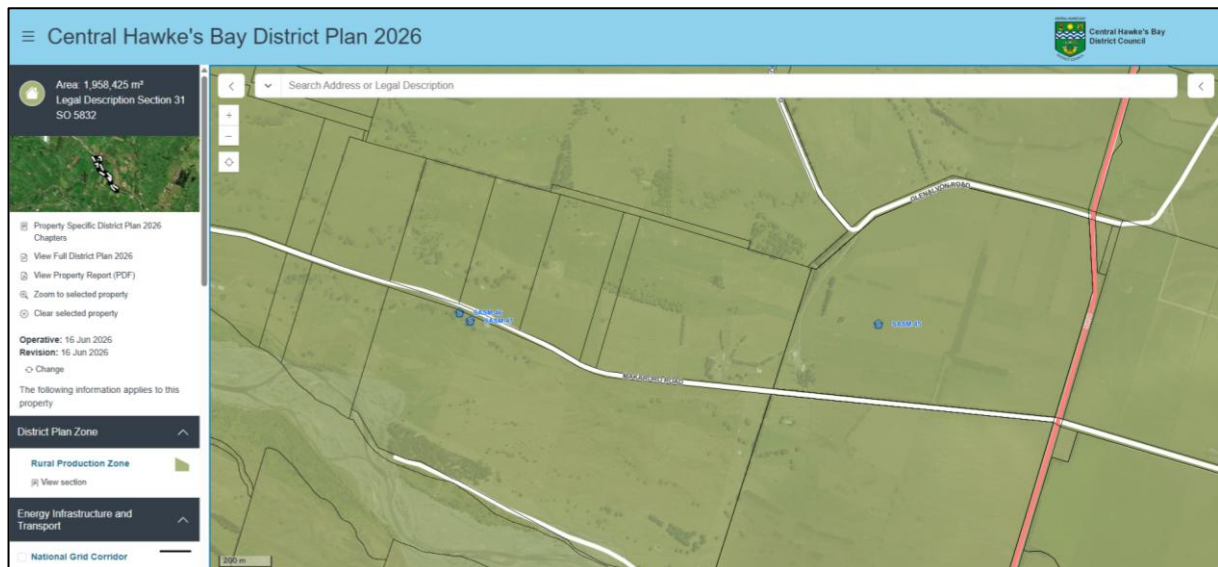


Figure 26 Snip of the locations of SASM 45, 46 and 47 from Central Hawke's Bay District Plan. Source: www.eplan.chbdc.govt.nz/

The urupā was pointed out to us by Brian. We were not allowed to jump the fence or enter the property, so we viewed the urupā from the roadside. The urupā is in a paddock immediately adjacent to Makaroro Road. The urupā is located on a narrow terrace below the roadside but sitting above the Waipawa River floodplains. The urupā is fenced and is easily distinguished by different coloured grass. The headstone described previously in the 'History after European arrival' subsection, was assumed to be knocked over and lying in the grass (Figure 27–28).



Figure 27 View south at the urupā Brian was aware of, enclosed by a one-wire fence on a river terrace, below the terrace Makaroro Road is on. Source: S August.



Figure 28 Image taken facing southwest showing a close up of the urupā. It is hard to distinguish, but there looks to be a headstone which has been knocked over near the middle of the urupā. Source: W Moore.



Figure 29 Locations of the three SASMs (pink triangles), photo locations (white photo icons) and location of urupā identified by Brian Morris (red polygon), along Makaroro Road and overlooking the Waipawa River. The proposed alteration to the primary distribution network of pipelines is indicated by the thick white line through the image. Image created in QGIS; ESRI Satellite basemap.

Coordinates obtained from QGIS, taken from the middle of the urupā are: 5583496.263N, 1893125.601E (NZTM). Measurements obtained from QGIS show the fenced area is approximately 21m x 21m. The southern edge of the urupā is approximately 30m from the proposed Alteration (please note there may be some degree of inaccuracy with coordinates and measurements).

Following the field survey, Stella contacted Kim Anstey, Planning Manager at the CHBDC and requested more information about the three SASMs. Kim relayed that the Sites or Areas of Significance to Māori (SASM) were introduced in the early 2000s and part of the change to the 2003 District Plan. Kim visited the archives and was able to find a submission against the plan that states the plan does not accurately mark the three cemeteries, and provides detailed information about their location and history, as known by the author of the submission, Bruce Worsnop (Appendix A).

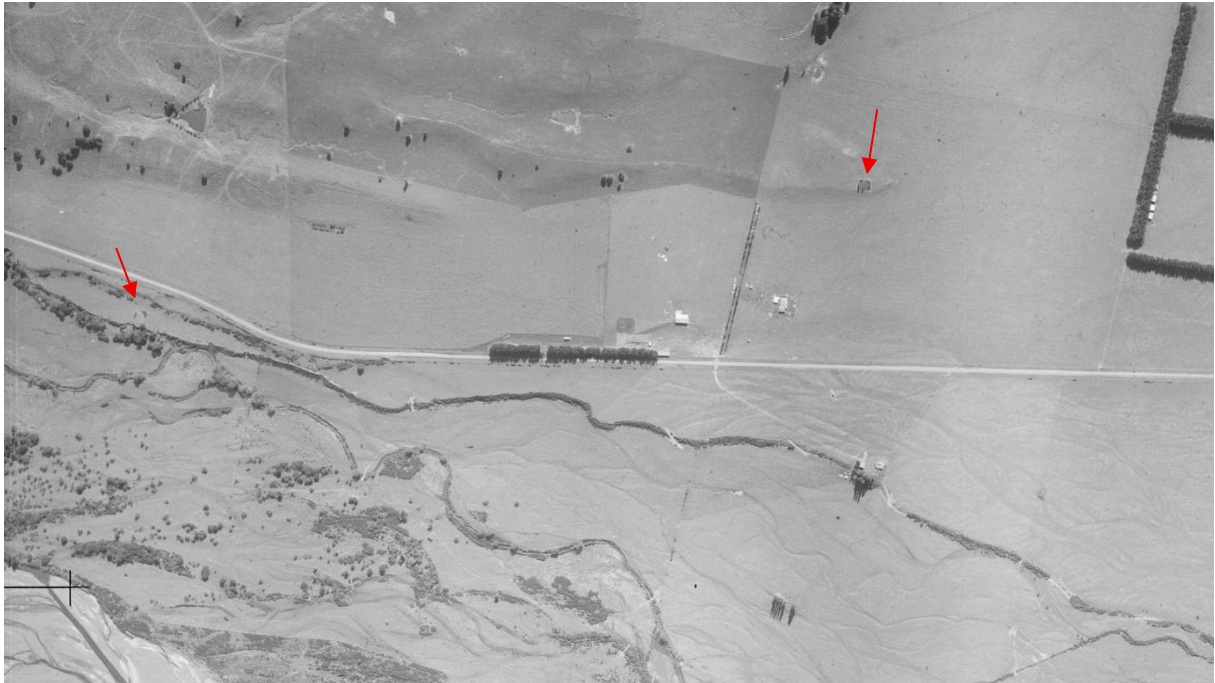


Figure 30 Snip of 1952 Retrolens image (Crown_541_1717) showing the locations of two cemeteries (indicated by two red arrows) on either side of Makaroro Road.

The CHBDC archive information along with the field survey results confirm the urupā visited with Brian is a cultural site but indicates the CHBDC need to accurately identify its location as well as the other two SASMs in the area (Figure 30).

HSHB was advised the proposed designation change v.15-3 has been drawn, but the location of the edge of the urupā relative to the designation is not known exactly, other than the designation is already away from the site and would be further away from the site with the proposed amended alignment. The designation has not yet been adjusted because TWSL do not yet have the power to adjust it but this amendment in alignment to be further away from Makaroro Road and the urupā will form part of the Fast-track Approvals Act application as an alteration of designation. It is recommended that TWSL ensure the southern edge of the urupā is 50m from the alignment.

Dam and Reservoir areas

Four sites of cultural significance were identified through consultation with Tangata Whenua however, we could only get access to two (Figure 31). The results for these two areas are discussed below.

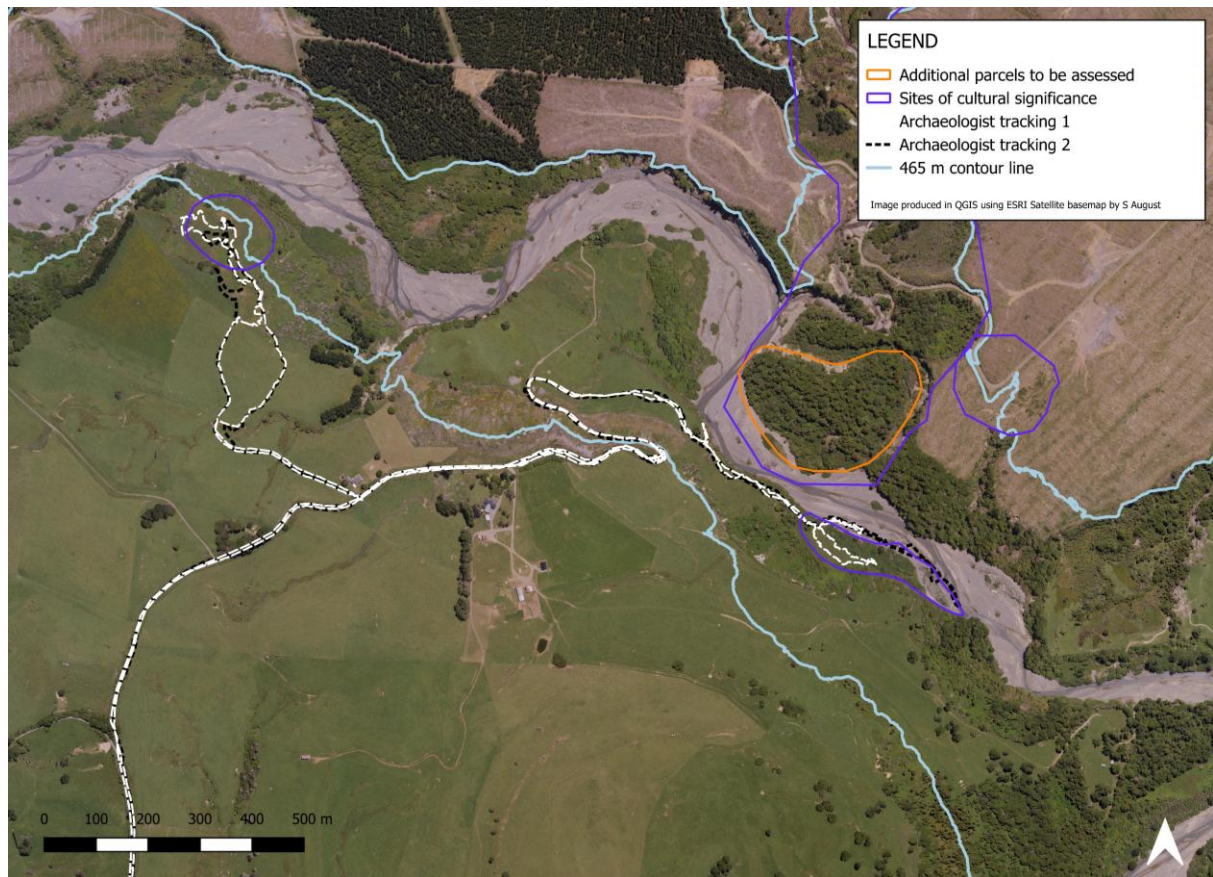


Figure 31 Image showing the sites of cultural significance, 465 m contour line and archaeologist tracking during the field visit on 15 July 2026.

Area 1 – terraced pā and māra

The area was highlighted in the Cultural Assessment as a terraced pā and maara (Kamau 2025). Review of aerial images was disappointing as the quality of the images were low, however LiDAR showed two small cone shaped hills, adjacent to each other, separated by a narrow saddle or gap (Figure 32). This area sits just above the 465 m contour line.

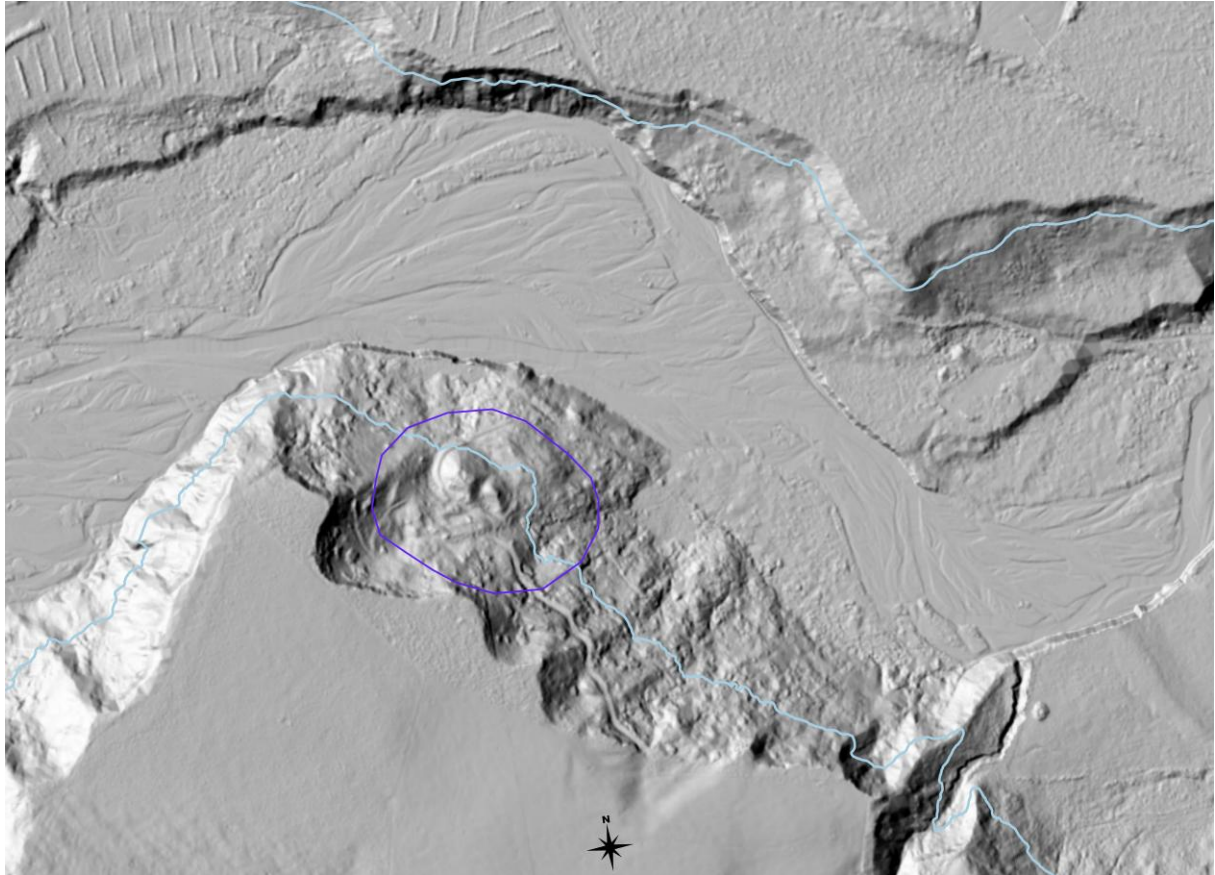


Figure 32 LiDAR of Area 1 (purple polygon) highlighting the two cone-shaped hills. The blue line indicates the 465m contour line. Image created in QGIS.

Turning off Makaroro Road onto Wakarara Road, we continued down the road for a while heading towards where the road ends, not far from Makaroro River. We parked in front of a house opposite the wool shed and walked northwest through a relatively flat paddock towards the area. We used the information in the Cultural Assessment to determine where to go.

We walked to the edge of the paddock, which dropped off to an undulating area assumed to have eroded from the terrace above a very long time ago. The landscape is elevated above the river and currently in pasture, sparse native trees, blackberry and other scrub (Figures 33–34).



Figure 33 Image taken facing north showing the undulating landscape and vegetation as well as the two cone-shaped hills (left of two people) with the Makaroro River in the background. Source: S August.



Figure 34 Image taken facing northeast from the upper terrace looking down at Area 1, the two cone-shaped hills separated by a narrow saddle. Source: W Moore.

The top of the largest cone-shaped hill was unusual in that there was a depression in the northwestern corner, two flat areas in the northeastern corner and a higher berm along the southern side. The sides of the hill were sloped. The top of the smaller cone was flat with no other features. A farm track has been cut around the side of the hills (Figure 35–38).



Figure 35 Image taken facing north standing in the southeastern corner showing the top of the largest cone-shaped hill. Source: W Moore.



Figure 36 Image taken facing northeast standing on top of the largest cone shaped hill. Wikitoria is standing at northeastern corner of the hill. There are two quite flat areas here. Source: S August.



Figure 37 Image taken facing north standing on top of the largest cone shaped hill. The ranging pole is at the back of the depression. Source: S August.



Figure 38 Image taken facing northwest standing on top of the smallest coned-shaped hill showing how flat the top is. Source: S August.

The surrounding area was investigated for archaeological evidence. The soil had a heavy concentration of river stones of varying sizes. There were a few spots where piles of rocks were located. We were unable to interpret whether the piles were deposited naturally or not. No evidence of fires or other activities such as charcoal, fire cracked rocks or darker soil were identified. The area was sheltered from wind and warmer than on the terrace above. The area does not look to have suffered any erosion or flooding for some time.

A fairly regularly-shaped depression was identified on the southwestern side of the small cone-shaped hill. The depression was approximately 3m x 2.5m. We were unable to determine with any certainty if the depression was archaeological due to poor condition of the site (Figure 39).



Figure 39 Image taken facing northeast with the depression in the foreground. The small cone-shaped hill and saddle can be seen in the background. Source: S August.

After a thorough survey of the area, we did not find conclusive evidence of archaeology. While there were some attributes that suggest the site could be archaeological, we cannot say conclusively the site is an archaeological site, and therefore, we cannot record this site in ArchSite. We do not refute the claim though, in the Cultural Assessment that this site is a pā and māra and similarly do not refute that this site is a cultural site of significance to Tangata Whenua.

Area 2 – Ruaiwi

The second area adjacent to the reservoir was described in the Cultural Assessment as ruaiwi or buried bones (Kamau 2025). It is said to be located opposite a terraced pā on the northern side of the Makaroro River. Aerial photographs and LiDAR were reviewed but were inconclusive. The information in the Assessment was used to determine where to go.

We drove along Wakarara Road towards Yeoman's Track (a DOC track that is currently closed) towards the Makaroro River, some way through a paddock as far as we could safely go and then continued on foot. We descended towards the edge of the river through bush and blackberry.

The area was a low-lying area immediately adjacent to Makaroro River. Our intention was to visually inspect the general vicinity and exposed soil for archaeological evidence. Wikitoria checked along the riverside and Stella and Brian checked the grassy/weedy verge a bit further back. The survey conditions were extremely challenging. The overall area was covered in long grass, trees, and typical river vegetation (Figures 40—41). The area was very wet with a creek cutting through and a waterfall nearby.



Figure 40 Image taken facing north looking across the Makaroro River showing the vegetation in the area. Source: W Moore.



Figure 41 Image taken facing east showing the vegetation and survey conditions in the area. Source: S August.

The area adjacent to the river was a typical riparian zone with shrubs and continually wet ground, mostly made up of river stones (Figure 42–43). The exposed areas along the riverside showed no archaeological evidence.



Figure 42 Image taken facing southeast showing the riverbed and area immediately adjacent to the Makaroro River. Source: W Moore.



Figure 43 Image taken facing west showing what the riverbed looked like and a waterfall in the background. Source: W Moore.

Because this area is located adjacent to the Makaroro River and is very low-lying, it is highly likely that the area has been flooded numerous times. If there was archaeological evidence in this area, it would have been washed away.

As discussed above, we do not refute the claim that this site has graves or buried bones and similarly do not refute that this site is a cultural site of significance to Tangata Whenua.

Overview of Spatial information

The following map (Figure 44) illustrates some of the spatial information we have been able to ascertain for the assessment area. It shows archaeological sites and some cultural sites and significant areas in relation to the proposed works.

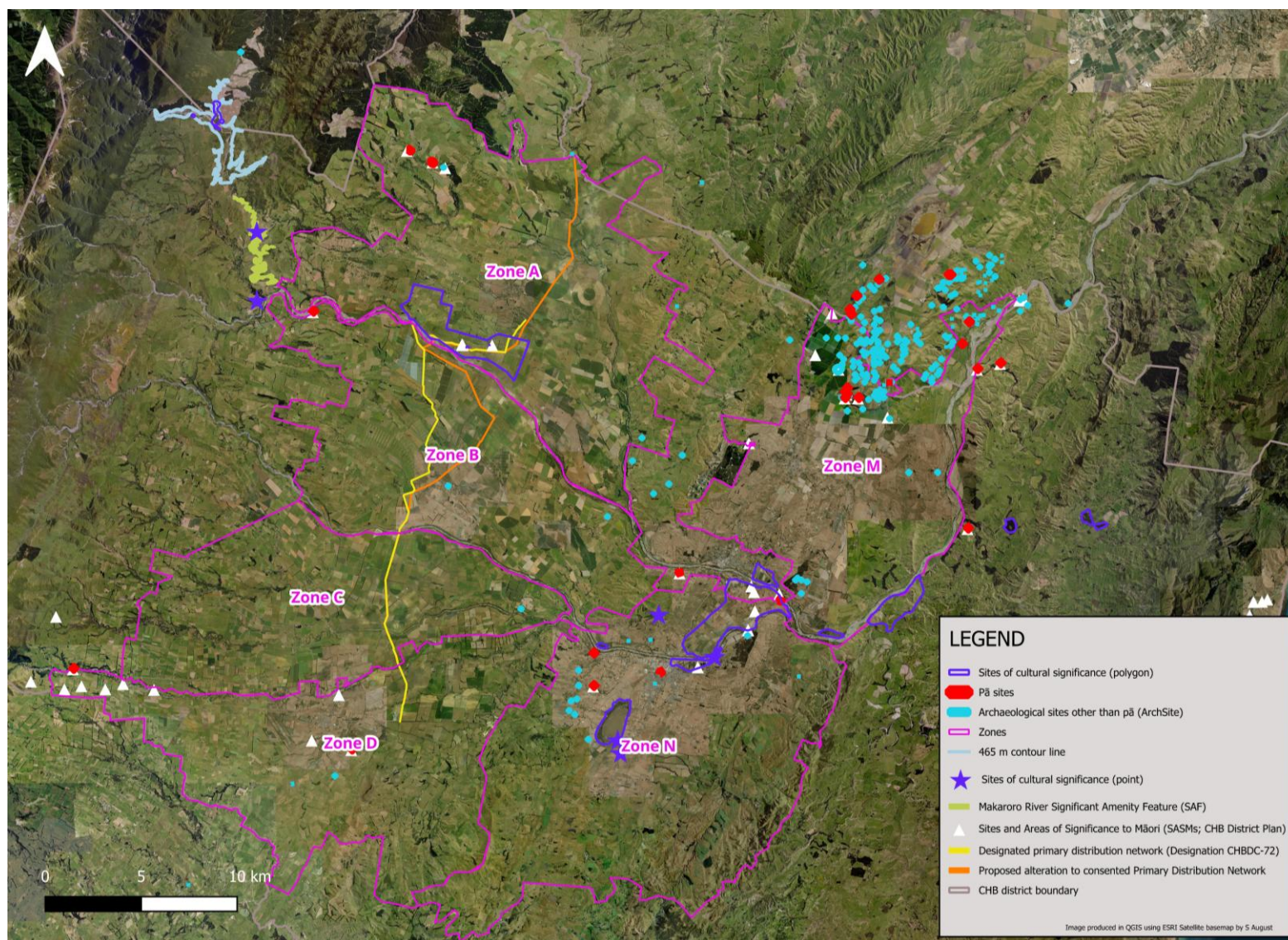


Figure 44 Overview of archaeological and cultural findings within the TWSP area.

There are a few key findings from the spatial information that need to be highlighted.

- i) ArchSite locations are not always accurate. Site recording has continued since the 1940s and over that time, site accuracy has improved. However, it is common for sites that were recorded some time ago, to not be precisely in the right location in ArchSite.
- ii) The extent of the site in ArchSite can vary depending on the spatial data. Older sites only have one GPS coordinate and therefore are shown as a star with a site accuracy square (100 x 100 m). Sites that have been recorded recently can be shown as a polygon. It is important to understand that some sites represented by a star and accuracy square, can be much larger or much smaller than the actual site extent (Figure 45).

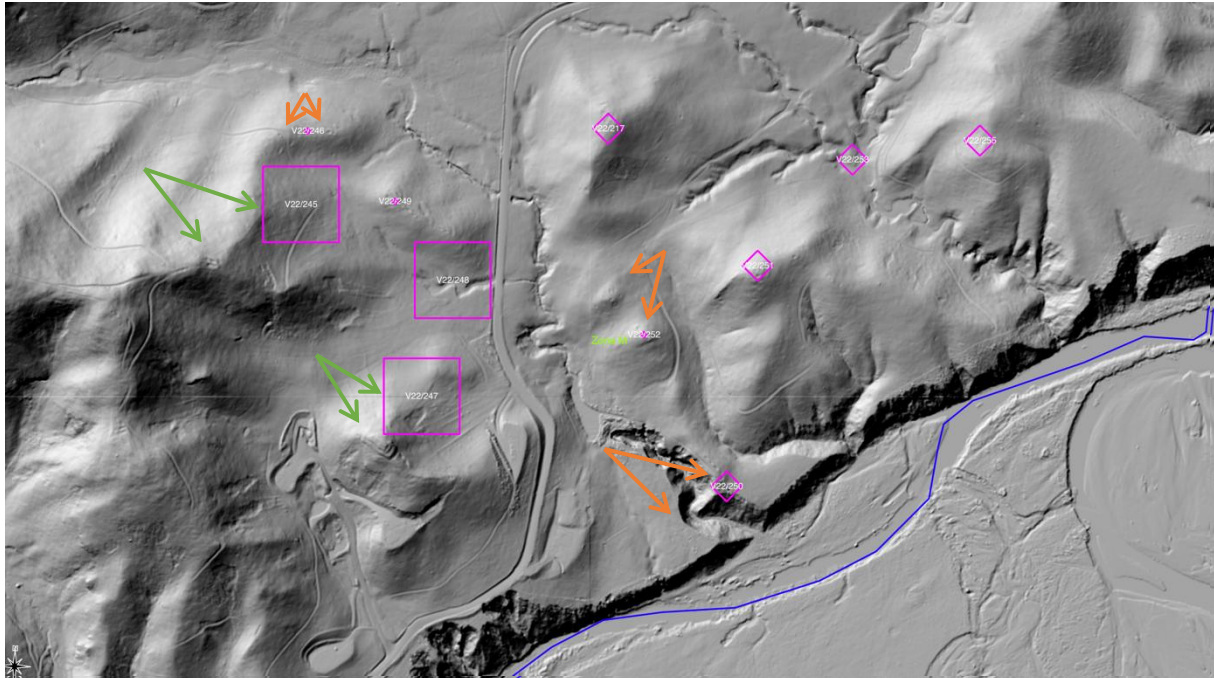


Figure 45 Recorded archaeological sites from ArchSite superimposed on LiDAR in part of Zone M. The green arrows indicate sites where their locations are not accurate. The orange arrows indicate sites that are much larger than the site polygons suggest.

- iii) The quality of aerial images varies and the images for some of the assessment area were not great. However, when comparing historical aerial images with current aerial or satellite images, degradation of archaeological sites is evident because sites are smaller, harder to discern, have less defined features or are completely invisible.
- iv) Within the assessment area, there are large spaces void of any archaeological sites. The reason is not known but it could be attributed to survey bias. It is possible no archaeological surveys were undertaken in the area, or if they were done, permission was not given for the survey to occur at a property. As this area has been developed and intensively farmed since the mid-1800s, it is possible the sites have been damaged or destroyed. The lack of recorded archaeological sites does not mean there are no archaeological sites in the area and there may be subsurface archaeological features.

- v) Some sites of cultural significance have been included in this archaeological assessment and are shown in Figure 44. This information has been included because archaeological sites often coincide with cultural sites and areas. We acknowledge that the information included is not all the culturally significant sites within the assessment area.
- vi) The Ruataniwha Plains is a highly modified landscape that has been changed by flooding, farming, cropping and development. The ‘smoothing’ or blurring effect of ploughing is commonly seen in LiDAR imagery. Unfortunately, damage caused to archaeological sites by ploughing is a common occurrence.
- vii) Some archaeological features cannot be seen in historic aerial imagery or LiDAR, such as midden or terraces.

There are large areas void of archaeological sites within Zones N and M. Zones N and M are, however, culturally significant areas with high concentrations of archaeological sites in some places. The area is highly modified which does impact the visibility of archaeological sites. The area was settled very quickly after the Waipukurau Purchase in 1851 and farmed, a land use that has continued. Large areas of land have not had reason to be subject to archaeological investigation. Further archaeological investigation when the proposed secondary pipeline network is finalised is warranted.

To summarise, no archaeological sites were found from the review of spatial information or field survey. We did, however, find several cultural sites that are adjacent to the proposed Alteration of the primary distribution network. On reviewing the wider project area, there is a likelihood of unrecorded archaeological sites and subsurface archaeological features, partially intact archaeological materials, and evidence below the ground.

Constraints and Limitations

This chapter will discuss the nature of the constraints and how it impacted the effectiveness of the survey or limited our findings.

Project Scale

The scale of this project has been daunting and there was a significant amount of project history to peruse and consider. Many documents and information could not be located and shared with us and there are many project details still to be confirmed. This has limited our ability to undertake this assessment.

Access

Access was difficult to arrange, and in some cases, personnel were unhelpful. In terms of field survey, this limited our ability to access areas and perform our duties.

Vegetation

In places, the vegetation (blackberry, grass, shrubs and trees) was very overgrown, dense and impeded our visibility of the ground's surface and therefore, our ability to assess the area effectively.

Methodology

Sometimes, even if we take all necessary steps, georeferencing aerial images can be difficult and the images may be slightly misaligned. This does not affect the information provided in this assessment greatly, however it is something to keep in mind when looking at the aerial images provided. The quality of the aerial images varies and can hinder analysis of historic aerial photographs due to shadows or a grainy appearance.

Desktop research, spatial analysis and field survey were used to complete this archaeological assessment. The TWSP assessment area is a large assessment area comprised of several zones. HSHB were asked to briefly review using GIS and spatial information, the area around the dam and reservoir including the 'island' and 'Donovan's Gully' parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed up with consultation and field survey. Some areas had to be prioritised due to time and cost pressures.

Activities

Farming—agriculture and horticulture, are the primary activities undertaken in much of the assessment area, accompanied by housing and construction. As such, damage associated with those activities has occurred on the landscape.

Forestry—commercial and native, dominate a large portion of the landscape, primarily in the Makaroro Catchment area. Dense native bush and commercial pine forests restricted access to areas. LiDAR showed the impacts of recent activities, such as recently harvested tree debris in rows, rather than an indication of what the landscape might have been used for prior to planting. The northern side of Makaroro River was not surveyed as the likelihood of archaeology being present or identifiable was low.

The damage to archaeological sites is evident through:

- Loss of site definition
- Lack of site visibility, and
- Destruction of site in entirety

This can be caused by:

- Grazing
- Ploughing
- Earthworks
- Wilding propagation
- Forestry
- Construction
- Degradation over time, and
- Natural processes

It is necessary to preface that it is possible that there are archaeological sites that were not identified for reasons such as:

- Unrecorded sites located sub-surface
- Beyond recognition due to site damage
- Vast size of assessment area, and
- Limited time and cost pressures.

Values

It is acknowledged that Māori cultural sites (and therefore values) are present within the assessment area. This archaeological assessment focuses on archaeological values only. This is a constraint as archaeological values and cultural values are usually (but not always) synonymous.

Archaeological and Other Values

This chapter will provide an assessment of the archaeological and other values a site or sites hold.

Archaeological Values

Archaeological value is the potential of a site to provide information about the past or the ability of the site to represent a sample (Walton 1999). Archaeological value of the sites has been assessed.

Reservoir Zone

The Gardner and Yeoman Sawmill site will be permanently flooded by the TWSP. As such the site is included as an Integrated Offset and Mitigation Approach (IOMA) project for the TWSP by means of a public recreation space and visual displays commemorating the history of the area. The Sawmill is not an archaeological site by current definitions, however, is a historical site of significance. Research about the sawmill has not been conducted as part of this assessment.

Site	Value	Assessment
Gardner and Yeoman Sawmill	Condition	Poor, some site remains have been removed for restoration. It is not known what remains on site.
Early 20 th century site	Rarity/ Uniqueness	Other sawmills in the immediate area, but Gardner and Yeoman's was the last to close in 1961.
Not recorded in ArchSite or scheduled for protection	Contextual Value	The site has contextual value as early 20 th century pioneering activities.
Included in Bickler and Clough Assessment	Information Potential	There is potential for information to be recovered by archaeological means and would be similar to other early 20 th century mill sites/layouts.
	Amenity Value	Low as not much, if anything, remains at the site.
	Cultural Associations	Non-Māori, early European industrial activities.

Site	Value	Assessment
U21/13 - Ellis Hut This site is located less than 2 kms from the Reservoir site.	Condition	Conserved c.1994 and one of DOC's actively managed Historic Places.
	Rarity/ Uniqueness	Rare – Oldest surviving hut in Ruahine Range and one of the oldest surviving buildings in the NZ mountain region.
	Contextual Value	The site has contextual values as an element of European and NZ farming history associated with Poporangi Station. Called Ellis Hut after an infamous murderer who temporarily took refuge there and was captured at the hut in 1904.
	Information Potential	There is potential for information to be recovered by archaeological means, but the hut is not forecast to be affected by the proposed works or investigated.
	Amenity Value	High – Built in primitive fashion and still used today for farming, recreation and wild animal control.
	Cultural Associations	Non-Māori, early European and pastoral farming.

Zone A – Proposed alteration to primary distribution network

The following archaeological sites are recorded in ArchSite in or close to Zone A, with only one site close to the proposed alteration.

Site	Value	Assessment
U22/6 – Terraced Pā This site is located less than 300m from the end of the proposed Alteration and sits just outside of Zone A and the CHB district boundary.	Condition	Good.
	Rarity/ Uniqueness	Fairly common as a small terraced pā, however there are not many pā recorded in the nearby vicinity.
	Contextual Value	The site has contextual values as an element of early Māori occupation within inland areas.
	Information Potential	There is potential for scientific information to be recovered by archaeological means, however there is no intention to damage this site, but it is near proposed works associated with the Alteration.
	Amenity Value	Unknown, assumed private ownership and limited access therefore amenity value is limited.
	Cultural Associations	Early Māori.

Site	Value	Assessment
U22/1 – Pā U22/2 – Pā U22/4 – Pits These sites are located approx. 9 – 11 kms from the reservoir site.	Condition	Sites were recorded in fair/good condition when last visited. Some features look damaged by farming practices.
	Rarity/ Uniqueness	Rare – while there are several pā in the locality, the pā are recorded as having intact palisade posts, or post holes and midden.
	Contextual Value	These sites have contextual value as an element of early Māori occupation inland near the foothills of the Ruahine Ranges.
	Information Potential	There is potential for scientific information to be recovered by archaeological means, however there is no intention to damage these sites.
	Amenity Value	Unknown, assumed private ownership and limited access therefore amenity value is limited.
	Cultural Associations	Early Māori.

Zone B – Proposed alteration to primary distribution network

Three sites are recorded in ArchSite in Zone B of which one is pā, the other two being early European sites.

Site	Value	Assessment
U22/3 – Pā This site is located on the bank of the Waipawa River, 8 kms from the reservoir and 6kms from the alteration in Zones A and B	Condition	Unknown, no recent information, appears from satellite images to be mostly covered in native bush.
	Rarity/ Uniqueness	Rare – while there are several Pā in the area, this site is associated with a battle between Ngāti Whatuiapiti and Ngāti Upokoiri with Ngāti Tūwharetoa.
	Contextual Value	The site has contextual values as an element of early Māori occupation on the Waipawa River near the foothills of the Ruahine Ranges.
	Information Potential	There is potential for scientific information to be recovered by archaeological means, however there is no intention to damage this site.
	Amenity Value	Unknown, assumed private ownership and limited access therefore amenity value is limited.
	Cultural Associations	Early Māori.

Site	Value	Assessment
U22/7 – Flour Mill The site is located less than 700m from the Alteration in Zone B.	Condition	Largely destroyed. Houses built on site.
	Rarity/ Uniqueness	Nothing left to assess.
	Contextual Value	The site has contextual value as an element of early European settlement and industry in the small settlement of Ongaonga.
	Information Potential	There is potential for scientific information to be recovered by archaeological means, however there is no intention to damage this site.
	Amenity Value	Nothing left to assess.
	Cultural Associations	Non-Māori, early European industrial activities.

Site	Value	Assessment
U22/9 – Coles Joinery Factory The site is located less than 700m from the Alteration in Zone B. Heritage New Zealand Rārangī Kōrero List no.172, cat. 1.	Condition	Good.
	Rarity/Uniqueness	Rare – Important remnant of New Zealand's industrial heritage, significant local landmark, reused as a museum and contains examples of tools and machinery.
	Contextual Value	The site has contextual value as an element of early European settlement and industry in the small settlement of Ongaonga.
	Information Potential	There is potential for scientific information to be recovered by archaeological means, however there is no intention to damage this site.
	Amenity Value	High – local landmark, important contribution to a largely authentic late Victorian early Edwardian rural town.
	Cultural Associations	Non-Māori, early European industrial activities.

Zones N and M

There are approximately 77 recorded archaeological sites within Zone M. This has increased from 33 when Bickler and Clough did their archaeological assessment in 2013. Bickler and Clough do not note any sites in Zone N but now there are 14 recorded sites. There is also a significant amount of documented Māori and European history in these zones.

We have provided a brief overview of the spatial information and would expect a more detailed assessment be undertaken in these zones for future work. Of all the zones, Zones N and M have the highest potential to 1) encounter sites and 2) encounter sites with high archaeological value.

Other Values

This area has cultural, traditional, historic, aesthetic and landscape values.

We are aware a Cultural Impact Assessment for this project was completed by Brian Morris in April 2026.

Assessment of Effects

This chapter will identify and evaluate how the proposed TWSP will have an effect on the environment and community. The parameters constraining this assessment are; a brief review using GIS and spatial information of the area around the dam and reservoir including the ‘island’ and ‘Donovan’s Gully’ parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed up with consultation and field survey.

Alteration to Primary Distribution Network of pipelines

Little detail has been provided by TWSP to HSHB about the water distribution network of pipelines and their installation. We have received a shapefile of the primary distribution alignment that was consented through the RWSS in December 2016 (Designation CHBDC-72) and another shapefile indicating an alteration to this alignment being proposed. HSHB was advised the detailed engineering design of the primary distribution network was currently being undertaken and therefore, not finalised. It was also noted there was some flexibility with the concept design. We refer to the proposed pipeline alignment as the Alteration.

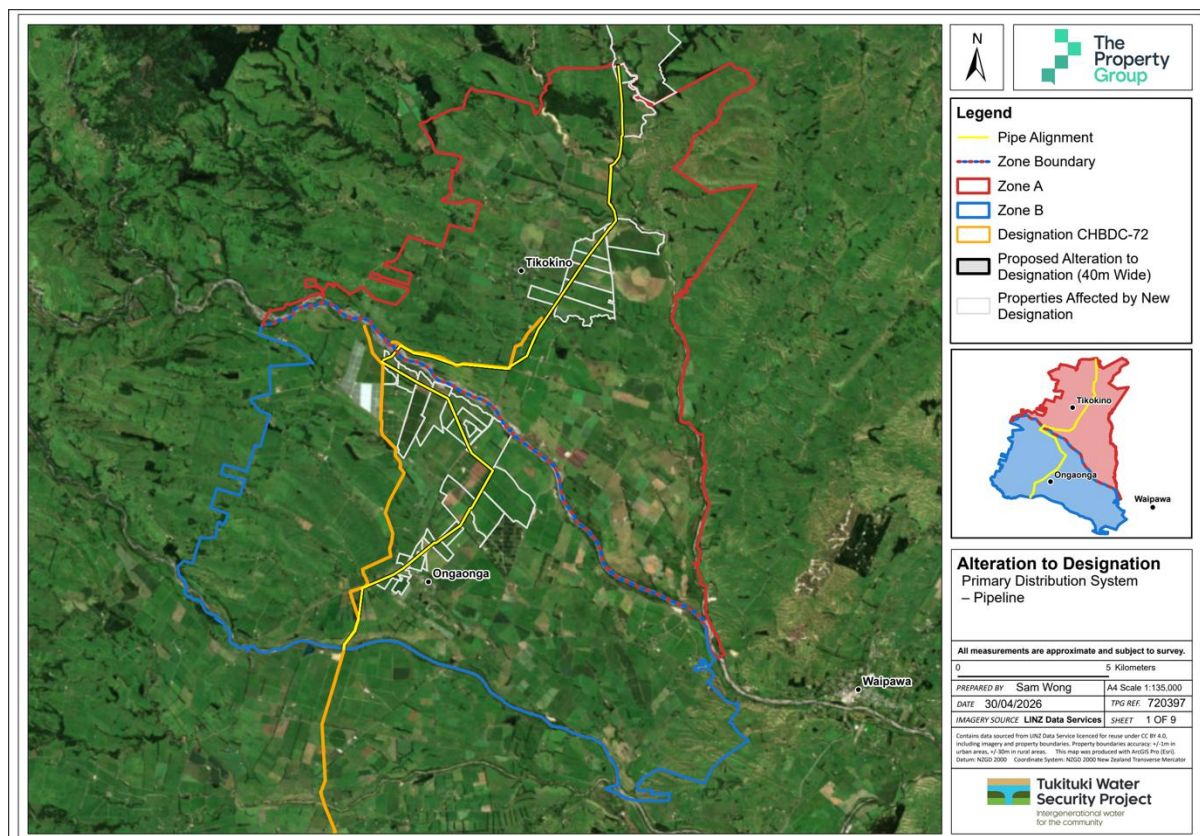


Figure 46 Map showing the proposed Alteration to Designation (yellow line) and the Designation CHBDC-72 (orange line) of the Primary Distribution System for the TWSP. Provided by P McKay, 2026

As shown in Figure 46, the proposed Alteration spans the majority of Zones A (red) and B (blue). The exact distance has not been provided by TWSP but when measured on QGIS it is approximately 28.5 kilometres long. The legend details the proposed Alteration is 40m wide.

Historical research and further investigation has confirmed two urupā, SASM-46 and SASM-47 located near the proposed Alteration. One urupā could be affected by works because it is only 30m from the edge of the proposed Alteration. The urupā is on a narrow terrace elevated above the

Waipawa floodplains where the proposed Alteration works are planned. However, the proposed Alteration installation works (details of which have not been shared with HSHB) could affect the urupā by undermining or affecting the stability of the terrace the urupā is located on. There is also the possibility that the urupā extends beyond the area known and fenced. It is recommended to move the proposed Alteration away from the urupā to provide a buffer of at least 50 metres.

Part of the proposed Alteration is located within the area previously known as the Tikokino Native Reserve. As evidenced within this assessment, the Tikokino Native Reserve and wider area was occupied by Māori. The evidence mentions pā, urupā, cultivations and the use of the nearby bush area (food and resources). There is a very high possibility of finding archaeological material associated with those activities. As mentioned previously (on page 28), squares of tilled soil, presumed to be kumara pits were found on the river flats.

It is necessary to consider whether the distribution of archaeological sites on ArchSite is prejudiced by bias. Zones A and B have historically, been farmed intensively. Agricultural and horticultural practices are known to damage archaeological sites and may be responsible for the large areas where no archaeological sites are recorded. Similarly, Zones N and M also have areas void of archaeological sites. This lack of sites may be the result of no archaeological surveys being conducted in the area or a refusal by a landowner to allow an archaeological survey to occur. In this instance, it is important to not rely on ArchSite alone, and to consider both the local Māori history of the area as well as localised historical information.

The assessment area for the proposed Alteration is vast. While we have done our best to assess the entire area, utilising all the tools available to us, we have had to narrow our focus to specific areas due to time and other constraints. Only some areas were researched more intensely and field surveyed. As the evidence indicates, early Māori and European occupation occurred throughout the Ruataniwha Plains. This means there is the potential to find archaeological material throughout the project area.

Therefore, it is our assessment that earthworks in association with both the primary and secondary distribution network of pipelines and their associated infrastructure, could have an effect on, as yet unknown, archaeological sites.

Reservoir

The reservoir for the dam will be created by constructing an 83-metre high wall in the Makaroro River. It is estimated the reservoir will be approximately 7 kilometres long with a surface area of 372 hectares and will hold approximately 93 million cubic metres of water. 29.7 ha of Ruahine Forest Park (DOC) land is to be exchanged under Section 42(4)(f) of the FTAA for 170 ha of private land.

The flooding will inundate the Makaroro catchment and tributaries above the dam wall up to the 465 m contour line (465 metres above mean sea level, using the New Zealand Vertical Datum 2016). We were advised this is the maximum height or level of the reservoir. The land that will be flooded is primarily farmland and native vegetation.

We did not find conclusive evidence of archaeological features or residues at Area 1, which may be a terraced pā. However, we could not confidently conclude that the site was an archaeological site. Further archaeological investigation could be undertaken to determine if the site is an archaeological site, but this would not change the fact that Tangata Whenua have identified the site as a cultural site.

This area sits just above the 465 m contour line. While the modelling suggests the area will not be flooded, it is very close to the highest projected levels of the reservoir. Therefore, it is our assessment that the flooding of the reservoir could have an effect on this area. It will be necessary to consider the future management of this site. The integrity and stability of the site, future activities on and around the lake, cultural appropriateness and accessibility are examples of some challenges that should be addressed with Tangata Whenua going forward.

Zones N and M

The detailed engineering design of the water distribution network is currently being undertaken and therefore, not finalised. The secondary distribution network within Zones N and M have not been provided to HSHB, although Figure 1 does show an indicative route in Zone N flowing from Lake Whātuma via tributaries to the Waipawa River and from the Waipawa River along the Papanui Stream through Zone M.

There are approximately 77 recorded archaeological sites within Zone M. This has increased from 33 when Bickler and Clough did their archaeological assessment in 2013. Bickler and Clough do not note any sites in Zone N, but now there are 14 recorded sites. There is also a significant amount of documented Māori and European history in these zones. Of all the zones, Zones N and M have the highest potential to 1) encounter sites and 2) encounter sites with high archaeological value.

Therefore, it is our assessment that earthworks in association with secondary distribution network of pipelines and their associated infrastructure in Zones N and M, could have an effect on archaeological sites.

Heritage New Zealand Pouhere Taonga's (HNZPT) Statements of General Policy, prepared in October 2025 provide guidance for archaeological sites and the authority process. The relevant objectives and associated policies are:

OBJECTIVE: Heritage New Zealand Pouhere Taonga delivers best practice heritage recognition, conservation, and protection outcomes.

Earthworks and cultural heritage places with archaeological values

1.20 Heritage New Zealand Pouhere Taonga advocates for:

- a) recognising archaeological sites and making people aware of them, where appropriate, and
- b) avoiding the disturbance of archaeological sites, and
- c) scheduling and protecting archaeological sites and cultural landscapes in District Plans and Regional Coastal Plans, where appropriate, and
- d) the use of appropriate Accidental Discovery Protocols when an archaeologist has determined that an archaeological authority is not required

Demolition and destruction

1.31 Heritage New Zealand Pouhere Taonga opposes the demolition or destruction of significant cultural heritage unless there are exceptional circumstances, including those in which the cultural heritage poses a serious risk to safety and interim protection works would not sufficiently reduce risks.

OBJECTIVE: Heritage New Zealand Pouhere Taonga gives effect to te Tiriti o Waitangi/the Treaty of Waitangi and implements Tapuwae, the Māori Heritage Council Statement on Māori Heritage

Recognising and protecting Māori cultural heritage values

2.1 Heritage New Zealand Pouhere Taonga promotes:

- a) early, ongoing, and meaningful involvement of hapū and iwi in proposals affecting Māori heritage places that are archaeological in nature, and
- b) collaboration between hapū, iwi, and archaeologists to ensure archaeology is carried out in a culturally appropriate manner.

2.4 Heritage New Zealand Pouhere Taonga encourages applicants for archaeological authorities that affect sites of interest to Māori to submit protocols on agreed cultural processes that comply with the HNZPT Act.

Avoiding damage and modification of sites

2.7 Heritage New Zealand Pouhere Taonga promotes early, ongoing, and meaningful engagement with applicants to consider ways of avoiding or minimising the modification or destruction of archaeological sites.

OBJECTIVE: Heritage New Zealand Pouhere Taonga delivers best practice heritage recognition, conservation, and protection outcomes

Processing archaeological authority applications

2.23 Heritage New Zealand Pouhere Taonga promotes the preservation of the archaeological heritage of New Zealand by:

- a) exploring practical alternatives to avoid or limit the modification and destruction of archaeological sites, and advocating for the retention of in situ archaeological deposits, where practicable

2.25 Heritage New Zealand Pouhere Taonga does not support damage to significant archaeological sites, including urupā and pā, other than in exceptional circumstances, including the enhancement or protection of cultural heritage values

Further Considerations

Site Management

Urupā

Research has determined that the present locations of SASMs 45, 46 and 47 are not precise. The locations of these urupā needs to be recorded precisely and updated in the CHB District Plan. There is evidence that one of the urupā is on the road verge and therefore, at risk from damage by road maintenance. Tangata Whenua should be able to access and be involved in the management of, the resting place of their tūpuna.

Area 1 – possible terraced pā

It will be necessary to consider the future management of this site if and when the reservoir is flooded. The integrity and stability of the site, future activities on and around the lake, cultural appropriateness and accessibility are examples of some challenges that should be addressed with Tangata Whenua going forward.

Analysis, Collections Management and Report Writing

Reporting

Reports are prepared by a suitably qualified person every 12 months during the TWSP to update HNZPT and Tangata Whenua on progress and the effects of the project on the archaeology in the project area. If required, a final report will be completed within 6-12 months of the TWSP being completed.

Taonga tūturu

If taonga tūturu are discovered, tangata whenua will be informed to enable them to be active participants in the investigation and to undertake any cultural protocols they wish to carry out.

The Protected Objects Act 1975 is the legislation that manages the discovery of taonga tūturu. If any taonga tūturu are found, they will be registered with the Ministry for Culture and Heritage (MCH) within 28 days of the fieldwork being completed. Ownership of any archaeological material uncovered will be decided by the MCH in association with the Māori Land Court and tangata whenua.

Analysis

The analysis of any material encountered will be undertaken by appropriate specialists.

Conclusion

The purpose of this archaeological assessment is to evaluate the effects of the TWSP on the archaeology within the project area. The parameters constraining this assessment are; a brief review using GIS and spatial information of the area around the dam and reservoir including the 'island' and 'Donovan's Gully' parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed up with consultation and field survey.

The project is located in the Makaroro, Waipawa, Tukituki and Papanui Stream catchments stretching from the base of the Ruahine Ranges to the lower reaches of the Tukituki River.

The TWSP is a catchment-scale development that will create a water storage reservoir to enable regional water security and sustainability. The project will require the installation of major infrastructure and will have effects on many aspects of the environment and community. The project will:

- Create a reservoir 7 kilometres long that will hold approximately 93 million cubic metres of water
- Construct an 83-metre high dam in the Makaroro River
- Irrigate approximately 20,000-30,000 hectares of land
- Release up to 20 million cubic metres of water per year to ensure minimum river flows are maintained in the Tukituki River, and
- Exchange 29.7 hectares of Ruahine Forest Park for 170 hectares of private land
- Provide water supply for local communities, and
- Enhancement of Lake Whatumā and the Mangatarata catchment

No archaeological sites were found from the review of spatial information or field survey. We did, however, find several cultural sites that are adjacent to the proposed Alteration of the primary distribution network. On reviewing the wider project area, there is a likelihood of unrecorded archaeological sites and subsurface archaeology, partially intact archaeological materials and evidence below the ground. The likely impact or effect is damage or destruction to archaeological and/or cultural sites.

It is evident there is much Māori and European history in the area, and a small amount of research has elicited new and relevant information. It is crucial to ensure that, with a project of this scale, time and care are taken to perform our due diligence (or kaitiakitanga) properly.

Recommendations have been made (in addition to those made by Bickler and Clough, 2013) to avoid or minimise the effect the TWSP has on these sites and any other subsurface or unrecorded archaeological sites.

HSHB have not had discussions with HNZPT at this time but will update them and seek their advice shortly.

Recommendations

The purpose of this archaeological assessment is to evaluate the effects of the TWSP on the archaeology within the project area. The parameters constraining this assessment are; a brief review using GIS and spatial information of the area around the dam and reservoir including the 'island' and 'Donovan's Gully' parcels, and along the proposed alteration to the primary distribution network of pipelines. This review was followed up with consultation and field survey. The recommendations from this assessment are in addition to the recommendations proposed by Bickler and Clough (2013).

It is recommended that:

- An archaeological authority is applied for under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014 to minimise delays should archaeological materials or remains be discovered during work associated with the TWSP;
- An archaeological management plan is prepared for the TWSP to guide and manage the process if archaeological materials or remains are uncovered during work associated with the TWSP;
- Any sub-surface archaeological features or material encountered are investigated by an archaeologist using accepted archaeological methods;
- Any taonga tūturu encountered are reported to the hapū and then registered with the Ministry for Culture and Heritage within 28 days of completing the fieldwork;
- Archaeological material that will provide information about the approximate age of the site is sampled and sent away for C14 analysis;
- Archaeological assessments be undertaken in Zones N and M along the water distribution network (pipelines, headraces, canals and any other associated infrastructure) once the design has been finalised
- The proposed alteration to the primary distribution network in Zone A is at least 50 m from the SASM identified in this assessment (SASM number to be confirmed);
- Earthworks, for the alteration to the primary distribution network in Zone A, near or in sites of cultural significance, be monitored for archaeological materials or remains by a suitably qualified archaeologist and a cultural monitor, as appropriate;
- Reports are prepared by a suitably qualified person every 12 months during the TWSP to update HNZPT and Tangata Whenua on progress and the effects of the project on the archaeology in the project area.
- Develop and maintain meaningful relationships and communication with Tangata Whenua regarding the ongoing management of their cultural heritage.

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Appendix

Bruce Worsnop – Submission letter to CHBDC re proposed district plan dated 24/8/1999.

Proposed Tukituki Water Security Project

Department of Conservation Land Exchange Landscape Values Assessment

5 October 2026

Introduction

Wayfinder Landscape, Planning and Strategy Ltd (Wayfinder) has been engaged to assess the proposed land exchange associated with the Tukituki Water Security Project. This report has been prepared by Shannon Bray with the assistance of Ben Ormsby. The assessment forms part of the land exchange proposal between the Project and the Department of Conservation (DOC).

The proposed exchange involves several public conservation land parcels associated with the Dutch Creek catchment and surrounding areas that would be inundated (DOC-Give), and the acquisition of a substantially larger area of Smedley Station land adjoining the Gwavas Conservation Area (DOC-Get). The assessment considers both the existing landscape characteristics of the respective land parcels and their contribution to wider conservation landscape outcomes, including ecological and landscape connectivity, conservation management opportunities, restoration potential, and long-term landscape resilience.

The report considers the landscape character and values of the proposed DOC-Give and DOC-Get land, their contribution to the wider conservation landscape, and the landscape implications of the proposed exchange. It has been prepared to inform consideration of whether the proposed exchange would result in an appropriate conservation outcome when assessed in the context of the wider Ruahine-Wakarara conservation landscape. While reference is made to the landscape assessment prepared by Mr Jeremy Head, this report is not a peer review of that assessment. Rather, it provides an independent assessment of the proposed land exchange and its landscape implications.

Authors Qualifications and Experience

My name is Shannon Bray. I am a director and landscape architect at Wayfinder. I hold a Bachelor of Landscape Architecture with Honours from Lincoln University (1996) and a Bachelor of Forestry Science (1994) from Canterbury University. I am a registered fellow and past president of Tuia Pito Ora New Zealand Institute of Landscape Architects (NZILA). Further details of my qualifications and experience are provided in Appendix 1.

I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and confirm that I have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise, except where I have indicated that I am relying on others' opinions. I have not omitted material facts known to me that might alter or detract from my evidence.



Methodology

The methodology of this report follows the guidance of *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*¹ (*Te Tangi a te Manu*).

This report is an independent assessment of the land exchange proposal, not a peer review of the landscape assessment prepared by Mr Head, although this has been considered as relevant reference material.

The assessment identifies the landscape character and values of the DOC-Give and DOC-Get land, considers their relative contribution to the wider conservation landscape, and evaluates the long-term landscape implications of bringing the DOC-Get land into permanent conservation ownership and management. This has included consideration of adjacency to protected areas, ecological and landscape connectivity, vulnerability to degradation, management requirements and restoration opportunities.

My assessment uses the following methodology and methods:

- ▶ summary of key elements of the proposal;
- ▶ description of the landscape context including physical, perceptual and associative dimensions of landscape and landscape values; and
- ▶ assessment of the net conservation outcome of the proposed land exchange.

A site and locality visit was undertaken on 17 September 2026 via helicopter, including viewing:

- ▶ the extent of the proposed reservoir;
- ▶ the proposed DOC-Give parcels;
- ▶ the proposed DOC-Get parcel; and
- ▶ parts of the immediate surrounding landscape including the Kaweka Gwavas Forest, Gawas Conservation Area and Smedley Station.

The assessment to inform this report was undertaken using knowledge gained during the site visit, from the landscape report (LAR) (4 September 2026) prepared by Mr Jeremy Head, and biodiversity, heritage and recreation reports and the draft landscape exchange report (14 September 2026) prepared by the Department of Conservation. In addition online tools were used such as Google Maps, Google Street View and the Hastings District Council online GIS portal. Relevant planning documents have also been considered, to the extent relevant to the matters assessed in this report.

Proposal Description

The proposed exchange involves the transfer of approximately 29.7 ha of public conservation land (DOC-Give) in exchange for approximately 170 ha of privately owned land (DOC-Get) (refer to Image 1 below). The DOC-Give land comprises three separate parcels, one associated with Dutch Creek, and two with the Mākāroro River corridor (hereafter referred to as 'Dutch Creek', 'Island Block' and 'SNA Block'). The DOC-Get land is located adjacent to the Gwavas Conservation Area and forms part of the Wakarara landscape. Should the exchange proceed, the DOC-Get land would be incorporated into the public conservation land, extending the area of protected land immediately adjoining the Gwavas Conservation Area.

¹ 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

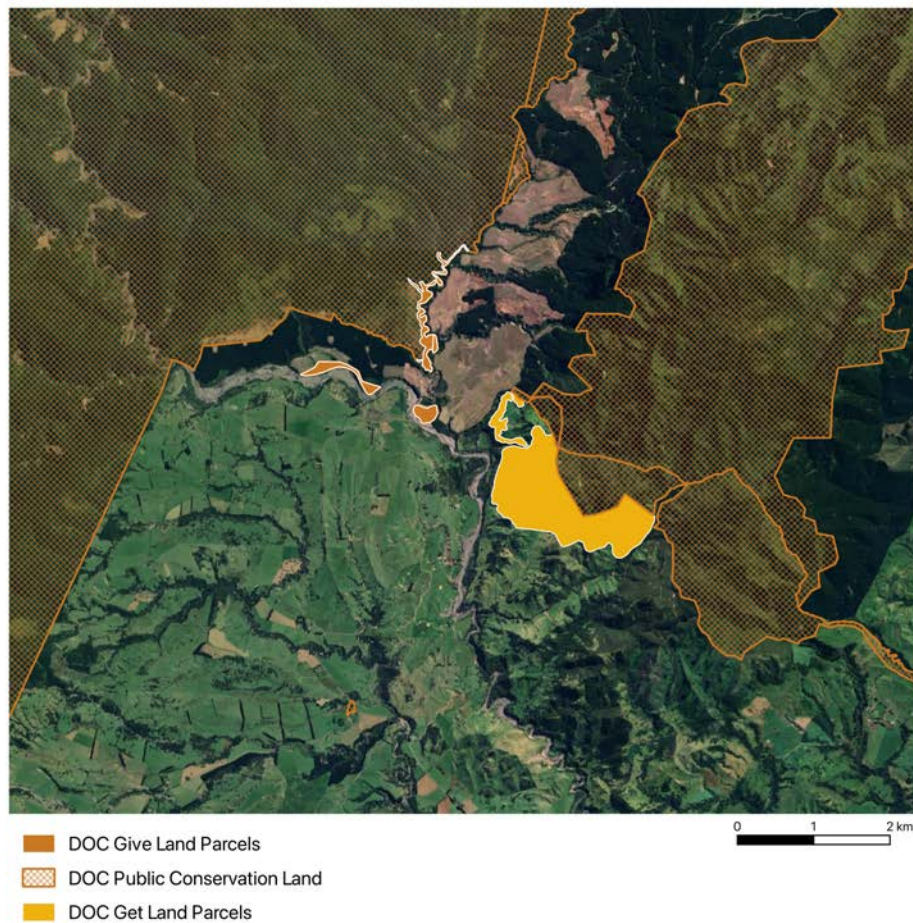


Image 1 Context Map showing locations of exchange land and adjacent public conservation land

This assessment addresses the land exchange through the same two scenarios used by Mr Head:

- ▶ **Scenario One** considers the value of the land as it is now; and
- ▶ **Scenario Two** considers the value of the land, should the land exchange go ahead (and assumes that the reservoir and irrigation project proceeds). This scenario includes recognition of proposed improvements and mitigation or offsetting of the DOC-Get land, and any positive or negative impacts of inundation, where they relate to that land.

While both scenarios are considered in this report, Wayfinder notes that Scenario 2 is the only realistic basis for the land exchange to be assessed, because the exchange will not occur unless the wider project (of which it is an integral part) proceeds.

The proposed management and restoration measures are intended to enhance conservation outcomes. These include stock exclusion, pest animal control, weed management, wetland restoration, indigenous planting and ongoing ecological management. Together, these measures are intended to support the protection and restoration of indigenous ecosystems within the DOC-Get land.



Landscape Context

Physical

The Ruahine Range comprises a strongly expressed mountain spine with steep slopes, sharp ridgelines, high relief, and deeply incised river valleys and catchments. The landscape is highly legible as a tectonically uplifted mountain system, with extensive dissection by rivers and streams draining both eastward and westward from the main divide. The range is characterised by folded and faulted terrain and ongoing erosion processes resulting from active uplift and high rainfall. The Wakarara Range is characterised by steep, broken hill country, dissected by numerous small stream catchments such as the Poporangi and Poutaki catchments. Compared with the high Ruahine crest, the Wakarara landforms are generally lower in elevation but still display strong relief, prominent ridges, narrow spurs, and deeply incised gullies reflecting prolonged uplift and fluvial erosion.

The area experiences a cool temperate mountain climate. Visibility can vary considerably due to cloud, mist, rain and seasonal atmospheric conditions. Strong winds are a defining characteristic of exposed ridges and summits, while sheltered gullies and valleys experience more moderated conditions. These climatic patterns influence vegetation distribution, ecological communities, catchment processes and the way the landscape is experienced. The area forms an important headwater catchment landscape associated with the Ruahine and Wakarara ranges. High rainfall, steep terrain and extensive indigenous forest generate numerous streams, rivers and tributaries that originate within the mountain and hill country and drain through deeply incised valleys.

Vegetation exhibits a strong altitudinal sequence associated with climate, elevation and land-use history. The Ruahine Range supports extensive indigenous forest cover, transitioning from podocarp-broadleaved forest at lower elevations to beech forest, subalpine shrublands and alpine tussock communities at higher elevations. Indigenous vegetation forms a largely continuous forested mantle across much of the Ruahine Forest Park. Within the Gwavas Conservation Area and Wakarara Range, historical burning, logging and pastoral use have influenced vegetation patterns. Much of the area has reverted to scrub and regenerating indigenous forest, interspersed with remnant stands of larger tree species, particularly within gullies and less disturbed locations.

The area contains a large and relatively intact indigenous ecosystem centred on the Ruahine Forest Park and adjoining conservation lands. Ecological communities include podocarp, broadleaf and beech forests, subalpine shrublands, alpine grasslands, wetlands and freshwater ecosystems. The extent and continuity of indigenous vegetation provide important habitat and ecological connectivity across the central North Island axial ranges. The Ruahine Forest Park and Gwavas Conservation Area display a land-use pattern that is strongly influenced by topography, accessibility, and conservation management.

The higher elevations and steeper terrain of the Ruahine Range are predominantly managed for conservation purposes within Ruahine Forest Park. These areas remain largely covered by indigenous vegetation and are used primarily for biodiversity protection, water catchment functions, recreation, hunting, tramping, and back-country experiences. The rugged terrain and extensive forest cover have limited more intensive forms of land use. The adjoining Gwavas Conservation Area and Wakarara Range have a more complex land-use history.

Much of the area was historically burned, logged, and grazed following European settlement, resulting in extensive vegetation clearance and pastoral use. Since grazing ceased, large areas have reverted to regenerating indigenous vegetation, particularly shrublands and forest. Today the area is managed primarily for conservation, water and soil protection, habitat values, and recreation.

Perceptual

The landscape form reflects ongoing uplift associated with the Ruahine and Mohaka fault systems, while extensive river incision and slope erosion have created a complex pattern of valleys, spurs, gullies and catchments. The resulting landforms make the processes of mountain building, faulting, weathering and fluvial erosion readily apparent within the contemporary landscape.



The prominent Ruahine mountain spine, distinctive ridgelines, valleys, river corridors and watershed patterns create a highly legible landscape structure that provides strong orientation and spatial reference across the wider region. At a more local scale, individual ridges, peaks, forested skylines, river valleys and gorges contribute to landscape legibility by providing recognisable reference points within the broader landform framework. The contrast between the mountain ranges, the fault-controlled depressions and the surrounding pastoral lowlands further reinforces the ability of these features to function as landmarks.

The landscape exhibits a clear and readily understood physical structure defined by prominent mountain ranges, strongly expressed ridgelines, deeply incised valleys, extensive indigenous forest cover and legible drainage patterns. The relationship between landform, vegetation, hydrology and land use is readily apparent, contributing to a visually coherent and easily understood landscape. The landscape is distinguished by its prominent forested mountain ranges, rugged topography, extensive indigenous vegetation, remote character, and strong visual contrast with surrounding pastoral landscapes. These attributes combine to create a distinctive and readily recognisable landscape that leaves a strong and enduring impression.

The large-scale mountain and hill landforms provide a clear physical framework within which hydrological, ecological and land-use patterns occur. The close correspondence between topography, drainage systems, vegetation distribution and conservation management contributes to a strong sense of landscape integrity and cohesion. The relationship between natural and human patterns is strongly influenced by the constraints and opportunities created by the landscape's rugged topography. Indigenous forest cover remains dominant across the steeper and less accessible conservation lands of the Ruahine Forest Park and Gwavas Conservation Area, while more intensive land uses are generally concentrated within surrounding valleys, foothills and lower relief areas. As a result, the landscape retains a strong expression of natural systems, with relatively limited built development and a generally subordinate human imprint within the conservation areas. Human modifications are evident in places but do not obscure the underlying natural framework of the landscape.

The landscape is characterised by rugged mountain and hill landforms, extensive indigenous forest cover, deeply incised valleys, natural waterways and dynamic weather conditions. The interplay of landform, vegetation, water and atmosphere creates a visually rich and distinctive landscape with strong scenic qualities. Elevated ridgelines and summits provide expansive views across the Ruahine and Wakarara ranges and surrounding lowlands, while valleys and forested areas provide more enclosed viewing experiences. The Ruahine Range forms a prominent regional backdrop and visual reference feature across the wider landscape.

Associative

The Ruahine ranges have a long history of Māori occupation, travel and resource use. The forests, rivers and headwaters supported food gathering, movement across the landscape, settlement in adjacent foothills, and enduring relationships between tangata whenua and the mountain environment. The landscape has longstanding associations with livelihoods based on food gathering, travel, forestry, milling, pastoral farming, conservation management, recreation and hunting. Contemporary conservation land uses contrast with the productive agricultural landscapes that surround the ranges.

People are drawn to the landscape for recreation, hunting, tramping, engagement with nature, conservation activities, and, historically, for travel, refuge and food gathering. The ranges continue to provide opportunities for outdoor experiences, connection with the natural environment, and appreciation of the area's ecological and landscape values. Recreation is a defining contemporary activity, including tramping, hunting, back-country travel and engagement with the indigenous forest and mountain environments.

Summary of Landscape Context

The broader landscape context demonstrates that the exchange land sits within a large and interconnected indigenous landscape characterised by extensive conservation land, indigenous vegetation cover and ongoing natural and ecological processes. While the specific landscape values present within individual parts of the proposed exchange remain important considerations, the wider landscape setting provides an important context for evaluating the significance of landscape outcomes arising from changes in land ownership and protection status. In particular, the



relationship between the proposed DOC-Get land and the wider conservation network is a relevant consideration in assessing the overall landscape implications of the exchange.

The Wakarara landscape continues to evolve through ecological succession, restoration and land management interventions, meaning that future landscape trajectories are essential to understanding the long-term implications of the proposed exchange.

Assessment of DOC-Give Land Values

The DOC-Give land comprises three geographically separate parcels; Dutch Creek, SNA Block and Island Block. Collectively, these areas contain a range of conservation values associated with indigenous vegetation, freshwater environments, natural landforms and recreation resources. While differing in character and composition, each parcel contributes to the wider network of conservation land associated with the eastern foothills of the Ruahine Ranges.

A defining characteristic of the DOC-Give land is its strong association with freshwater environments. Dutch Creek is identified as supporting high-quality freshwater values, including relatively intact stream and wetland systems, diverse aquatic habitats and strong ecological linkages between terrestrial and freshwater environments (refer to Image 2 below). The freshwater assessment identifies Dutch Creek as containing larger stream systems, greater habitat diversity, more extensive and intact wetland habitats, potential habitat for wīho and well-developed freshwater-terrestrial ecological sequences. These attributes contribute not only to ecological value but also to the natural character and landscape quality of the creek corridor.



Image 2 Photo showing Dutch Creek between Ruahine Forest Park and Gwavas plantation forestry

The DOC-Give land also contains areas of indigenous vegetation that contribute to landscape character and naturalness. Indigenous vegetation associated with Dutch Creek and the Island Block parcels reinforces the perception of a predominantly natural landscape, while the river and stream corridors provide a clear relationship between vegetation patterns, landform and hydrological processes (refer to Image 3 below). In landscape terms, these areas derive much of their value from the visibility and legibility of natural systems, including the interaction between waterways, valley landforms, indigenous vegetation and adjoining conservation land. The physical landscape attributes of the DOC-Give land are also influenced by the adjacent rural land that is currently being used for production forestry.



Image 3 Photo showing Island block (centre) in the Mākāroro stream corridor, with Dutch Creek entering from the left

The Mākāroro River and Dutch Creek corridors further contribute to landscape character through their association with the wider Ruahine environment. River and stream processes, indigenous vegetation, recreational access and connections to surrounding public conservation land collectively contribute to a landscape that is strongly influenced by natural patterns and processes.

Notwithstanding these values, the DOC-Give land comprises three distinct parcels that are geographically separated from one another and occupy different positions within the wider conservation landscape (refer to Image 4 below). Accordingly, the contribution of each parcel is primarily derived from the specific values present within that parcel, including freshwater systems, indigenous vegetation and recreational associations, rather than from a contiguous landscape unit.



Image 4 Photo showing SNA block centre alongside the Mākāroro River with plantation forestry separating it from public conservation land



Assessment of DOC-Get Land Values

The DOC-Get land comprises approximately 170 ha of hill country located immediately adjacent to the Gwavas Conservation Area. The land supports a mosaic of indigenous forest, regenerating indigenous vegetation, wetlands, streams and modified pasture (refer to Image 5 below). While parts of the area have been subject to historic pastoral use, indigenous vegetation remains a defining characteristic of the landscape and contributes strongly to its natural character and conservation values.



Image 5 Photo showing DOC-Get land right of the Mākāroro river (centre)

A notable characteristic of the DOC-Get land is its scale. At approximately 170 ha, the land is substantially larger than the 29.7 ha of DOC-Give land. While area alone is not a measure of conservation value, the scale of the DOC-Get land enables the protection of a broader range of landforms, vegetation communities, habitats and ecological processes within a single landscape unit. The biodiversity assessment records approximately 125 ha of indigenous vegetation within the DOC-Get land, including areas of indigenous forest and regenerating native vegetation that contribute to the wider indigenous vegetation pattern of the Wakarara foothills.

The DOC-Get land also exhibits a strong spatial relationship with the existing conservation land. The land directly adjoins the Gwavas Conservation Area and shares continuity of landform, vegetation and ecological systems with the adjoining conservation landscape (refer to Image 6 below). This relationship distinguishes the DOC-Get land from the DOC-Give parcels, which occur as separate and somewhat disparate landholdings associated with individual waterways and landscape features. The DOC-Get land therefore forms part of a larger and more continuous indigenous landscape extending across the southern Wakarara Range and adjoining conservation land.



Image 6 Photo of DOC-Get land in foreground and adjacent public conservation land beyond

Landscape character within the DOC-Get land reflects both natural processes and a history of pastoral modification. However, the landscape is not defined solely by its modified components. Indigenous forest remnants, regenerating vegetation, wetlands, streams and gullies collectively contribute to a landscape that exhibits ongoing ecological recovery and natural regeneration. This pattern of regenerating indigenous vegetation is also identified as a characteristic component of the wider Wakarara landscape.

In addition to biodiversity and landscape values, the DOC-Get land also contains recognised heritage and recreation values. The heritage assessment identifies the historic Smedley farming landscape as having heritage significance and concludes that the overall heritage value of the DOC-Get land is greater than that of the DOC-Give land. The recreation assessment similarly identifies opportunities for hunting and other backcountry recreation activities associated with the larger and more integrated conservation landholding.

Overall, the conservation values of the DOC-Get land arise from the combination of indigenous vegetation, wetlands and waterways, the scale of the landholding, its relationship with the adjoining Gwavas Conservation Area, its role within the wider Wakarara landscape and the opportunities for ongoing enhancement.

Statutory Context

The assessment is undertaken within the statutory framework established by the Conservation Act 1987 and the Fast-track Approvals Act 2024. The Conservation Act defines natural resources as including land, water, soil, minerals, vegetation and fauna, together with the natural systems and processes associated with those resources. This framework provides the basis for considering the conservation values of the land proposed for exchange.

The exchange land also occurs within a broader conservation management context informed by the Hawke's Bay Conservation Management Strategy and the Wellington Conservation Management Strategy (CMS). These strategies recognise the significance of the Ruahine and associated mountain landscapes for their indigenous ecosystems, natural landscapes, freshwater environments and recreational values. They also promote the protection and management of natural resources and ecological systems across the wider conservation land. The Hawke's Bay CMS repeatedly emphasises:

- ▶ integrated land management;
- ▶ protection of unprotected habitats;



- ▶ pest control;
- ▶ landscape values;
- ▶ improving conservation outcomes beyond existing reserve boundaries.

The DOC-Get land (and parts of the surrounding landscape) are subject to landscape and ecological provisions contained within the Central Hawke's Bay and Hastings District Plans. These include Outstanding Natural Feature and Landscape classifications applying to parts of the Wakarara Range and wider landscape. The identified landscape values relate to the natural landform patterns, indigenous vegetation cover, natural character and scenic qualities that characterise these landscapes. Dutch creek is located east of and within the ONL Kaweka and Ruahine Ranges of the Hastings District Plan. To the east is rurally zoned land used for production forestry. Island Block is rurally zoned land within Hastings District Plan, with a small area in Central Hawke's Bay District within SNA-6. SNA Block is located entirely within SNA-2 and SNA-6 of the Central Hawke's Bay District Plan.

The DOC-Get land (and parts of the surrounding landscape) is rurally zoned within the Hastings District, and partially within ONF-1 (Wakarara Range), and SNA-10 and SNA-97, as well as General Rural Zone within the Central Hawke's Bay District. It is associated with a range of mapped ecological, freshwater and cultural overlays, including Significant Natural Areas, threatened ecosystems, priority waterbodies and statutory acknowledgement areas. Collectively, these provisions recognise the significance of indigenous vegetation, freshwater environments and natural landscape character within the wider Ruahine and Wakarara landscapes and provide important context for the assessment of the conservation values associated with the DOC-Give and DOC-Get land.

Comparison of Scenarios

The DOC-Give land contains recognised natural character, ecological and landscape values, while the DOC-Get land also contains important landscape attributes associated with its scale, indigenous vegetation cover, relationship with the Gwavas Conservation Area and contribution to the wider conservation landscape.

The key issue is the relative weighting applied to these different considerations in the LAR. In my opinion, greater weight should be given to the wider landscape-scale outcomes arising from protection, consolidation and long-term restoration of indigenous landscape character across the Wakarara landscape. When these factors are considered alongside the existing values present within the DOC-Give land, the proposed exchange is assessed as resulting in an overall positive landscape outcome. Therefore, in addition to the rationale above (noting that the exchange would only proceed in Scenario 2), the outcome of Scenario 2 is the focus of the comparison.

Scenario 1

The comparative assessment indicates that both the DOC-Give and DOC-Get land contain recognised conservation and landscape values, although those values differ in character, scale and spatial context. The DOC-Give land derives much of its significance from its association with Dutch Creek, the Mākārora River corridor, indigenous vegetation remnants and high-quality freshwater environments. The freshwater assessment identifies Dutch Creek as supporting larger streams, greater habitat diversity, more extensive wetland systems, who habitat and stronger freshwater-terrestrial ecological relationships than those present within the DOC-Get land. Therefore, parts of the DOC-Give land exhibit a higher degree of naturalness and stronger freshwater values in their current condition.

In contrast, the DOC-Get land derives much of its significance from its scale, continuity and relationship with the wider conservation landscape. The land comprises a single contiguous block of approximately 170 ha adjoining the Gwavas Conservation Area, in comparison to the 29.7 ha of geographically separate DOC-Give parcels. While scale alone is not determinative of conservation value, it influences the extent to which ecological processes, indigenous vegetation patterns and landscape systems can function as part of a coherent landscape unit. The DOC-Get land therefore contributes differently to the wider conservation landscape than the DOC-Give land, through its physical connection to an existing area of protected land and its continuity with the indigenous vegetation and landform patterns of the Wakarara landscape.



This distinction also influences the relative conservation values of the land. The DOC-Give parcels contain important site-specific values associated with waterways, vegetation communities and recreation resources. However, the DOC-Get land provides opportunities for conservation management across a substantially larger and more integrated landscape unit. The biodiversity, recreation and landscape assessments identify opportunities associated with coordinated pest control, weed management, indigenous revegetation, wetland restoration and integrated management alongside the adjoining Gwavas Conservation Area. These opportunities arise largely from the scale of the landholding and its relationship with existing public conservation land.

The exchange also produces different outcomes when considered at the scale of the wider conservation landscape. The DOC-Give land contributes to conservation values through a series of smaller, geographically separate parcels distributed across the landscape. By comparison, the DOC-Get land would increase the extent of protected indigenous vegetation associated with the Wakarara-Gwavas conservation landscape and expand the area of public conservation land adjoining the Gwavas Conservation Area. As a result, the respective contributions of the two landholdings are not directly comparable based on individual sites alone, as they perform different functions within the wider conservation network.

Therefore, in my opinion, Scenario 1 favours retention of the DOC-Give land. The Dutch Creek catchment and associated freshwater systems contain higher existing freshwater, wetland and natural character values than those currently present within the DOC-Get land. When assessed solely based on existing values and current condition, the DOC-Give land is considered to make the greater conservation contribution from a landscape perspective.

Scenario 2

While the DOC-Give land presently contains higher-value freshwater environments in some locations, the DOC-Get land provides greater opportunities for landscape and ecological recovery through these future management interventions. Consequently, the comparative assessment extends beyond a comparison of current condition and considers the different trajectories likely to arise under future management and ownership arrangements.

The DOC-Get land is anticipated to enhance the values of ONF-1 Wakarara over time through further regeneration of indigenous vegetation. In contrast, the loss of the DOC-Give land from ONL-1 Ruahine Ranges will have a more immediate but very limited effect on the values of that ONL due to the area lost relative to the ONL. The DOC-Give land is not considered to contribute strongly to the expressiveness of the formative process of the ranges, so the landscape values relate primarily to the indigenous vegetation.

The future management context of the DOC-Get land is also relevant to understanding its conservation value. Under Scenario 2, the land would be incorporated into public conservation land holdings and become subject to management for conservation purposes, including stock exclusion, pest animal control, weed management, indigenous revegetation, wetland restoration, and riparian planting. These measures would be implemented to protect existing conservation values and support ongoing recovery of indigenous ecosystems across the site.

The LAR identifies the 45 ha of pasture as a potential future management issue that impacts on the suitability of the exchange. Weed management and restoration feasibility are not clearly identified as separate methodological components in the LAR, yet are given noticeable influence on the comparative analysis. There is a methodological question regarding whether weed burden is being assessed as a component of current landscape value, future landscape trajectory, management cost, ecological value, or some combination of these factors. The report appears to use all of these considerations, but the methodology does not explicitly define how they should be incorporated. The report does not clearly identify why weed infestation has been treated as a discrete assessment category or how its effects have been incorporated into the broader evaluation of landscape character and value. As a result, it is difficult to determine the relative weight given to weed infestation compared with other landscape attributes. The section also places considerable emphasis on the ecological consequences of weed infestation. While ecological condition may contribute to landscape character and value, the assessment does not consistently explain how ecological effects translate into landscape effects. In addition, the comparative conclusions appear to rely partly on assumptions regarding future management success, and it is not always clear whether conclusions are based on existing landscape conditions or anticipated future outcomes.



A further distinction between the exchange land emerges when considering landscape outcomes over longer timeframes. The current condition of the DOC-Give and DOC-Get land represents only a snapshot in time. While the DOC-Give land presently contains some of the highest quality freshwater environments within the exchange area, the DOC-Get land has a greater capacity to respond to active restoration and integrated conservation management over the medium to long term. Habitat restoration, indigenous vegetation regeneration, pest and weed control, wetland enhancement and continued conservation management have the potential to substantially influence the character and condition of the DOC-Get land. Due to its larger size, contiguous form (refer to Image 7 below) and direct relationship with the Gwavas Conservation Area, these changes would occur across a broader and more connected landscape unit than is possible within the geographically separated DOC-Give parcels.

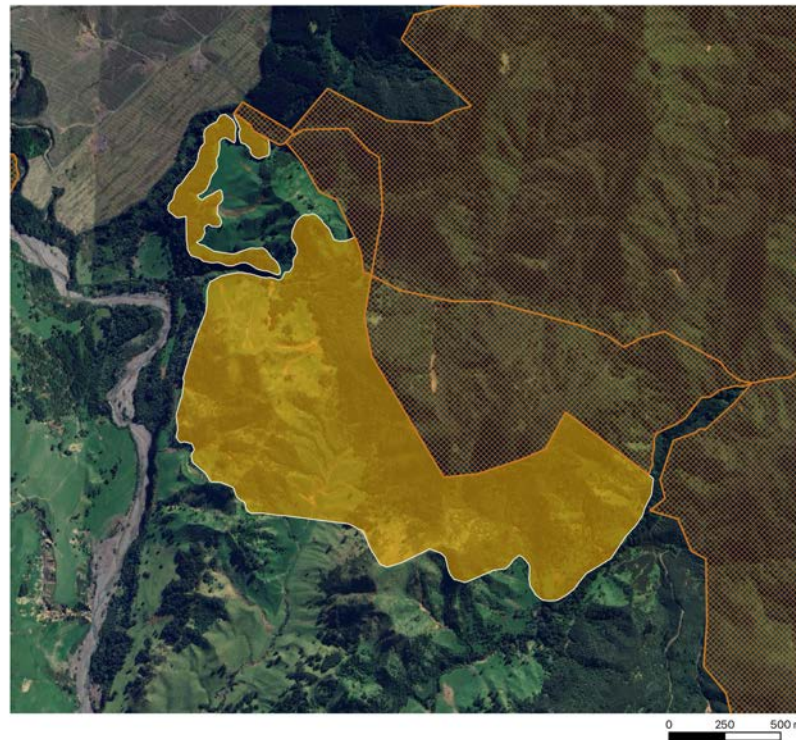


Image 7 Map showing relationship between DOC-Get land and adjacent public conservation land

When considered over these longer timeframes, the comparison is not solely between the current values present on each landholding, but also between their capacity to support enduring conservation and landscape outcomes. The DOC-Give land contains identifiable and locally significant freshwater, ecological and landscape values that are already well established. The DOC-Get land, by comparison, combines existing coherent and diverse indigenous landscape values with opportunities for continued ecological recovery and management as part of a larger contiguous conservation landscape. As a result, while the DOC-Give land may exhibit higher value in some attributes under existing conditions, the DOC-Get land has greater likelihood of contributing to the long-term resilience, restoration and continuity of the wider Wakarara-Gwavas conservation landscape.

Overall, the comparison highlights a distinction between the concentration of existing freshwater and natural character values within parts of the DOC-Give land, and the larger-scale landscape, connectivity and restoration opportunities associated with the DOC-Get land. The relative importance of these factors is considered in the following section addressing conservation and landscape outcomes.

Therefore, in my opinion, the DOC-Get land provides a substantially larger and more integrated landscape unit with a



direct relationship to the Gwavas Conservation Area. Under public ownership and management, the opportunities for restoration, indigenous vegetation recovery, ecological connectivity and integrated management would strengthen the integrity, coherence and resilience of the wider Wakarara-Gwavas conservation landscape over time. When these longer-term landscape outcomes are considered alongside existing values, the acquisition of the DOC-Get land is assessed as providing a net positive conservation outcome.

Weighting of Values

The principal point of difference between my assessment and the LAR concerns weighting rather than factual disagreement. Both assessments recognise that the exchange land contains landscape and conservation values of varying types and scales. The critical issue is therefore not whether those values exist, but the relative importance attributed to them in the overall evaluation. In my opinion, greater weight should be given to landscape-scale conservation outcomes, landscape connectivity, restoration potential and the long-term consolidation of the conservation land than to isolated existing attributes considered independently of their wider context.

The LAR includes a separate waterways assessment which I consider a practical addition given the conservation-focused purpose of the assessment. However, the methodological relationship between the waterways assessment and the landscape assessment is not fully explained. The report appears to treat waterways as both a landscape attribute and a separate assessment stream. This creates some uncertainty regarding whether waterways are effectively considered twice: once as part of landscape character and again through the standalone waterways assessment. The methodology would be stronger if it explicitly explained how the waterways findings are integrated into the overall value assessment and how any potential overlap is managed.

The comparative assessment identifies genuine differences between the values represented by the DOC-Give and DOC-Get land. The DOC-Give land contains high-quality freshwater, wetland and river corridor environments, particularly within the Dutch Creek catchment. These attributes contribute strongly to natural character, ecological integrity and landscape quality and are an important component of the overall assessment.

The weighting applied in this assessment differs depending on whether Scenario 1 or Scenario 2 is being considered. Under Scenario 1, greater weight is naturally given to the current condition of the exchange land, including the high quality freshwater, wetland and natural character values associated with Dutch Creek and other DOC-Give parcels. Assessment under this scenario tends to favour land that currently exhibits the highest levels of naturalness and ecological integrity.

The assessment does not rely solely on a comparison of existing landscape condition or the relative quality of individual landscape features. While existing condition is an important consideration, greater weight has been given to the broader landscape and conservation outcomes that would result from addition of the DOC-Get land to public conservation land. It is my understanding that Scenario 1 would not be pursued in this instance.

Under Scenario 2, additional considerations become relevant. These include the future effects of conservation ownership, restoration initiatives, ongoing ecological management and the integration of the DOC-Get land into the wider conservation land. Consequently, greater weight is placed on landscape connectivity, extent of protected indigenous vegetation, consolidation of conservation land, restoration potential, long-term management capability and the contribution of the land to the wider Wakarara Gwavas conservation landscape.

We give significant weight to the relationship between the DOC-Get land and the wider Wakarara Gwavas conservation landscape. The DOC-Get land contains a substantial extent of indigenous vegetation, directly adjoins the Gwavas Conservation Area and forms part of a larger and more continuous landscape unit. These characteristics influence the way the land contributes to the wider conservation landscape and distinguish it from the geographically separate and somewhat disparate DOC-Give parcels.

We also place weight on the opportunity to consolidate and expand existing public conservation land. The DOC-Give land contributes through a series of discrete parcels associated with specific waterways and vegetation remnants, whereas the DOC-Get land provides an opportunity to integrate a larger contiguous area into the conservation land. This contributes to a more coherent pattern of protected land and strengthens the spatial relationship between protected indigenous habitats within the wider landscape.



Further, we place weight on restoration potential and long-term management capability. The assessment recognises that landscape and conservation values are not static and that future condition is influenced by ownership, management and restoration interventions. Under Scenario 2, the DOC-Get land would be subject to stock exclusion, pest and weed control, indigenous revegetation, wetland restoration and ongoing conservation management. These measures provide opportunities for continued ecological recovery and landscape restoration that extend beyond the values currently present on the site.

Accordingly, while the DOC-Give land contains higher-value freshwater environments and greater naturalness in some locations, my assessment places greater emphasis on landscape connectivity, the extent and continuity of protected indigenous vegetation, consolidation of conservation land, restoration potential and the long-term resilience of the wider conservation landscape. It is the weighting of these broader landscape and conservation considerations, rather than any disagreement regarding the values present within the DOC-Give land, that leads to a different overall conclusion to the LAR regarding the appropriateness of the proposed exchange.

For this reason, we do not consider the comparative evaluation can be resolved solely by comparing the existing condition of specific attributes within the exchange land. The broader strategic contribution of the DOC-Get land to the function, resilience and management of the wider conservation landscape is also a relevant consideration and, in my opinion, warrants significant weight in the overall assessment.

Conclusion

My assessment does not fundamentally differ from the conclusions of the LAR relied upon by DOC in its identification of the conservation landscape values present within the exchange land. The primary difference relates to the weighting applied to those values and the extent to which broader landscape-scale and long-term outcomes are considered in the overall evaluation. In my opinion, greater weight should be attributed to the protection of a substantially larger area of indigenous landscape, improved conservation connectivity, and the long-term strengthening of landscape integrity across the wider Wakarara landscape. When considered in this context, the proposed exchange is appropriately characterised as producing an overall positive landscape outcome.

The DOC-Give land derives its principal landscape and conservation values from its freshwater systems, wetlands, indigenous vegetation and natural character, particularly within the Dutch Creek catchment. These values are recognised and contribute positively to the wider conservation landscape. The DOC-Get land derives its principal values from its scale, indigenous vegetation, adjacency to the Gwavas Conservation Area, and its contribution to a larger and more connected conservation landscape. While parts of the land have experienced historical modification, it contains substantial indigenous vegetation and significant opportunities for ecological restoration and long-term conservation management.

In my opinion, these broader landscape and conservation outcomes warrant greater weight in the assessment. When considered over the long term, the exchange would expand and strengthen the Wakarara-Gwavas conservation landscape and support a more coherent and resilient conservation land. While the exchange involves the loss of some existing conservation values associated with the DOC-Give land, these losses are outweighed by the future gains.

Therefore, in my opinion, the exchange proposed in this instance is considered to represent a net positive outcome for landscape conservation values.

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Shannon Bray is a Principal Landscape Architect and Managing Partner of Wayfinder, a consultancy based near Hastings that works with regional and national clients across Aotearoa New Zealand. This CV focuses on his energy-related experience, particularly in wind, solar, transmission and associated infrastructure projects.

He specialises in landscape planning, urban design and assessment work for large-scale infrastructure, energy and utility projects. His experience includes landscape and visual effects assessment, route and site selection, peer review, mitigation strategies and strategic design input. He regularly leads multidisciplinary teams and works across both rural and urban environments.

Shannon is a recognised expert witness and has presented evidence before councils, the Environment Court and Boards of Inquiry. He is familiar with fast-track consenting processes and has worked across several fast-track projects in expert advisory roles. He has also worked as an RMA Commissioner and holds active Making Good Decisions certification. He is a Fellow and Registered member of the New Zealand Institute of Landscape Architects, served two terms as national President, and has recently led NZILA's resource management reform work, including authoring and presenting submissions to the Parliamentary Select Committee.

His wider travel and management experience also informs a strong understanding of place, landscape character and the integration of infrastructure into varied natural and cultural settings.





Selected Energy Projects:

Wind

- ▶ Southland Wind Farm *Landscape Effects Fast Track Evidence for Contact Energy Ltd*
- ▶ Pahiatua Wind Farm *Landscape & Visual Effects Assessment for Yinson Renewables*
- ▶ Waiuku Wind Farm *Landscape & Visual Effects Technical Advice to the Fast Track Expert Panel*
- ▶ Hawke's Bay, Manawatū, Waikato, Northland, Taranaki and Southland Wind Farms *Preliminary Landscape Risk Assessments for Private Energy Client*
- ▶ Central Wind *Landscape & Visual Effects Assessment for Meridian*
- ▶ Waverley Wind Farm *RMA Commissioner*
- ▶ Mt Munro Wind Farm *Landscape and Visual Effects Assessment, Landscape Mitigation Plan for Meridian*
- ▶ Motorimu Wind Farm *Landscape & Visual Effects Assessment for Community Group*
- ▶ Turitea Wind Farm *Landscape & Visual Effects Assessment for Community Group*
- ▶ Unison and HBWF *Landscape & Visual Effects Assessment for Community Group*
- ▶ Waitahora Wind Farm *Peer Review for TDC*
- ▶ Puketoi Wind Farm *Peer Review for TDC*
- ▶ Castle Hill Wind Farm *Peer Review for TDC*
- ▶ Te Rere Hau Wind Farm and Te Rere Hau Repowering *Peer Review for TDC and PNCC*

Solar

- ▶ Waipara Solar Farm *RMA Commissioner*
- ▶ Tauhei Solar Farm Extension *Landscape Effects Assessment for Private Energy Company*
- ▶ Hinuera Solar Farm Extension *Landscape Effects Assessment for Private Energy Company*
- ▶ Twizel Solar Farm *Landscape Effects Assessment for Private Energy Company*
- ▶ Pākowhai Solar Farm *Landscape Effects Assessment for Private Energy Company*
- ▶ Central HB Solar Farm *Landscape Effects Assessment for Private Individuals*
- ▶ Gisborne, Bunnythorpe & Palmerston North Solar *Landscape & Visual Effects Assessments for Private Energy Company*
- ▶ Marton, Masterton & Dannevirke Solar *Landscape & Visual Effects Assessments for Private Energy Company*
- ▶ Ongaonga Solar *Landscape & Visual Effects Assessment, Landscape Mitigation Plan for SkySolar*
- ▶ Ongaonga Solar *Landscape & Visual Effects Assessment, Landscape Mitigation Plan for Private Client*
- ▶ Mangamaire Solar *Peer Review for TDC*
- ▶ Tikokino Solar *Landscape & Visual Effects Assessment, Landscape Mitigation Plan for Private Client*

Water

- ▶ Waikato Hydro Plant *Landscape & Visual Effects Assessment for Private Energy Client*

Transmission

- ▶ Tongariro National Park 220kV Route Realignment *Landscape, NC & Visual Effects Assessment for Transpower*
- ▶ Cook Strait Cable Replacement *Landscape, NC & Visual Effects Assessment for Transpower*
- ▶ Cambridge to Piarere 220kV and 110kV Tower Relocations *Shortlist Identification, Landscape and Visual Effects Assessment for Transpower*
- ▶ Whau River 220kV Tower Foundation Replacements *Landscape & Visual Effects Assessment for Transpower*
- ▶ Auckland 220kV Route Relocation *Optioneering Shortlist Identification, Landscape and Visual Effects Assessment for Transpower*
- ▶ Kaikohe to Kaeo 110kV Route Selection, *Landscape & Visual Effects Assessment for Top Energy*
- ▶ Ohiniwai Short Term Diversion Route Selection, *Landscape & Visual Effects Assessment for Transpower*
- ▶ SH29 Pole Relocation *Landscape & Visual Effects Assessment for Transpower*
- ▶ Atiamuri Substation Reactor Upgrade *Landscape & Visual Effects Assessment for Transpower*
- ▶ Kawerau Substation *Landscape Mitigation Plan for Transpower*
- ▶ Puketoi Wind Farm Transmission *Peer Review for TDC & PNCC*
- ▶ Central North Island Grid Upgrade *Landscape & Visual Effects Assessment for Transpower*

Awards:

- ▶ 2024 – Hastings City Business Award for Best Professional Services Company
- ▶ 2023 – Hawke's Bay Chamber of Commerce Award for Innovation
- ▶ 2023 – NZILA Award of Excellence for Waiaroha Water Treatment Facility
- ▶ 2023 – NZILA Presidents Award
- ▶ 2019 – Te Karanga o Te Tui (NZILA Supreme Award) Ātea a Rangi
- ▶ 2015 – NZPI BP Award for Consultation and Participation, Mana Whenua Fibred (Chorus)
- ▶ Various awards through our association with Hastings District Council for Waiaroha Water Treatment Facility

Leadership, Governance and CPD:

- ▶ Past Chair NZILA Environmental Legislation Committee | Lead author NZILA Submission on RMA Reform
- ▶ Making Good Decisions active Certificate Holder
- ▶ Trustee Te Mata Park
- ▶ Trustee Hawke's Bay Foundation

TUKITUKI WATER SECURITY PROJECT – LAND EXCHANGE APPLICATION (FTAA-2603-L003) TWSL RESPONSE TO PROPOSED CONDITIONS

KEY

- > The proposed conditions as drafted by DOC wording are shown in black text.
- > TWSL's proposed amendments are shown in red text – new text underlined and deleted text ~~struck through~~.

Definitions

Act means the Fast-track Approvals Act 2024

Approval Holder: means the authorised person for the purposes of the Schedule 2 listing, being Tukituki Water Security Limited, or any successor approved in writing by the Minister, being the entity to whom approval is granted under these conditions.

Approval holder's land: means the land in the ownership or control of the Approval Holder that is subject to the Land exchange and identified as the parcel known as Smedley Station (fee simple land held by the Public Trust under the Howard Estate Act 1978), Part Section 3 Block X Wakarara Survey District comprised in Record of Title 164412, and as identified in approved plan [X]

DOC-Get: means the land to be transferred from the Approval Holder to the Crown and administered by the Department of Conservation, comprising the Approval Holder's land and shown on approved plans [X].

DOC-Give: means the land currently owned by the Crown and administered as part of the Ruahine Forest Park that is to be transferred to the Approval Holder, comprising approximately 29.7 hectares (more or less), as shown on the approved plans [X].

Crown Land: means, for the purposes of this Approval, land owned by the Crown and held for conservation or reserve purposes, including land administered by or on behalf of the Department of Conservation under the Conservation Act 1987 ~~and/or the Reserves Act 1977~~.

Conservation Improvement Works: means the works required to be undertaken in accordance with the minimum targets and timeframes established in the Ecological Restoration Plan conditions and Pest Mammal Management Plan conditions, including fencing, removal of rubbish and any other works required under these conditions that the Approval holder is required to undertake at its cost.

Exchange Agreement means the agreement entered into under section 78 of the Fast-track Approvals Act 2024 and the Minister of Conservation giving effect to the land exchange authorised by this Approval.

The Minister: means for the purposes of this Approval, the Minister ~~for of~~ Conservation, or any person acting under delegated authority on behalf of the Minister, in accordance with the Conservation Act 1987 ~~or the Reserves Act 1977~~.

Commented [MDL1]: The Minister is not exercising a specific function under the Reserves Act for the purposes of these condition.

Commented [MDL2]: As above



Pre conditions

To prepare the land for exchange, the following pre-conditions are imposed under schedule 6, clause 31 of the Act and must be completed within 2 years of the date of approval:

1. The Approval holder must provide a draft survey plan to the Minister no less than 20 working days before submitting the final survey plan under condition 2.
2. The Approval holder must provide to the Minister a final survey plan. The Minister ~~or the Minister's delegate~~ will make best endeavours, to approve or reject ~~decline~~ the final survey plan within 20 working days of receipt. Any ~~rejection decision to decline by the Minister~~ must be accompanied by written reasons.
3. The Approval holder shall obtain all consents and approvals required to separately define the DOC-Get land and to enable ownership of that land to be transferred to the Crown.
4. The Approval holder shall obtain all consents and approvals required to separately define the DOC-Give land and to enable ownership of the DOC-Give land to be transferred to the Crown as fee simple land.
5. For avoidance of doubt all costs associated with complying with Conditions 1 to 4 shall be met by the Approval holder.

Commented [MDL3]: Delete - Delegation included under the definition of Minister.

Proposed draft conditions (Cl.32 Sch.6 of the Act)

6. The land being given by the Crown by way of exchange must be transferred to the Approval holder, without reservation, classification, interest or encumbrance to allow for transfer from the Crown to the Approval Holder after Gazettal.

Costs

7. The Approval holder must pay the Minister's costs and expenses of, and incidental to, preparing and signing ~~the an~~ Exchange Agreement or any extension or variation of it, including surveying, conveyancing and legal costs. [Imposed under s78]
8. The Approval holder must pay to the Minister all costs associated with the Minister's work to give effect to the Exchange Agreement, determined at the standard rates ~~for cost recovery~~ then applying in the Department of Conservation ~~for cost recovery~~. [Imposed under s78]
9. The Approval holder must pay in full immediately on demand all costs and fees (including solicitors' costs and fees of debt collecting agencies engaged by the Minister) arising out of and associated with steps taken by the Minister to enforce or attempt to enforce the Minister's rights and powers under the Exchange Agreement including the right to recover outstanding money owed to the Minister. [Imposed under s78]

Bonds for Conservation ~~Improvement~~ Works

10. The ~~a~~Approval holder shall provide to the Minister, before giving effect to the exchange, a performance security either in cash or as a surety bond from a trading bank, insurance company or bond guarantor, a bond set in accordance with Condition 10(b):
 - a) **Scope:** Secure the Approval holders timely performance of all identified Conservation Improvement Works on the land to be given.



- b) **Amount:** Be in an amount equal to the reasonably estimated cost (as certified by an independent Quantity Surveyor, ~~or~~ registered valuer or contractor) of completing the Conservation Improvement Works. The Bond amount shall be subject to audit and revaluation by mutual agreement (or by binding expert determination if disputed).
 - c) **Form:** Be provided by way of a performance guarantee by a group company of the Approval holder which provides performance security, or (if preferred by the Approval holder) an unconditional bank guarantee or irrevocable performance bond from a NZ-registered bank or insurer reasonably acceptable to the Minister (alternatively, a cash deposit may be lodged).
 - d) **Release Schedule:** The Bond shall be released in two stages:
 - i) fifty percent (50%) upon Condition and acceptance by the Minister or the Minister's agent after seven years, and the Minister (or his agent) being satisfied that all other components of the Conservation Improvement Works have been completed in accordance with the conditions; and
 - ii) the remaining fifty percent (50%) at the close of the ten year maintenance period following such completion, provided the land remains free of noxious weeds and meets the minimum standards set out in Table 1.
11. If the Approval holder breaches or fails to carry out the Conservation Improvement Works, or in carrying out the Activities Conservation Improvement Works there arise adverse effects not authorised or reasonably foreseen, the Minister may call on the bond or any portion of it to ensure the Conservation Improvement Works are completed in accordance with the conditions and/or to remedy or mitigate those adverse effects.
 12. The Bond shall only be drawn upon if the Approval holder fails to complete the Conservation Improvement Works ~~including or for the reasons identified in condition 11~~ by the deadlines set out in Table 1 (or maintain them during the maintenance period) after receiving written notice and a 30 working day cure period. Any call on the Bond shall be limited to the cost of completing or remedying the Conservation Improvement Works, and the Applicant may dispute any call by written notice; ~~Un~~Unresolved disputes will be referred to arbitration in New Zealand under the Arbitration Act 1996 before funds are released.

Fencing

13. The Approval holder must, at its cost, construct all boundary fencing to exclude stock and deer on the external boundary of the land being transferred to the Crown. ~~The required locations and fence specifications must be identified in a pre-settlement fencing plan agreed by the parties in accordance with the Exchange Agreement.~~
14. Maintenance and repair of the agreed ~~fencing~~ will be the responsibility of the ~~an~~Approval holder for a minimum of 10 years.

Biosecurity Act

15. The Approval holder will at its cost ensure that the land to be transferred to the Minister is compliant with any applicable "good neighbour" rules under the Biosecurity Act 1993 to the Minister's satisfaction prior to the Settlement Date. [Imposed under s78]



Rates

16. There shall be no apportionment of rates or other outgoings paid by the Parties. [Imposed under s78]

Signage

17. The Approval holder must construct and install signage in accordance with DOC's sign standards indicating the ~~reserve~~ name ~~of the DOC-Get land~~ at the Approval holder's cost. These shall be situated in locations agreed to in consultation with DOC to make the public aware of ownership and ~~rights~~ of access.

Structure and improvements, condition of land

18. The land being acquired by the Approval holder, including any structures or improvements thereon, is transferred and accepted by the Approval holder on an "as is, where is" basis. [imposed under s78]
19. The Minister accepts no liability (financial or otherwise) in relation to any structure or other improvement on the ~~land DOC-Give land~~ being acquired by the Approval holder, including for any remedial, removal, or maintenance costs associated with any structure or improvement. [Imposed under s78]
20. Unless otherwise instructed by the Minister, the Applicant will at its cost remove any structures and improvements from the ~~DOC-Get~~ land to be transferred to the Minister and will reinstate any land impacted by removal works. [Imposed under s78]
21. The Applicant will, at its cost, ensure that any structures and improvements remaining on the ~~DOC-Give~~ land to be transferred to the Minister are safe and lawful. [Imposed under s78]
22. The Approval holder must at its own cost remove all rubbish from the ~~DOC-Give~~ land to be transferred and will reinstate any land impacted by removal works.

Rights of first refusal

23. The Approval holder confirms that any rights of first refusal or similar obligations that may otherwise be triggered by this land exchange have been waived. [Imposed under s78]

Ecological Restoration Plan

24. No later than 30 working days before settlement, the Approval holder must provide to DOC for its ~~approval certification~~ an Ecological Restoration Plan [ERP]. ~~The approval is to confirm that the Ecological Restoration Plan provides the means to achieve the purpose and addresses the matters set out~~ Certification shall be limited to confirming that the ERP achieves the objective of the plan and addresses the matters identified in Condition 25.
25. The ~~purpose/objective~~ of the ERP is to set out the methods the Approval Holder will implement to:
 - a) ~~Control~~ Sufficiently suppress all ~~weed pest plants, as classified as pests in Table 2 of the Hawkes Bay Regional Pest Management Plan, species~~ at the site ~~to facilitate establishment of indigenous species across the site and protect existing indigenous habitat from pest plants, so that no flowering or fruiting individuals remain, and c~~ Carry out ongoing ~~weed~~ control ~~of pest plants~~ to ensure the weeds remain suppressed for a minimum of 10 years.
 - b) Protect and improve the condition of existing indigenous vegetation on the site.



- c) Manage areas of exotic vegetation (including pasture and rank grass) to establish self-sustaining indigenous habitats with a minimum 80% canopy cover of woody indigenous species.
- d) Revegetate the 10-metre-wide riparian yard of all streams in Donovan Gully to achieve a minimum 1,200 metres stream length on both sides of the stream.
- e) Achieve a minimum 90% success rate and 80% canopy cover for newly planted indigenous vegetation after a minimum maintenance period of five years. If a 90% success rate and 80% canopy cover is not achieved within five years, ongoing maintenance and management will be required until this minimum requirement has been achieved.
- f) Implement measures to maintain wetland habitat values within the Donovan Gully wetlands, including the establishment of native sward-forming hydrophytes in areas where increased shading from riparian restoration is likely to result in a reduction in wetland extent or a transition to stream habitat.
- g) Ensure that the timeframes for management activities remain consistent with the consent conditions associated with the construction of the dam on the Mākaroro River, and do not result in DOC being required to undertake management work that is otherwise required to be carried out by the Approval Holder.

25A The ERP shall adopt an adaptive regeneration approach whereby natural regeneration is promoted in the first instance through pest plant control. The Plan shall include:

- a) Methods for monitoring indigenous vegetation regeneration and pest plant abundance;
 - b) Performance measures and timeframes for assessing whether natural regeneration is occurring;
 - c) Procedures for reviewing outcomes;
 - d) Identification of circumstances where natural regeneration is not achieving the desired outcomes; and
 - e) Alternative regeneration measures that may be implemented where monitoring demonstrates that natural regeneration is not achieving the desired outcomes, including additional weed control, direct seeding, enrichment planting, or other revegetation methods.
26. Except as already specified in these conditions; The ERP must include timeframes for matters set out in Condition 25(c). Timeframes may vary depending on the approach proposed (i.e. revegetation planting vs. managed regeneration).
27. The ERP must be prepared by a suitably qualified and experienced ecologist.
28. The Approval Holder must undertake the anticipated activities in accordance with the approved certified ERP prepared in accordance with Conditions 24, 25, 25A and 26 above at all times.
29. The ERP may be amended by the Approval holder at any time, provided the amendments are:
- a) for the purpose of improving the efficacy of the management of weeds;
 - b) for the purpose of providing for better planting and maintenance methodology(s). This may include substituting plant species if it is found that a more appropriate plant species is better suited to this environment, while achieving identified biodiversity enhancements;



- c) for the purpose of applying best practicable measures;
 - d) consistent with the conditions of this approval; and
 - e) submitted in writing to DOC for its approval prior to any amendment being implemented.
30. The ~~Approval~~ holder must provide DOC with an annual report within 30 working days after each year of implementation of the ERP. The first annual report will be due 12 months after ~~the first approval certification~~ of the ERP. The report must summarise planting undertaken, weed management, monitoring results for weeds and restoration planting, any target exceedances for weeds and/or any ecological restoration minimum success rates that have not been achieved, and any response actions implemented.
31. Plants must be eco-sourced within the Ruahine Ecological District and sourced from a reputable nursery able to provide provenance information on request. All plants must be healthy, not root-bound, and weed free at the time of planting.

Commented [JW4]: Or certification?

Pest Mammal Management Plan (PMMP)

32. No later than 30 working days before settlement, the Approval holder must provide to DOC for ~~its approval certification~~ a Pest Mammal Management Plan (PMMP). ~~The approval is to confirm that the PMMP provides the means to achieve the purpose and addresses the matters set out~~ Certification shall be limited to confirming that the PMMP achieves the objective of the plan and addresses the matters identified in Condition 33 below.
33. The ~~purpose~~ objective of the PMMP is to set out how mammalian pest control will be undertaken on the SEB to achieve the management targets in Table 1 below.

Pest Species	Timeframe	Management Target
Possums	Testing 10 Years, or until target is achieved (whichever is ~~tongersooner~~)	< 5% Residual Trap Catch (forest and scrub areas)
Deer	Testing 10 Years, or until target is achieved (whichever is ~~tongersooner~~)	Fecal pellet count = 0 (site wide)
Rats	Testing 10 Years, or until target is achieved (whichever is ~~tongersooner~~)	< 5% Tracking Tunnel Index (forest and scrub areas)
Mustelids	Testing 10 Years, or until target is achieved (whichever is ~~tongersooner~~)	< 5% Residual Trap Catch (site-wide)
Cats	Testing 10 Years, or until target is achieved (whichever is ~~tongersooner~~)	No target set due to highly transitory nature of feral cats, although all kills should be documented (site wide).

Table 1: Pest mammal management timeframes and targets



34. The PMMP must be prepared by a suitably qualified and experienced ecologist
35. The Approval holder must undertake all pest management activities in accordance with the **approved/certified** PMMP.
36. The PMMP may, at any time, be amended where the amendment will improve practicality or effectiveness of pest management activities. The Approval holder must submit the amended PMMP in writing to DOC for approval, prior to any amendment being implemented.
37. The Approval holder must provide DOC with an annual report within 30 working days after each year of implementation of the PMMP. The first annual report will be due 12 months after the first approval of the PMMP. The report must summarise pest control undertaken, monitoring results, any target exceedances, and any response actions implemented.

Public Access

38. **The Approval holder shall construct, or pay for, a pedestrian track within Ruahine Forest Park connecting the public access track required under Schedule 6a of the Project resource consents to Mākaroro Road, generally in the location shown in Figure 1, but subject to survey and agreement with DOC on routing.**

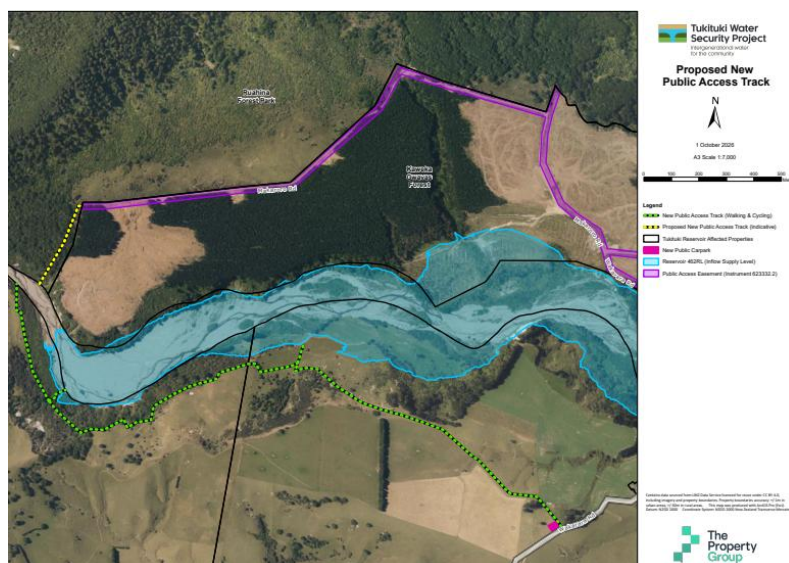


Figure 1: Proposed New Public Access Track

39. **The track required by Condition 38 shall be established as a low-impact backcountry walking track intended to provide pedestrian access. The track shall not include structures, surfacing, or improvements beyond those reasonably necessary to provide safe pedestrian passage.**
40. **The track required by Condition 38 shall be completed prior to, or concurrent with, public access being affected by reservoir filling, unless otherwise agreed in writing by the Minister.**



Smedley Station Agricultural Heritage Interpretation and Public Access

41. ~~The Approval holder shall implement measures to recognise the agricultural heritage values of Smedley Station and facilitate public access to the SEB land. As a minimum these measures shall include:~~

- ~~a) the retention of representative sections of historic farm fencing, farm tracks, or other agricultural features, where compatible with the ecological restoration objectives of the SEB land;~~
- ~~b) the installation of interpretive signage describing the history and agricultural heritage of Smedley Station and the retained features; and~~
- ~~c) the provision of an entrance stile and associated wayfinding signage to facilitate public access from the Crown Marginal Strip or other agreed access location.~~

~~For the avoidance of doubt, Condition 41 does not require the retention of pastoral land use or agricultural infrastructure beyond the representative features and access required by Condition 41.~~

Continuance of rights

~~39. The rights and obligations of the parties under this agreement continue beyond settlement of this agreement accordingly those rights and obligations will not merge in the settlement but will continue thereafter with full force and effect. [Imposed under s78]~~

Commented [MDL5]: Delete - this is a clause for an Exchange Agreement, but is not appropriate for a condition of approval.

