



THE BEARS HOME PROJECT
MANAGEMENT LIMITED

**MURIWAI DOWNS GOLF
PROJECT**

Resource Consent Applications and
Assessment of Environmental Effects

17 December 2021

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REPORT INFORMATION

Report Status	FINAL
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File Location	Projects>Golf Strategy Group>MDL001277 Muriwai Downs
Author	Mason Jackson
Review By	Phil Mitchell
Version Date	17 December 2021

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GLOSSARY OF ABBREVIATIONS

AC	Auckland Council
AEE	Assessment of Environmental Effects
AUP	Auckland Unitary Plan (operative in part)
GPMC	Golf and Property Maintenance Complex
NES	National Environmental Standard
NPS	National Policy Statement
ONF	Outstanding Natural Feature
RMA	Resource Management Act 1991
SEA-T	Significant Ecological Area – Terrestrial

NOMENCLATURE

Applicant means The Bears Home Project Management Limited.

AUP site means any individual land allotment within the Property as listed in listed in point 3 of Form 9 below (as per the definition of “site” in the AUP).



Golf Course Components (Refer Figure (i))

- **Tees** are slightly built-up areas where the first golf shots are made on each hole.
- **Fairways** are the main areas of each golf hole between the tees and the greens.
- **Primary rough** areas are extensions of the fairways but mown slightly higher.
- **Secondary rough** areas are naturalised areas external to, but adjoining, the fairway. Secondary rough areas usually draw a penalty for wayward shots.
- **Greens** are the smooth grassed areas located at the end points of each fairway surrounding the flagstick and hole.
- **Bunkers** are depressions near the green or on a fairway that are usually filled with sand. They are supposed to be hazards that players avoid hitting into.
- **Transition Areas** include areas of the site between the outside perimeter of the golf course and the edges of the farm or environmentally sensitive areas such as wetlands, streams and SEAs.
- **Tracks** are either sealed or unsealed accessways within the site used primarily by operational and maintenance vehicles and equipment.



Figure (i) Typical Golf Hole Layout

Muriwai Downs Property or **the Property** means the sum of all land allotments owned by the applicant listed in point 3 of Form 9 below.

Paths are either sealed or unsealed accessways primarily used around buildings and golf course areas for pedestrian and golf cart access.

Roads are sealed accessways within the site used primarily by cars and delivery vehicles.

Site means all land within the **Property** to be used for the **Project**.

The Project includes:

- All physical resources associated with the site; and
- All activities associated with designing, consenting, constructing, operating and maintaining the site.

More specifically, the **Project** is described as the construction, operation and maintenance of:

- An international, marquee standard 19-hole golf course with warm-up fairway and short-game practice area;
- A clubhouse;
- A sports academy including; an academy building (inclusive of office space), academy driving range, practice green, 9-hole short course, and indoor and outdoor tennis facilities;
- A golf and property maintenance complex;
- A luxury lodge which includes accommodation, a wellness centre and retreat;
- Dining facilities including a clubhouse and lodge restaurants and a café at the sports academy;
- Groundwater and surface water abstraction facilities;
- Off-stream water storage reservoir;
- Significant ecological restoration and enhancement works; and
- Various supporting infrastructure associated with the above items.



PART A

Resource Consent Application

FORM 9

APPLICATION FOR RESOURCE CONSENT

Sections 88 of the Resource Management Act 1991

To: Auckland Council
Bledisloe House
Ground Floor
24 Wellesley Street West
AUCKLAND

1. The Bears Home Project Management Limited applies for:

All necessary resource consents to authorise the construction, operation and maintenance of a golf course, sports academy and luxury accommodation complex, including all associated ancillary buildings, structures and activities (the “**Project**”) at or about map reference NZTM 1729210mE, 5925659mN as generally shown in **Schedule A**.

The types of resource consent being applied for comprise:

- A land use consent for the Project;
- Water permits for taking, diverting and damming groundwater and surface water;
- Discharge permits for discharges to air, water and land associated with;
- The operation of an on-site wastewater treatment plant;
- Disturbing soil on land containing elevated levels of contaminants;
- Stormwater runoff from impervious areas; and
- Incidental discharges of maintenance related wash water from buildings and structures; and
- Consents in accordance with relevant National Environmental Standards¹.

2. A copy of Auckland Council's Form 9 is included in **Schedule B**. This provides additional information relating to; pre-application engagement, site visit requirements, executive

¹ Including the Resource Management (National Environmental Standard for Freshwater) Regulations 2020; Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

summary of the application for notification purposes, Mana Whenua engagement and surface water take and wastewater discharge locations.

3. Relevant regulations and AUP rules assessed to be infringed by the Project include, but are not necessarily limited to, those set out in **Schedule C**.
4. Other activities that are part of the proposal to which the application relates, but are permitted activities and do not require a resource consent in accordance with section 87A(1) of the RMA, include, but are not necessarily limited to, those set out in **Schedule D**.
5. The application will be assessed under the AUP and relevant National Environmental Standards. There are no operative legacy plan provisions that apply.
6. The proposed activity is to occur is on land collectively known as the Muriwai Downs Property. The location of the Property in the context of the Muriwai area is shown in **Schedule E** of this application. The titles which comprise the Property are summarised below:

Legal Description	Address	Site Area (hectares)
Lot 1 DP 187057	670 Muriwai Rd	144
Lot 1 DP 191137 and Section 1 SO Plan 69201		1.2
Lot 2 DP 196478	610 Muriwai Rd	141
Lot 3 DP 196479, Sec 3 SO 41485	451 Muriwai Rd	64
Lot 4 DP 187060, Sec 3 SO 41485	451 Muriwai Rd	48
Lot 5 DP 187061	697 Muriwai Rd	101
Lot 1 DP 163736	680 Muriwai Rd	1.9
Lot 1 DP 196478	614 Muriwai Rd	5.5

7. The Property is owned by The Bears Home Company Limited which is the parent company of the Applicant.
8. The names and addresses of each occupier of the Applicant's dwellings within the land to which the application relates are provided below:

Address	Name
610 Muriwai Road	Paul Mackie

Address	Name
614 Muriwai Road	Jerry Ren
670 Muriwai Road	Lain Bacon
680 Muriwai Road	Glenn Houghton
697 Muriwai Road	Jamie Nikora

- 9.** The following additional resource consents may be needed for the proposal to which this application relates but have not been applied for at this stage:
- (a) A subdivision consent to adjust the boundary line between Lot 4 DP 187060 and Lot 5 DP 187061 to enable a proposed water storage reservoir to be located wholly on one land allotment. This application will be sought at a later date following the final design and installation of the reservoir. This will enable accurate survey data and as-built plans to be included in the application.
 - (b) Any land use consents required for temporary activities (special and/or sporting events) will also be sought at a later date if relevant.
- 10.** An assessment of the proposed activity’s effects on the environment is included in Part B of this document that—
- (a) includes the information required by clause 6 of Schedule 4 of the RMA; and
 - (b) addresses the matters specified in clause 7 of Schedule 4 of the RMA; and
 - (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.
- 11.** Assessments of the proposed activity against the matters set out in Part 2 of the RMA is and any relevant provisions of a document referred to in section 104(1)(b) of the RMA, including the information required by clause 2(2) of Schedule 4 of that Act are also provided in Part B of this document.
- 12.** Various technical reports supporting the application are provided in Part C of this application.
- 13.** The Applicant requests the application is publicly notified in accordance with 95A.
- 14.** The Applicant requests unlimited duration for any land use consent granted and 35 years for any discharge and water permits granted.

Date: 17 December 2021



The Bears Home Project Management Limited

By its duly authorised agents Mitchell Daysh Limited

Phil Mitchell

Partner

Addresses for Service:

Mitchell Daysh Limited

PO Box 1307

HAMILTON 3240

Telephone: +64 27 230 8567

Email: mason.jackson@mitcheldaysh.co.nz

Contact person: Mason Jackson

AND

Buddle Findlay

Email: joseph.bergin@buddlefindlay.com

Contact person: Joseph Bergin

AND

Buddle Findlay

Email: jennifer.caldwell@buddlefindlay.com

Contact person: Jennifer Caldwell

Address for billing:

Golf Strategy Group

60 Clearwater Avenue

CHRISTCHURCH 8051

Telephone: +64 21 108 9766

Email: david@golfstrategygroup.com

Contact person: David Moore

SCHEDULE A: The Project Site



SCHEDULE B: Auckland Council Form 9

Application for resource consent

Resource Consents Department Under Section 88 of the Resource Management Act 1991

To: Auckland Council
Private Bag 92300
Auckland 1142

You may deliver your application to your nearest Auckland Council service centre.

This form provides the council with your contact information and details about your proposal. If you need help completing this form or you are unsure about which form to use, visit aucklandcouncil.govt.nz/resourceconsents where you will find helpful guidance notes, or contact the council on 09 301 0101.

If you fail to complete this form and provide the necessary information, including the deposit fee, your application may not be accepted for processing. See Guidance Note 3.

1. Site location details

Site(s) to which this application relates is described as

Number: _____ Street: _____

Suburb: _____

Legal description(s): _____

2. General application details

This application is for (tick all the boxes necessary to cover the proposal):

Land use consent (district/city) Subdivision consent Discharge permit
Coastal permit Water permit

The application will be assessed under the Auckland Unitary Plan (Operative in part). If there are any other operative legacy plan provisions that apply, please indicate.

Auckland Central Area	Hauraki Gulf Islands	Auckland Isthmus	Franklin
Manukau	North Shore	Papakura	Rodney
Waitākere	Coastal	Air, land, water	Farm dairy discharges

Is consent required under a National Environmental Standard (NES)?

Yes (tick applicable) No

NES for Air Quality

NES for Drinking Water

NES for Telecommunication Facilities

NES for Electricity Transmission Activities

NES for Assessing and Managing Contaminants in Soil to Protect Human Health

NES for Freshwater

Other

Office use only

Application number(s): _____

Receipt number: _____

Receipt date: _____

Deposit paid: _____

Consent:

District

Regional

Stream number: _____

3. Additional resource consents required

3.1 Are any additional resource consent(s) required for this proposal but not being applied for under this application?

No

Yes (give details)

3.2 Advise of any existing consents and the date at which they expire.

Provide consent numbers and an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)).

4. Applicant's details (all invoices will be made out to and sent to the applicant unless otherwise stated in section 6):

4.1 Applicant's full name

The name of the consent holder who will be responsible for the consent and any associated costs unless otherwise stated in section 6.

Last name:

First name(s):

Last name:

First name(s):

or

Company/trust/organisation:

Contact person/all trustee names:

Physical address:

Postcode:

Postal address (if different from above):

Postcode:

Phone (day):

Mobile:

Email:

The applicant is the:

owner

occupier

leasee

prospective purchaser (of the site to which the application relates)

other (please specify)

4.2 Name and address of each owner and occupier of land to which the application relates (if different from above):

Name:

Address:

Postcode:

5. Agent's or consultant's details.

All correspondence will be sent to the agent and may also be sent to the applicant unless otherwise stated in section 6.

Company: _____

Contact: _____

Postal address: _____

Postcode: _____

Phone (day): _____

Mobile: _____

Email: _____

Preferred contact: email phone

6. Alternative addresses for correspondence and payee of invoices

All correspondence (excluding invoices) sent to:

applicant

agent/consultant

other (name and address)

Name: _____

Address: _____

Postcode: _____

All invoices made out to and sent to:

applicant

agent/consultant

other (name and address)

Name: _____

Address: _____

Postcode: _____

7. Description of proposed activity (if insufficient space, please provide on additional pages)

8. Other activities

Choose either:

there are no other activities that are part of the proposal to which this application relates

the other activities that are part of the proposal to which the application relates are as follows:

(Describe the other activities. For any activities that are permitted activities, explain how the activity complies with the requirements, conditions, and permissions of any Plan or regulation so that a resource consent is not required for that activity under section 87A(1) of the RMA).

9. Pre-application information

Have you had a pre-application meeting with the council regarding this proposal?

Yes

No

Copy of meeting record attached

Date of meeting:

If 'yes', provide the pre-application meeting reference number and/or name of staff member:

10. Site visit requirements

10.1 Is there a locked gate, security system or dog(s) restricting access to the site by council staff?

Yes

No

10.2 Provide details of any entry restrictions or hazards that council staff should be aware of, e.g. health and safety, organic farm, measures to inhibit the transfer of Psa-V etc.

11. Notification of your application

Are you requesting that the application be publicly notified?

Yes

No

If 'yes', please provide an executive summary below and an electronic version of your application for notification purposes.

Please refer to the Standards for submitting documents electronically found at the council's website aucklandcouncil.govt.nz/resourceconsents

12. Mana Whenua cultural values assessment and the Auckland Unitary Plan (Operative in part) (AUP(OP))

12.1 Is your proposal located within a "Site and Place of Significance to Mana Whenua" as identified in the AUP(OP)

Yes

No

12.2 Is your proposal an activity that has the potential to generate effects on Mana Whenua and their relationship with their ancestral land, water, sites, waahi tapu and other taonga)?

Yes

No

12.3 If 'yes' to 12.1 or 12.2, have you contacted all the relevant Mana Whenua groups to establish whether their values are affected by your proposal?

Yes

No

12.4 If 'yes', please provide details with your application of all Mana Whenua groups contacted and their responses.

Please note that providing this information with the lodgement of your application will assist in processing your application in a timely manner. If you have not provided the relevant information your application may need to be placed on hold while this information is obtained.

In any case, please note that the council can assist you in determining which Mana Whenua groups should be approached.

For more information refer to the "Engaging with Mana Whenua" page at aucklandcouncil.govt.nz

13. Information to be submitted with your application

To satisfy the requirements of section 88(2) and Schedule 4 of the Resource Management Act 1991 (RMA), please attach the following information to your application:

Accept/Reject

two copies (including one unbound) of all information, including application form and plans, for all applications. Refer to Guidance note 2 for guidance on the preparation of plans
application deposit fee – refer to the council’s fees and charges schedule. Indicate method of payment below:

eftpos amount paid \$ _____	credit card customer account customer acc/number: _____
--------------------------------	---

Record(s) of Title less than three months old for the site to which this application relates. Attach the title and any consent notices, covenants, easements attached to the title if relevant or affected by the proposed activity
locality plan or aerial photo. Indicate the location of the site in relation to the street and other landmarks. Show the street number of the subject site and those of adjoining sites

optional: detail(s) of the resource consent(s) being applied for including reference to specific rule(s) and reasons for consent

an assessment of effects on the environment in accordance with Schedule 4 of the RMA at a level of detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment. This may require one or more technical specialist reports. Include a full description of the proposed activity, the effects that may be generated and how these would be managed. For more information refer to Schedule 4 of the RMA and the council’s Guidance note 1

an assessment against the matters in Part 2 of the RMA. This may be included in your AEE or in a separate document. For more information refer to Schedule 4 of the RMA and the council’s guidance note 1

an assessment against any relevant provisions of a statutory document (e.g. district and regional plans, the AUP(OP), National Policy Statements etc.). This may be included in your AEE or in a separate document. For more information refer to Schedule 4 of the RMA and the council’s guidance note 1

include other information required by the relevant section of the AUP(OP) and legacy district plan and regional plans, the RMA or any regulations made under that act

include details (name, postal and site address) of consultation undertaken (including with iwi) and any responses from persons consulted. For more information refer to Schedule 4 of the RMA and guidance note 1

a completed checklist where relevant to your application

14. Additional information – for regional consents or permits only under AUP (OP) and legacy operative regional plans

14.1 Map reference of proposed works:

mE

mN

Use New Zealand Transverse Mercator (NZTM), e.g. 1756730mE 5919740mN.

Ensure that the location of your activity is marked to an accuracy of 10 metres on your location plan. You can obtain your map coordinates and an aerial photo from the Auckland Council GeoMaps (GIS viewer) found on the home page of the council’s website, aucklandcouncil.govt.nz

14.2 Please provide the map reference of discharge points if relevant.

Map reference of proposed discharge or take point(s):

Is the discharge/take location on the same property as the application site?

Yes

No

If ‘no’, complete the details below.

Name or property owner (if not the same):

Address:

Postcode:

Legal description:

Documentation confirming easement and/or covenants for wastewater, including a certificate of title for the property where the discharge occurs.

If required, also attach land owner approval.

14.3 Give the name of any stream, river or lake (or if the stream is unnamed, state which water body it is a tributary of).

Stream name: _____ or tributary of: _____

14.4 Please indicate the duration for which you are requesting a permit (if relevant):

_____ years

15. Signature of the applicant(s) or agent

Please read these notes before signing the application form

Payment of fees and charges

The council may charge the applicant for all costs actually and reasonably incurred in processing this application. Subject to the applicant's rights under sections 357B and 358 of the RMA to object to any costs, the applicant undertakes to pay all and future processing costs incurred by the council. The council may issue interim invoices for applications. If any steps, including the use of debt collectors and/or lawyers, are necessary to recover unpaid processing costs, the applicant agrees to pay all collection costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company, in signing this application the applicant binds the trust, society or company to pay all the above costs and guarantee to pay all the above costs in their personal capacity. Refer to the council's fees and charges schedule found at: aucklandcouncil.govt.nz/resourceconsents

Note: some regional permits include ongoing annual charges in addition to the processing fee. These are payable by the consent holder.

Development and financial contributions

When granting consent to certain activities, the council may levy a monetary contribution. Development contributions are levied under the Local Government Act 2002 in accordance with the council's Development Contribution Policy. Financial or reserve contributions are levied under the RMA under the relevant district plan. When such contributions become due, the consent holder is responsible for their payment. Unless otherwise advised, the name and contact address of the person responsible for payment of any contributions will be taken as the applicant.

Alternative contact and address for development and financial contributions:

Name: _____

Address: _____

Postcode: _____

Site visit

By signing this form, if you are the owner of the application site, you confirm that the council may undertake a site inspection.

Privacy information

The council requires the information you have provided on this form to process your application under the RMA and to collect statistics. The council will hold and store the information, including all associated reports and attachments, on a public register. The details may also be made available to the public on the council's website. These details are collected to inform the general public and community groups about all consents which have been processed or issued through the council. If you would like to request access to, or correction of any details, please contact the council.

Declaration for the applicant or authorised agent or other

I/we confirm that I/we have read and understood the notes above.

If a private or family trust is the applicant, at least two New Zealand-based trustees are required to provide contact details and sign this form.

Applicant's name: _____

Applicant's signature: _____ Date: _____

Applicant's name: _____

Applicant's signature: _____ Date: _____

Continued overleaf...

Applicant's name:

Applicant's signature:

Date:

Declaration for the agent authorised to sign on behalf of the applicant

As authorised agent for the applicant, I confirm that I have read and understood the above notes and confirm that I have fully informed the applicant of their/its liability under this document, including for fees and other charges, and that I have the applicant's authority to sign this application on their/its behalf.

Agent's full name:

Agent's signature:



Date

17.12.21

Schedule C: List of Regulation and Rule Infringements

Regulations infringed under the National Environmental Standard for Assessing and Managing Contaminants in Soil

Activity	Regulation	Status	Comment
Land disturbance activities on HAIL sites	Reg 9(1)	Controlled	Earthworks and remediation associated with the Project will require land disturbance activities on HAIL sites exceeding the NES CS permitted threshold for area of disturbance however, the DSI Report confirms that the soil contamination does not exceed the relevant standards of Regulation 7 of the NESCS and that a site management plan is required.
Changing the use of a piece of land that does not comply with reg 8(4).	Reg 9(3)	Controlled	Change in use of the site based on identified concentration levels at the HAIL sites as identified within the DSI Report (Appendix 7).

Regulations infringed under the National Environmental Standard for Freshwater

Activity	Regulation	Status	Comment
Vegetation clearance and earthworks outside of but within 10m of a natural wetland not resulting in complete or partial drainage.	Reg 54(a) & (b)	Non-complying	Golf course developments are not explicitly provided for under the NES FM. These clearance and earthworks activities therefore trigger the 'Other Activities' classification of the NES FM.

Activity	Regulation	Status	Comment
Taking, using, damming, diversion and discharging of water outside of but within 100m of a natural wetland.	Reg 54(c)	Non-complying	The proposal also involves taking of deep groundwater via a bore at a location within a 100m setback from a wetland and taking of surface water in a location within 10m – 100m upstream of a wetland. The proposal will also require the diversion of stormwater and drainage water from areas of the golf course at locations within a 100m setback of a natural wetland.
Reclamation of a section of the bed of a river.	Reg 43	Discretionary	The infilling of a small section (approximately 16m) of intermittent stream bed near its headwaters alongside hole 1 fairway is required to enable the functioning of the golf course as a Marquee Golf Course while avoiding high value Pohutukawa trees.
Vegetation clearance and earthworks or land disturbance outside of but within 10m of a natural wetland and taking, using, damming, diverting and discharging of water within 100m setback from a natural wetland for the construction of wetland utility structures.	Reg 42	Restricted Discretionary	Wetland utility structures will form part of the golf course and wider development and will principally be in the form of boardwalks, bridges and tracks traversing over wetland areas or through areas within a 10m setback from a wetland.
Vegetation clearance and earthworks or land disturbance outside	Reg 39	Restricted Discretionary	The vegetation clearance and earthworks / land disturbance associated with the wetland restoration activities will exceed

Activity	Regulation	Status	Comment
but within 10m of a natural wetland and taking, using, damming, diverting and discharging of water outside but within 100m from a natural wetland for the restoration of natural wetlands.			the permitted limit of 500 m ² for activities specified by Regulation 38(4)(b).

AUP Rules Infringed Relating to Construction Related Activities

Activity	Rule	Status	Comment
Chapter E15 - Vegetation Clearance			
Vegetation alteration or removal, including cumulative removal on the site over a 10-year period of greater than 250m ² of indigenous vegetation.	E15.4.1 (A10)	Restricted Discretionary	The proposal includes removal of more than 250m ² of indigenous vegetation within the Project and construction footprint.
Vegetation alteration or removal within 50m of the shore of a lake within a Natural Lake Management Area	E15.4.1 (A13)	Restricted Discretionary	The proposal includes vegetation removal within 50m of the shore of Lake Ōkaihau, a Natural Lake Management Area including a small stand of eucalypts.
Vegetation alteration or removal within 10m of a rural stream within the Rural-Rural Production Zone.	E15.4.1 (A17)	Restricted Discretionary	The proposal includes vegetation removal within 10m of rural streams within the construction footprint.

Activity	Rule	Status	Comment
Vegetation alteration or removal within 20m of a natural wetland and in the bed of a river or stream, or lake	E15.4.1 (A18)	Restricted Discretionary	The proposal includes removal of vegetation within 20m of natural wetlands on the site.
Vegetation alteration or removal within a SEA-T where activities in Table E15.4.2 do not comply with one or more of the standards in E15.6 and any vegetation alteration or removal not otherwise provided for.	E15.4.2 (A43)	Discretionary	The proposal involves indigenous vegetation removal within an SEA-T.
Tree removal of any tree greater than 4m in height or greater than 400mm in girth	E17.4.2 (10)	Restricted Discretionary	Some vegetation is proposed for removal associated with Muriwai Road widening works necessary to provide safe vehicle access.
Chapters E3, E11 & E12 - Earthworks and Land Disturbance activities			
To undertake earthworks: (i) greater than 50,000m ² where land has a slope less than 10 degrees; and (ii) greater than 2,500m ² where the land has a slope equal to or greater than 10 degrees.	E11.4.1 (A5) & (A8)	Restricted Discretionary	The bulk earthworks associated with the proposal will cover in excess of 50,000m ² of land of varying slopes.
Land disturbance not otherwise provided for being to undertake earthworks in (i) an SEA greater than an area of	E11.4.3 (A28) & (A30)	Restricted Discretionary	The bulk earthworks associated with the Project will involve the disturbance of approximately 1,400m ² of land within an SEA-T.

Activity	Rule	Status	Comment
5m ² ; and (ii) a volume of 5m ³ .			
Land disturbance not otherwise provided for being to (i) undertake earthworks greater than 2500m ² ; and (ii) a volume greater than 1,000m ³ .	E12.4.1 (A6) & (A10)	Restricted Discretionary	The bulk earthworks associated with the proposal consists of approximately 590,000m ³ of cut to fill activities over an area of approximately 99 hectares
Land disturbance within Lake Ōkaihau ONF 72 classified as Site Type C within Schedule 6.	E12.4.3 (A39)	Restricted Discretionary	Land disturbance includes a 43 m ² area and an 8 m ³ volume of disturbance within (ONF 72)
Depositing clean fill, excluding litter, refuse, other waste and/or contaminated material, in an SEA-T, Wetland Management Area and Lake Management Area associated with the construction of a golf course and ancillary infrastructure both outside and within an overlay.	E3.4.1 (A6)	Non-complying	The earthworks activities will involve approximately 1,400m ² of disturbance of areas of an SEA-T, and minor areas of mapped Wetland Management and Lake Management Areas (including placement of fill, topsoil or turf) within the construction footprint.
Any activity not complying with the general permitted activity standards in E3.6.1.1 or the specific activity standards in E3.6.1.2 and E3.6.1.3	E3.4.1 (A9)	Discretionary	The infilling of a small section (approximately 16m) of intermittent stream bed near its headwaters alongside hole 1 fairway is required to enable the functioning of the golf course as a Marquee Golf Course while

Activity	Rule	Status	Comment
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avoiding high value Pohutukawa trees.

Works below the natural ground level in an SEA	E11.4.3 (A23)	Restricted Discretionary	The proposal is likely to include the construction of below ground irrigation and drainage infrastructure in small sections of SEA-T requiring trenching.
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Chapter E3 - Structures in, on, under or over the bed of lakes, rivers, streams (including intermittent stream) and wetlands

Structures associated with the enhancement and restoration of lakes, rivers, streams or wetlands not otherwise provided for.	E3.4.1 (A28)	Restricted Discretionary	Construct, use and maintain structures including boardwalks, walking tracks and bridges connecting them, associated with wetland enhancement and restoration of Lake Ōkaihau, Ōkiritoto Wetland, streams and other wetlands both outside and within a SEA-T, Wetland Management and Lake Management overlay.
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Bridges or pipe bridges complying with the standards in E3.6.1.16	E3.4.1 (A29)	Discretionary	Construct, use and maintain bridges, including those also supporting pipes, within an overlay which comply with the relevant standards in E3.6.1.16.
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New cables or lines that cross over a river or stream which do not	E3.4.1 (A31)	Restricted Discretionary	The proposal includes the placement of communication and
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Activity	Rule	Status	Comment
require support structures in the watercourse complying with the standards in E3.6.1.17			power cables and irrigation water lines that cross over a river or stream within a SEA-T overlay that will not require support structures in a waterway and will meet the standards in E3.6.1.17.
Culverts or fords more than 30m in length when measured parallel to the direction of water flow.	E3.4.1 (A33)	Discretionary	Construct, use and maintain a culvert, being more than 30m in length within unnamed tributary of the Ōkiritoto / Raurataua Stream.
Chapter E4 - Other discharges of contaminants			
Discharge of water or contaminants (including washwater) onto or into land and/or into water not complying with the relevant standards or not otherwise provided for by a rule in the Plan	E4.4.1 (A15)	Restricted Discretionary	To authorise discharges of incidental residual flocculant chemical (or similar agents) used as part of sediment control devices during earthworks.
Chapter E7 - Taking, using, damming and diversion of water and drilling			
Holes or bores not meeting the permitted activity standards or controlled activity standards or not otherwise listed	E7.4.1 (A42)	Restricted Discretionary	To construct and use a groundwater bore at or about NZTM 1729833mE, 5925837mN for the abstraction of groundwater for irrigation and potable / domestic water supply purposes.

Activity	Rule	Status	Comment
To construct, use and maintain an off-stream water reservoir for the purpose of storing water for irrigation, site maintenance and dust suppression activities that does not meet the permitted activity standards or controlled activity standards.	E7.4.1 (A35)	Discretionary	To construct an off-stream reservoir with a capacity of 140,000m ³ and a surface area of approximately 37,000m ² , for the purpose of storing surface and ground water for use within the gold course development and associated buildings for irrigation and potable supply.

Chapter E9 - Stormwater quality - High contaminant generating car parks and high use roads

Development of a new or redevelopment of an existing high contaminant generating car park.	E9.4.1 (A6)	Controlled	<p>The proposal provides for the development of a total of 6 new high contaminant-generating car parks as follows:</p> <ul style="list-style-type: none"> ➤ Clubhouse x 2 – 4,153 m², approx. 104 car parks. ➤ Academy – 2,325 m², approx. 69 car parks. ➤ GPMC – 1,951 m², approx. 50 car parks. ➤ Lodge Guest Car Park – 1,278m², approx. 48 car parks. ➤ Lodge Staff Car Park – 850 m², approx. 35 car parks.
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Activity	Rule	Status	Comment
Chapter E23 - Signage			
Comprehensive Development Signage	E23.4.1 (A53)	Restricted Discretionary	Provision of signs on Muriwai Road.
Chapter E27 - Transport			
Parking, loading and access which is an accessory activity, but which does not comply with the standards for parking, loading and access	E27.4.1 (A2)	Restricted Discretionary Activity	Preliminary design of visitor carparks for the proposed Wellness Centre and the GPMC (refer to McKenzie and Co engineering plans on Sheets 7 and 15 respectively) do not comply with the relevant permitted activity standard for manoeuvring.
Construction or use of a vehicle crossing where a Vehicle Access Restriction applies under Standards E27.6.4.1(2) or E27.6.4.1(3)	E27.4.1 (A5)	Restricted Discretionary Activity	<p>Construction, upgrade and use of up to 2 vehicle crossings to the site off Muriwai Road. Since Muriwai Road is an arterial road, these accessways do not comply with standard E27.6.4.1(3)(c).</p> <p>Additionally, the proposed northern vehicle crossing measures 9.7m wide and the proposed southern vehicle crossing measures 10.1m wide. Therefore, both crossings exceed the standard for rural zones (E27.6.4.3.2 (T156)).</p>

Activity	Rule	Status	Comment
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Chapter E30 - Contaminated Land

Discharges of contaminants into air, or into water, or onto or into land not meeting permitted activity Standard E30.6.1.1; E30.6.1.2; E30.6.1.3; E30.6.1.4; or E30.6.1.5	E30.4.1 (A6)	Controlled Activity	Discharges of contaminants into air, or into water, or onto or into land from disturbing soil on land containing elevated levels of contaminants (as identified in the DSI) (Appendix 7)).
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AUP Rules Infringed Relating to Operational Related Activities

Activity	Rule	Status	Comment
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AUP - Ongoing / operational activities

Chapter H19 - Activities in Rural zones

Visitor Accommodation (Luxury Lodge) in a rural zone.	H19.8.1 (A34) & (A36)	Discretionary	To operate, use and maintain a luxury lodge complex including; <ul style="list-style-type: none"> ➤ A main lodge building; ➤ Accommodation units; ➤ A wellness centre; and ➤ All associated ancillary buildings and supporting infrastructure; ➤ within the Rural – Rural
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Activity	Rule	Status	Comment
			Production Zone.
Organised Sport and Recreation and Clubrooms in a rural zone	H19.8.1 (A52) and (A54)	Restricted Discretionary	<p>To operate, use and maintain organised sport and recreation facilities including;</p> <ul style="list-style-type: none"> ➤ A 19-hole golf course with warm-up fairway and short-game practice area; ➤ A clubhouse (clubrooms); ➤ A sports academy including; an academy building, commercial office space, academy driving range, practice green, 9-hole short course, and indoor and outdoor tennis facilities; ➤ A golf and property; maintenance complex; and ➤ All associated ancillary buildings and supporting infrastructure; ➤ within the Rural – Rural Production Zone.

Activity	Rule	Status	Comment
Commercial activities – Training Facility, Wellness Centre, Offices, Retail and ancillary commercial activities	C1.7	Discretionary	To operate and use: <ul style="list-style-type: none"> <li>➤ A sports academy and associated hireage / training services; <li>➤ A golf supplies retail store at the clubhouse; <li>➤ A golf and tennis supplies retail store at the sports academy; <li>➤ Offices for golf and other sporting representative organisations; <li>➤ A wellness centre available for public bookings; <li>➤ Wellness product retail store in the wellness centre; <li>➤ Art and gifts retail store in the main lodge building; <li>➤ A yoga/meeting room in the main lodge building available for public bookings; and

Activity	Rule	Status	Comment
			<ul style="list-style-type: none"> ➤ All ancillary commercial activities; ➤ within the Rural – Rural Production Zone.
Restaurants and Cafes not otherwise provided for in a rural zone	H19.8.1 (A36)	Discretionary	<p>To operate, use and maintain:</p> <ul style="list-style-type: none"> ➤ Casual dining, bar/café facilities within the main lodge building – available for public pre-bookings; ➤ Restaurant and bar within the clubhouse; ➤ Café within the sports academy building - available to the public; ➤ all located within the Rural – Rural Production Zone.

Chapter E7 – Water takes

Take and use of surface water, including dams not meeting the permitted activity, controlled activity or restricted discretionary activity	E7.4.1 (A9)	Discretionary	To take, store and use water from the Raurataua Stream at or about NZTM 1731325mE, 5926079mN during high-flows (above median flow), and at
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Activity	Rule	Status	Comment
standards or not otherwise listed			a rate that does not exceed 10% of flow, for the purpose of pasture irrigation, site maintenance and dust suppression activities.
Take and use of groundwater not meeting the permitted activity or restricted discretionary activity standards or not otherwise listed.	E7.4.1 (A26)	Discretionary	To take groundwater from the volcanic aquifer (Waiatarua Formation) and use it for irrigation and potable / domestic water supply purposes.
Dams not otherwise listed or not meeting the permitted activity standards or controlled activity standards	E7.4.1 (A35)	Discretionary	The proposal includes the damming of approximately 140,000m ³ of groundwater and/or surface water within a storage reservoir with a surface area of approximately 37,000m ²

Chapter E5 – Onsite wastewater treatment and disposal

Discharge of treated domestic-type wastewater and wastewater (excluding trade waste) that does not meet the relevant standards or is not provided for by any other rule in the Plan.	E5.4.1 (A6)	Discretionary	The proposal includes the provision of a combined on-site domestic wastewater treatment plant, and associated discharge to land, at or about NZTM 1729380mE, 5925032mN for the lodge, clubhouse,
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Activity	Rule	Status	Comment
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sports academy and GPMC.

Chapter E8 – Stormwater diversion and discharge

Diversion and discharge of stormwater runoff from additional impervious areas greater than 5,000m ² of road that complies with Standard E8.6.1 and Standard E8.6.4.1	E8.4.1 (A5)	Restricted Discretionary	The total impervious new road areas will be approximately 15,000 m ² .
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Diversion and discharge of stormwater runoff from impervious areas outside an urban area.	E8.4.1 (A10)	Discretionary	The total impervious areas of the proposal are approximately 69,000 m ² . Stormwater will either be harvested from roof areas for potable supply, or managed / treated on site prior to being discharged to land.
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Chapter E4 – Discharges to water or into land and/or into water

Discharge of water and/or contaminants (including washwater) onto or into land and/or into water from any of the following: (a) cleaning, maintenance and preparation of surfaces of buildings,	E4.4.1 (A11)	Controlled	Bridge maintenance activities may include washing activities that may result in discharges of water and/or contaminants onto or into land and/or into water.
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Activity	Rule	Status	Comment
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and associated structures.

Chapter E36 – Natural Hazards and Flooding

Diverting the entry or exit point, piping or reducing the capacity of any part of an overland flow path	E36.4.1 (42)	Restricted Discretionary Activity	Some stormwater management devices within the development involve diverting the entry or exit and/or piping parts of overland flow paths.
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Schedule D: List of Relevant Permitted Activity Regulations and Rules

Regulations for Permitted Activities under the National Environmental Standard for Freshwater

Activity	Regulation	Comment
Ongoing maintenance of wetland utility structures.	Reg 43	Ongoing maintenance of wetland utility structures (bridges and boardwalks) will comply with the specific conditions prescribed in regulation 43(4)

Rules for Permitted Activities under the AUP

Rule	Activity	Comment
Chapter E3 – Lakes, rivers, stream and wetlands		
E3.4.1 (A2)	Activities involving planting and the associated diversion of water - Conservation planting.	The proposed landscape and ecological enhancement planting within the waterbodies, including those within overlays, within the site will be undertaken in a manner which complies with the relevant standards in E3.6.1 in particular, all plantings will be native species and non-invasive species in aquatic conditions.
E3.4.1 (A14)	Activities involving disturbance and associated sediment discharge – Pest plant removal	The proposal landscaping and ecological enhancement works with the site includes the removal of pest plants within watercourses on the site.

Rule	Activity	Comment
		<p>These activities will comply with the relevant standard of E3.6.1.8 in particular, notification will be provided to Council prior to the commencement of works, the works will be undertaken in accordance with an Ecological Enhancement Plan (including pest management processes and methods), and the disturbance associated with the removal will not result in any on-going effects within the waterbodies including erosion, sedimentation or instability.</p>
E3.4.1 (A23)	<p>Works on structures lawfully existing on or before 30 September 2013 and the associated bed disturbance or depositing any substance, diversion of water and incidental temporary damming of water - Replacement, upgrading or extension of existing structures</p>	<p>The proposal includes the upgrading of existing farm culverts.</p>
E3.4.1 (A31)	<p>New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of</p>	<p>The proposal includes the placement of power and water supply lines throughout the site and in some places, these will be required to cross a waterbody. Where this</p>



Rule	Activity	Comment
	<p>water - new cables or lines that cross over a river or stream which do not require support structures in the watercourse</p>	<p>occurs outside of an identified AUP overlay area, the works will comply with the relevant E3.6.1.17 standards including the lines will not alter the bed of the watercourse, will be less than 30 m in length at each span and be raised above the flowing channel outside of the 1% AEP flow level, and are not located within waters which are navigable.</p>
<p>E3.4.1 (A41)</p>	<p>New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of water - Surface water intake structure.</p>	<p>A new surface water intake structure will be constructed adjacent to the Raurataua Stream. While subject to final design, the intake structure location will be outside of the identified AUP overlay areas and will comply with the relevant standards of E3.6.1 including the works not resulting in more than minor instability or erosion of the bed or bank, will not affect the flood levels within the stream, will not affect access along the stream, disturbance of the bed and bank will be minimised, the intake will be screened to avoid capturing fish, the structure will not affect fish passage within the stream and will not</p>

Rule	Activity	Comment
		impact public access along the stream.
E3.4.1 (A43)	New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of water - Flow monitoring devices.	Non-invasive flow monitoring equipment will be installed to sit over the bed of the Raurataua Stream near the point of stream take to measure stream water levels used to calculate continuous stream flow information required for the proposed high flow take regime. This device may result in temporary and incidental bed disturbances. The activity does not result in any permanent structure within the stream bed.
E3.4.1 (A53)	Activities in ephemeral streams - Any activity that is undertaken in, on, over or within the bed of an ephemeral river and streams.	As described elsewhere, the proposal includes the construction of tracks and supporting structures throughout the site both within and outside of the identified AUP overlay areas. Where these activities are undertaken in ephemeral streams, they will comply with the relevant standards of E3.6.1 including the works not resulting in more than minor instability or erosion of the bed or bank, will not affect the flood levels within the stream, will not

Rule	Activity	Comment
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affect access along the stream, disturbance of the bed and bank will be minimised and there will be no ongoing effects following the completion of construction.

Chapter E4 – Other discharges of contaminants

E4.4.1 (A1)	Discharge of water and/or contaminants (including washwater) onto or into land and/or into water from various constructions activities including concrete and asphalt laying, drilling, washing vehicles and machinery and road construction.	Noting that the discharges from the large scale earthworks and construction activities are provided for as a consented activity, the proposal will also include numerous minor discharge activities which will comply with the relevant permitted activity standards in E4.6.1 including; the discharges will not alter any receiving environments, they will not cause erosion or scour, and the discharge will be undertaken in accordance with best management practice.
E4.4.1 (A2)	Discharge of water onto or into land and/or into water from testing pipeline, tanks or bunds; swimming pools; bore developments, testing or purging; and temporary or permanent discharge of diverted	As stated previously, the proposal will also include numerous minor discharge activities which will comply with the relevant permitted activity standards in E4.6.1 and the additional specific standards in E4.6.2 including; the

Rule	Activity	Comment
	<p>uncontaminated groundwater</p>	<p>discharges will meet the relevant discharge limits where applicable.</p>
<p>E4.4.1 (A3)</p>	<p>Discharge of swimming pool filter backwash onto or into land and/or into water in a manner that does not result in runoff into surface water</p>	<p>The lodge design includes the provision for swimming and ornamental pools. The discharges from the pool filters will be to land as there is no reticulated network available. These discharges will comply with the relevant standard in E4.6.1 and E4.6.2 including the discharges not entering surface water and not resulting in erosion or scour.</p>
<p>E4.4.1 (A5)</p>	<p>Discharge onto or into land and/or into water for the purpose of dewatering trenches or other excavations.</p>	<p>Where groundwater is encountered during excavations, these areas may need to be dewatered and discharged to land in a manner which will comply with the relevant standard in E4.6.1 and E4.6.2 including the discharges will not alter any receiving environments, they will not cause erosion or scour, and the discharge will be undertaken in accordance with best management practice.</p>

Chapter E5 – Onsite wastewater treatment and disposal



Rule	Activity	Comment
E5.4.1 (A6)	Discharge of treated domestic type wastewater onto or into land via one or up to three land application disposal systems within a site, in circumstances where the systems cannot be reasonably combined.	<p>The proposal includes the provision of two on-site domestic wastewater treatment systems, and associated discharges to land, for the two on-course toilet facilities.</p> <p>The discharges will not exceed 2m³ per day and will comply with all relevant E5.6 standards.</p>

Chapter E7 – Taking, using, damming and diversion of water and drilling

E7.4.1 (A3)	Take and use water from a lawfully established off-stream dam.	The proposal includes provision of irrigation and potable supply water from an existing reservoir on the wider site. The water takes to fill the reservoir are consented activities.
E7.4.1 (A17)	Take and use of groundwater - Dewatering or groundwater level control associated with a groundwater diversion permitted under the Unitary Plan.	Where excavation encounter groundwater these areas may need to be dewatered in a manner which will comply with the relevant standard in E7.6.1 and E7.6.1.6 including the dewatering will only occur during construction and it will not occur at each excavation location for more than 30 days.
E7.4.1 (A27)	Diversion of groundwater - Diversion of groundwater caused by any excavation (including trench) or tunnel	Where excavation encounter groundwater these areas may need to be dewatered and some diversion may occur. Any such diversion will occur



Rule	Activity	Comment
		<p>in a manner which will comply with the relevant standards in E7.6.1 and E7.6.1.10 including the extent of excavations below the natural groundwater level will not be greater than 1 ha and are not expected to be more than 6m below the natural ground level.</p> <p>It is noted that diversion of groundwater associated pipes, cables and tunnels up to 1.2 m in diameter which are drilled or thrust, and piles up to 1.5m in diameter, are exempt from complying with the E7.6.1.10(2)-(6) standards.</p>
E7.4.1 (A36) and (A38)	Drilling and use of holes and bores - Holes or bores for geotechnical investigation; and bores for groundwater monitoring	<p>As part of the detailed design phase, additional geotechnical bores may be constructed to inform the final design. Additionally, further monitoring and investigation bores may be constructed to provide further detail on the groundwater resource. Where these activities are required they will occur in a manner which will comply with the relevant standards in E7.6.1.16 and E7.6.1.17 including avoidance of locating holes in the Wetland</p>

Rule	Activity	Comment
		Management Area Overlay, any groundwater taken would only be for sampling purposes, and works will be undertaken in accordance with the comply with section 1 and 2 of New Zealand Standard on the Environmental Standard for Drilling of Soil and Rock (NZS 4411:2001).

Chapter E11 – Land disturbance – Regional

E11.4.2 (A14)	Ancillary activities to erosion and sediment control - The temporary diversion and damming of surface water and the discharge of treated sediment laden water from any land disturbance allowed by a land use consent	The earthworks will result in the discharge of sediment laden water from the erosion and sediment control devices throughout the site. These discharges will occur in a manner which will comply with the relevant standards in E11.6.2 including the discharges not altering any receiving waters after reasonable mixing, the controls will be designed in accordance with GD05, and the earthworks footprint will be minimised to the extent possible across the site.
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Chapter E14 – Air quality

E14.4.1 (A1)	Discharge of contaminants into air	The bulk earthworks have the potential to
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Rule	Activity	Comment
	<p>from activities not provided for in other rules in this table - Activities meeting the permitted activity standards and not provided for by any other rule</p>	<p>cause the discharge of dust. These dust generating activities be primarily managed through the proposed CEMP and associated Dust Management Plan and will occur in a manner consistent with the relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the property and the discharge will not result in visible, offensive or objectionable emissions.</p> <p>In addition, the ongoing operation and management of the golf course will require the application of fertiliser and other turf maintenance and management products. The storage and application of these is managed by the greens keeping staff and will be applied in accordance with the relevant he relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the property and the discharge will not result in visible, offensive or</p>



Rule	Activity	Comment
		objectionable emissions. There will also be no spray drift to neighbouring properties.
E14.4.1 (A48)	Discharge of contaminants into air from combustion activities - Emergency generators used for the purpose of generating electricity for premises during mains power unavailability (includes operation for the purpose of generator testing and maintenance)	Once operational, the site will include provision for emergency generators to provide power during shortages. The operation of these will occur in a manner consistent with the relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the property and the discharge will not result in visible, offensive or objectionable emissions.

Chapter E15 – Vegetation management and biodiversity

E15.4.1 (A2) & (A6)	Dead wood and pest plant removal outside of riparian and coastal areas	It is proposed that some dead wood and pest plant removal will occur outside of the AUP identified overlays and riparian zones. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the disposal of all removed material in an appropriate disposal location.
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Rule	Activity	Comment
E15.4.1 (A7)	Conservation planting outside of riparian and coastal areas	The proposal includes conservation / enhancement planting across the site, some of which will occur outside of the AUP identified overlays and riparian zones. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the purpose of the planting being for ecological and landscape enhancement purposes.
E15.4.1 (A8)	Vegetation alteration or removal for routine maintenance within 3m of existing buildings	All maintenance related tree trimming will comply with standard E.15.6.9
E15.4.1 (A9)	Vegetation alteration or removal for routine operation, maintenance and repair of existing tracks, lawns, gardens, fences, shelterbelts and other lawfully established activities	All maintenance related tree trimming will comply with standard E.15.6.9
E15.4.2 (A32) & (A36)	Dead wood and pest plant removal within an identified AUP overlay	As part of beautifying the site, dead wood and pest plant removal may occur within the AUP identified overlays (SEA-T and ONF) and riparian zones within the site. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the



Rule	Activity	Comment
		disposal of all removed material in an appropriate disposal location.
E15.4.2 (A37)	Conservation planting within an identified AUP overlay	The proposal includes conservation / enhancement planting across the site, some of which will occur within the AUP identified overlays (SEA-T and ONF) and riparian zones within the site. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the purpose of the planting being for ecological and landscape enhancement purposes.
E15.4.2 (A41)	Tree trimming in an SEA-T	Tree trimming will comply with standard E.15.6.9

Chapter E24 – Lighting

E24.4.1 (A1)	Lighting activities that comply with all the relevant permitted activity standards	Throughout the site lighting will be provided in many different forms all of which are design to meet the requirements of the service they support. All lighting for the site will be designed to be consistent with the relevant standards in E24.6.1 including meeting the pre-curfew and curfew illuminance and luminous intensity limits,
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Rule	Activity	Comment
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placement of exterior lighting will be done so to ensure glare does not exceed the pre-curfew or curfew limits, and lighting limits will be measured and assessed in accordance with Standard AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting.

Chapter E25 – Noise and vibration

E25.4.1 (A1)	Noise and vibration activities that comply with all the relevant permitted activity standards	Construction activities – construction activities will result in the generation of noise and vibration for the duration of the works period. These activities will be undertaken in a manner consistent with the relevant standards in E25.6.1 including the not exceeding the defined construction noise and vibration limits in E25.6.27 and E25.6.30, and the noise from any construction work activity must be measured and assessed in accordance with the requirements of New Zealand Standard NZS6803:1999 Acoustics – Construction noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.
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Rule	Activity	Comment
		<p>Operational activities – Once open, the golf course and associated lodge and performance centre will generate a low level of noise and all activities onsite will be undertaken in a manner consistent with the relevant standards in E25.6.1 including complying with the maximum noise limits in rural zones set out in Table E25.6.3.1.</p>
		<p>Helicopter noise – The development will provide for a helipad for helicopters to access the site with a collection of helipads provided for close to the main entrance on Muriwai Road. Marshall Day concluded that the helicopters servicing the site will comply with standard E25.6.32 being that the take-off or landing of a helicopter on any site except for emergency services must not exceed Ldn 50 dB or 85 dB LAF max measured within the boundary or the notional boundary of any adjacent site containing activities sensitive to noise and Ldn 60 dBA within the boundary of any other site.</p>

Rule	Activity	Comment
Chapter E26 – Infrastructure		
E26.4.1 (A3)	Network utilities and electricity generation – Service connections.	The proposal will require the construction and operation of new service connections in the form of connections to power and telecommunications services. The connections will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A4)	Network utilities and electricity generation – Minor utility structures.	The proposal will require the construction and operation of new minor utility structures across the site to provide for the conveyance of power, water and telecommunications services. The provision of these structures will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A9)	Network utilities and electricity generation –	The proposal will require the construction and



Rule	Activity	Comment
	Pipe and cable bridges for the conveyance of water, wastewater, stormwater, electricity, gas and telecommunications.	operation of new conveyance systems for water, wastewater, electricity and telecommunications. The connections will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A10)	Network utilities and electricity generation – Air quality and meteorological monitoring structures and devices	The operational golf course will include up to 2 meteorological monitoring stations to provide live weather information for users and the grounds staff. These stations constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A13)	Network utilities and electricity generation – Diesel or petrol electricity generators used for the emergency backup of any activities in Table E26.2.3.1 Activity Table	The proposal includes the provision of emergency diesel / petrol generator located across the site. These generators will be located and operated in a manner consistent with

Rule	Activity	Comment
		the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² .
E26.4.1 (A22)	Electricity transmission and distribution – Underground electricity lines	There will be some underground electricity lines provided across the site. These lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A25)	Electricity transmission and distribution – Overhead electricity lines up to and including 110kV	There may be some additional overhead electricity lines provided across the site. If so, these lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including provision that the lines emit electric and magnetic field emissions which comply with the International Commission on Non-ionising Radiation Protection Guidelines for limiting exposure to time varying electric and magnetic

Rule	Activity	Comment
		<p>fields (1Hz – 100kHz) (Health Physics, 2010, 99(6); 818-836) and recommendations from the World Health Organisation monograph Environmental Health Criteria (No 238, June 2007), and that the maximum height for support structures for electricity lines is no greater than 25 m.</p>
E26.4.1 (A38)	Telecommunications – Telecommunications shelters and cabinets	<p>The proposal is likely to include the provision of telecommunication shelters and/or cabinets connecting the site to the telecommunications network. These shelters and cabinets will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m² and 3 m.</p>
E26.4.1 (A40)	Telecommunications – Underground telecommunications lines and facilities	<p>The proposal will include underground telecommunications lines and facilities. These lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the</p>



Rule	Activity	Comment
		<p>maximum aboveground building area and height for structures are not greater than 30 m² and 2.5 m.</p>
E26.4.1 (A41)	Telecommunications – Overhead telecommunications lines	<p>The proposal may include overhead telecommunications lines. If so, these lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including ensuring the maximum height for support structures for telecommunication lines is no greater than 25 m.</p>
E26.4.1 (A49)	Water, wastewater and stormwater structures - Underground pipelines and ancillary structures for the conveyance of water, wastewater and stormwater (including above ground ancillary structures associated with underground pipelines)	<p>The proposal includes a purpose built three waters infrastructure conveyance system across the site. The underground pipework and ancillary structures associated with this conveyance system will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including any aboveground section of underground pipelines for the conveyance will not exceed a 25 m continuous length of pipe in any one section; and</p>

Rule	Activity	Comment
		be greater than 300 mm in diameter.
E26.4.1 (A58)	Water, wastewater and stormwater structures - Stormwater treatment devices; erosion protection; culverts; measuring devices (flows structures)	Stormwater treatment devices and erosion protection structures will form part of the final detailed design of the wider development. Where these structures are provided for, they will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.

Chapter E27 – Transport

E27.4.1 (A1)	Parking, loading and access which is an accessory activity	<p>The proposal provides for extensive parking, loading and access across the site, all of which have been designed to meet the relevant standards of E27.6 including:</p> <p>Parking – The proposal provides for the following parking spaces (T51, 74, 75 79) and all parking has been designed to comply with the size and location of spaces in E27.6.3.1</p>
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Rule	Activity	Comment
		<p>Bicycle parking – T103</p> <p>Loading – There is no minimum requirements (T116) for provision of loading zones within the rural zone however the site provides adequate loading areas at all main buildings. All loading spaces have been designed to comply with the size and location of spaces in E27.6.3.2</p> <p>Access – All access points on site have been designed to comply with the relevant standards in E27.6.4</p> <p>Additionally, the peak vehicle generation for the site once operational is below the 100 vph threshold in standard E27.6.1.</p>

Chapter E30 – Contaminated Land

E30.4.1 (A4)	Discharges of contaminants into air, or into water, or onto or into land from land not used for rural production activities	The proposal includes some land disturbance activities on HAIL sites located with the development footprint. These works will be undertaken in a manner consistent with the relevant standards in E30.6.1.4 including the contaminant concentrates in the in-situ soil does not exceed the criteria in Table
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Rule	Activity	Comment
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E30.6.1.4.1 soil contamination or the relevant guidelines if not in the table and any discharges from land containing elevated levels of contaminants will not contain separate phase liquid contaminants.

Chapter E31 – Hazardous Substances

E31.4.3 (A58)	Hazardous facilities that store or use the listed hazardous substances – Flammable Liquids Class 3, Sub-class 3.1A	Up to 1,000 L of petrol will be stored on site at any one time. The storage area for the fuel will be designed and managed in accordance with the relevant standards in E31.6 including the siting of the storage area will be a way from sensitive uses and watercourses, fuels will be stored and used in a way to prevent unintended spills, a spill management plan and spill kits will be provided, storage areas will be bunded with impervious materials and the drainage system within the storage areas will be formed to contain the full volume of substances stored and enabling spills to be pumped out.
E31.4.3 (A60)	Hazardous facilities that store or use the listed	Up to 3,000 L of diesel will be stored on site at

Rule	Activity	Comment
	hazardous substances – Flammable Liquids Class 3, Sub-class 3.1D	any one time. The storage area for the fuel will be designed and managed in accordance with the relevant standards in E31.6 including the siting of the storage area will be a way from sensitive uses and watercourses, fuels will be stored and used in a way to prevent unintended spills, a spill management plan and spill kits will be provided, storage areas will be bunded with impervious materials and the drainage system within the storage areas will be formed to contain the full volume of substances stored and enabling spills to be pumped out.

Chapter E34 – Agrichemicals and vertebrate toxic agents

E34.4.1	The discharge from non-domestic applications of agrichemicals onto or into land and the discharge of chemicals and pre-feed agents for the purpose of killing vertebrate pests.	All chemicals used for the management of turf and vegetation health, and all toxic chemicals used to control vertebrate pests will be applied in accordance with best practices and manufacturer recommendations
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Chapter E36 – Natural Hazards and Flooding



Rule	Activity	Comment
E36.4.1 (43)	Buildings and structures on land which may be subject to land instability	Parts of some buildings associated with the lodge will be in locations relatively close to the steep escarpment to the east of Lake Ōkaihau. Special design requirements will be needed to address associated land stability risks. These are detailed in Appendix 4 (Geotechnical appraisals). These buildings will be constructed in accordance with permitted standards contained in E36.6.1.11.

Chapter H19 – Rural Zones

H19.8.1 (A15)	Use and development – Conservation planting	As previously detailed, conservation and enhancement planting will be undertaken as part of the proposal. These activities within a rural zone are permitted and do not have any specific standards that need to be complied with.
H19.8.1 (A58)	Development – Demolition of buildings	There are some existing buildings on site that may be demolished and / or removed as part of the Project. These activities within a rural zone are permitted and do not have any specific



Rule	Activity	Comment
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standards that need to be complied with.

Schedule E: The Location - Muriwai Downs Property





PART B

Assessment of Environmental Effects

1. INTRODUCTION

Bears Home Project Management Limited (the “**Applicant**”) is applying for all of the resource consents necessary to authorise the construction, operation and maintenance of a golf course, sports academy and luxury accommodation complex (the “**Project**”) on the Muriwai Downs Property located roughly 17 km southwest of Kumeu and approximately 3 km northeast of Muriwai Beach Township (Figure 1).

The Project comprises the following main physical components:

- An international, marquee standard 19-hole golf course with warm-up fairway and short-game practice area;
- A clubhouse;
- A sports academy including; an academy building, office space, academy driving range, practice green, 9-hole short course, and indoor and outdoor tennis facilities;
- A golf and property maintenance complex (“**GPMC**”);
- A luxury lodge which includes accommodation, a wellness centre and retreat;
- Dining facilities including clubhouse and lodge restaurants and a café at the sports academy;
- Groundwater and surface water abstraction facilities;
- An off-stream water storage reservoir;
- Significant ecological restoration and enhancement works; and
- Various supporting infrastructure associated with the above.

This Assessment of Environmental Effects (“**AEE**”) has been prepared to support the various resource consents being sought for the Project summarised above. A more detailed description of the Project, and its various physical and operational components, is provided in Section 3 of this AEE.



Figure 1: Location of the Muriwai Downs Property

1.1. PROJECT VISION

The Applicant’s overall vision is to deliver a “Marquee Golf Course”¹ and luxury lodge accommodation, in a high-quality environmental setting, that the local community, mana whenua and other New Zealanders will be proud of. This vision is focused on catering for a growing level of international and domestic demand for golf-related tourism in Auckland and New Zealand once pandemic related travel restrictions are relaxed.

To achieve this vision, all elements of the Project will be designed, constructed and operated, to meet exceptionally high-quality standards, and offer superior golf, tourism, accommodation and training experiences in the Auckland area that will sit alongside the existing inventory of premium golf courses of international standing across the country.

Currently, the Muriwai Downs Property is dominated by farmed pasture, however, it also includes SEA areas, other areas of indigenous vegetation, wetlands and ONF’s. These natural resources and features are of variable quality. Their restoration and enhancement are a fundamental part of the Applicant’s vision for the Property, and is integral to delivering a golf course with Marquee status. The proposed restoration and enhancement will also result in

¹ Marquee Golf Course is a term defined in the New Zealand International Golf Tourism Strategy. A marquee course is one of high quality, is aspirational with inherent international interest, has history and/or a particular identity and is accessible for visitor play.

significant net environmental gains for both the Property and the wider area, provide opportunities for mana whenua to be directly involved in restoring the whenua, enable opportunities to educate patrons about the Site’s natural, historical and cultural features, and enhance the golf and accommodation experiences to be offered.

The Project vision also seeks to provide the New Zealand golf fraternity, and the wider community, with a sports academy that incorporates state-of-the-art training and playing facilities to support and promote the game of golf and tennis at all levels.

Finally, the Project will also provide additional local accommodation, restaurant and café options for tourists and locals alike. In doing so, this not only provides additional facilities for those visiting the area to eat and stay in Muriwai, but will also increase and enhance social connection opportunities for locals.

1.2. BRINGING THE VISION TO FRUITION

To bring this Project vision to fruition, the Applicant has engaged a wide range of specialist advisors to inform the design, construction and operation of all Project elements.

As will be discussed in more detail later within this AEE, the Applicant has used a wide range of talented and highly experienced technical experts to design the Project. Through ongoing design refinement iterations and consultation with mana whenua, this group of specialists have developed a highly considered design for this Project that:

- is sympathetic to the existing landforms;
- is sensitive to local natural resources;
- capitalises on opportunities for ecological restoration;
- remains respectful to the Property's cultural and historical context;
- appropriately recognises and retains the rural character of the area;
- ensures “Marquee” status will be achieved for the proposed golf course;
- promotes the benefits of golf and sport and recreation more generally;
- supports the Auckland Region in satisfying and prospering from a predicted increase in future golf tourism market demand; and
- guarantees an experience to be remembered by all visitors.

1.3. PROJECT CONTEXT

1.3.1. Golf Context ²

² Information presented in this section is drawn from the report titled “Golf in New Zealand and Associated Benefits” within the Economics Report (Appendix 17)

National Golf Scene

Golf is officially the highest participation sport in the country with over 500,000 New Zealanders playing the sport. It directly and indirectly employs people in a range of golf and non-golf related activities including tourism, construction, retail, coaching, maintenance and food and beverage.

Prior to Covid-19, golfers were the highest spending segment of international visitors to New Zealand, showing a high likelihood to engage in premium activities, accommodation, food, and wine. On average, golfers spent 23% more than traditional holiday visitors, making them premium tourism customers.

In 2013, New Zealand valued its tourism golf product at \$145 million annually. Opportunities highlighted by this data compelled the then Prime Minister and Minister of Tourism, John Key, to engage a special working group to further expose New Zealand as a world-class golf destination. The Government of the day later implemented the 'New Zealand International Golf Tourism Strategy' - based on a trail of the country's most significant golf assets, or "Marquee Courses" starting with Kauri Cliffs in Northland and running through Auckland, Taupo, Hawke's Bay, Wellington, Christchurch and Queenstown.

In implementing this strategy, the Minister of Tourism set a goal of achieving \$223 million in annual revenues from golf tourism by the end of 2016. By mid-2016, annual revenues had exceeded \$300 million, and by the end of 2018 had exceeded \$400 million.

Auckland Golf Scene

There are approximately 35 affiliated golf courses in the Auckland region. Data from 2019 shows there were over 24,000 members across these courses, playing over 1,000,000 rounds of golf annually. The quantity of adult golf club members in Auckland is larger than the region's memberships of rugby, netball, and football combined.

A recent report titled 'The Impact of Golf in Auckland' (part of the 'Golf Sector Plan for Auckland'), shows 749 full time equivalent ("FTE") jobs in Auckland are directly attributed to golf.

The first golf course built to cater to an international visitor within Auckland's boundaries was the Gulf Harbour Country Club, which opened in 1997. Since then, three other Marquee Courses have been developed in the region, namely Titirangi, Wainui and Windross Farm. Despite these additional golf assets, Auckland still struggled to meet the pre-pandemic needs of international golf visitors and is still well overshadowed by Queenstown and other New Zealand regions. Advisors to Golf New Zealand and the Ministry of Tourism strongly advocate that higher quality golf courses are required in Auckland if the region is to remain competitive in this opportunity.

Golf's Future

The NZ International Golf Tourism Strategy³ continues to encourage the public and private sectors to invest in new and existing golf facilities to enhance New Zealand's tourism golf trail. This strategy is also supported by a national tourism policy aimed at reinvigorating this industry in a post-covid environment. Tourism Minister Stuart Nash, while commenting on the nation's future tourism prospects, is quoted in the Otago Daily Times⁴ as saying:

"the New Zealand tourism sector should target high-spending tourists in the future"

Additionally, he is quoted by Stuff⁵ as saying:

"With this new premium strategy, there is more emphasis on attracting higher spending visitors rather than simply encouraging higher visitor numbers to New Zealand."

1.3.2. Local Accommodation Context

Current accommodation options available in and around Muriwai Beach are effectively limited to cottages, houses and farm stays. The closest multiple-room commercial accommodation is in Waitakere, 17 kilometers away, while the nearest premium accommodation is in Auckland's CBD. The lack of accommodation means that events, weddings, and activities taking place near Muriwai have few local accommodation options available to them.

The international market has always recognised New Zealand's lodge product as world-leading, and many itineraries are created for international visitors centered around luxury lodge stays. However, according to Luxury Lodges of New Zealand, Auckland currently lacks a luxury lodge, meaning Aucklanders or visitors basing themselves in Auckland, must make a fairly significant journey for even a quick luxury lodge getaway.

1.4. LAND OWNERSHIP

The Muriwai Downs Property – which is comprised of all land allotments referenced 1 through 7 in Figure 2 (collectively referred to hereafter as the **"Muriwai Downs Property" or "the Property"**) – is owned by The Bears Home Company Limited, which is the parent company of the Applicant. Key information pertaining to individual land lots making up the Muriwai Downs Property is set out in Table 1.

³ <https://www.tourismnewzealand.com/media/1958/nz-international-golf-strategy.pdf>

⁴ <https://www.odt.co.nz/business/message-tourism-sector-target-rich-tourists>

⁵ <https://www.rnz.co.nz/news/political/438702/tourism-minister-stuart-nash-outlines-vision-for-future-of-the-industry>

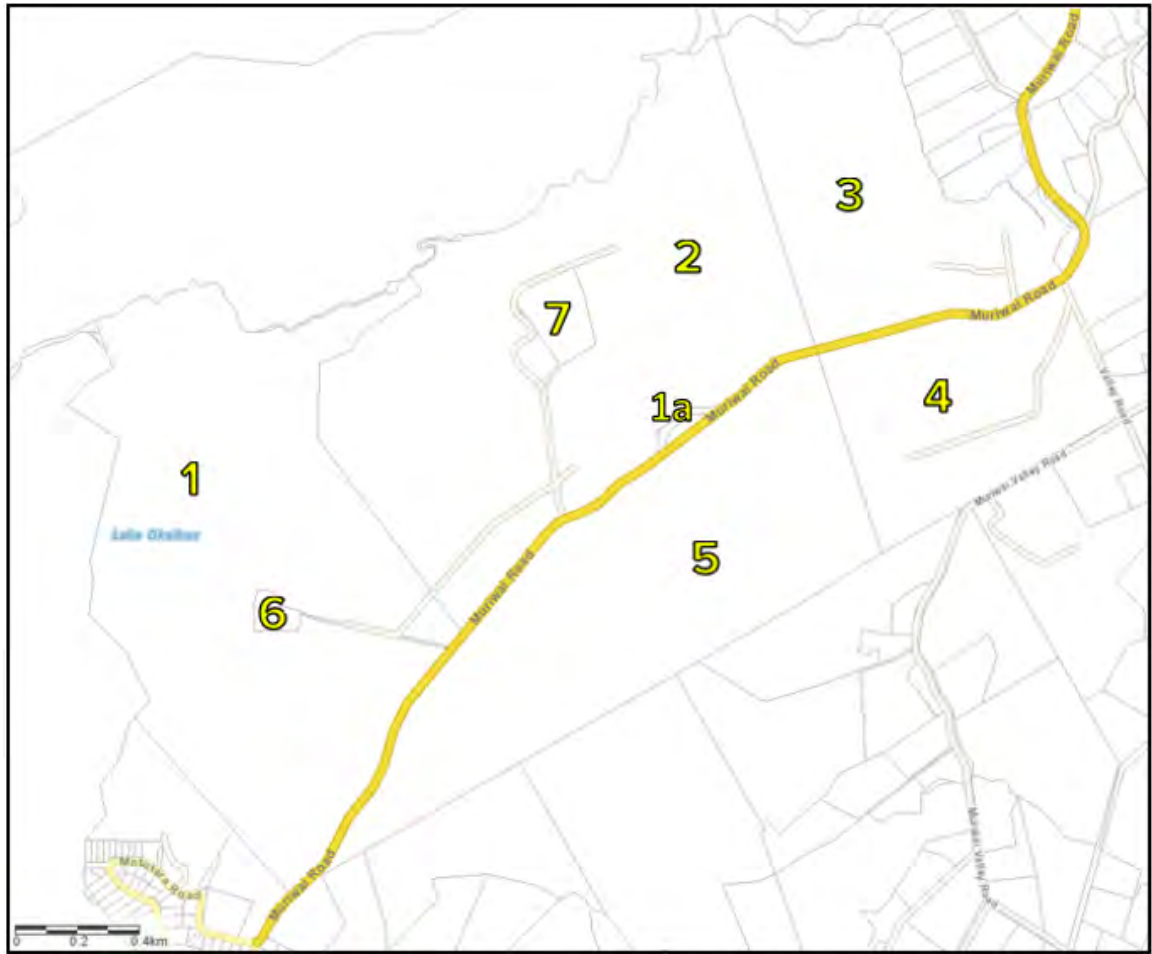


Figure 2: Map of Applicant's Landholdings – The Muriwai Downs Property. Allotment numbering refers to Table 1.

Table 1: Land Information Summary

Reference	Owner	Record of Title Number	Legal Description	Address	Site Area (hectares)
1	The Applicant	NA117B/168	Lot 1 DP 187057	670 Muriwai Rd	144
1a		NA134D/135	Lot 1 DP 191137 and Section 1 SO Plan 69201		1.2
2	The Applicant	NA125C/442	Lot 2 DP 196478	610 Muriwai Rd	141
3	The Applicant		Lot 3 DP 196479, Sec 3 SO 41485	451 Muriwai Rd	64

Reference	Owner	Record of Title Number	Legal Description	Address	Site Area (hectares)
4	The Applicant	NA117B/171, NA125C/443	Lot 4 DP 187060, Sec 3 SO 41485	451 Muriwai Rd	48
5	The Applicant	NA117B/172	Lot 5 DP 187061	697 Muriwai Rd	101
6	The Applicant	NA980D	Lot 1 DP 163736	680 Muriwai Rd	1.9
7	The Applicant	NA125C/441	Lot 1 DP 196478	614 Muriwai Rd	5.5

Records of title for all allotments comprising the Property are provided in Appendix 1 of this AEE.

Land adjacent to the Property's northern, eastern, and southern boundaries, and two parcels abutting the south-western corner, are held in private ownership across a number of parties. Land bordering the north-western boundary is cultural redress forestry land now owned by Ngāti Whātua o Kaipara.

1.5. APPROACH TO APPLICATION AND CONSENTS SOUGHT

Because certain elements of the Project are at a preliminary design stage, a certain amount of flexibility is sought within any consents granted to provide for minor design changes that may be needed following more detailed Site investigations and the developed and final design stages. In this respect, the Applicant is adopting a "maximum envelope" approach for some aspects of the proposal, while providing opportunities to reduce any adverse effects on significant indigenous biodiversity and ecological values. It follows that, the various technical experts engaged to assess the impacts of the Project have done so on the basis of the maximum envelope.

1.6. AEE SCOPE AND STRUCTURE

This AEE forms Part B of the resource consent application documentation, with Part A comprising the resource consent applications and various supporting technical reports.

This AEE document has been prepared in accordance with section 88 and the Fourth Schedule of the Resource Management Act 1991 ("**RMA**"). It is structured as follows:

- Section 1:** Comprises this introduction.
- Section 2** Provides a description of the existing environment within and surrounding the Muriwai Downs Property.
- Section 3:** Sets out some of the key processes undertaken to develop the Project and then describes the Project and associated activities.
- Section 4:** Identifies the RMA status of individual activities associated with the proposal and confirms the Project’s overall activity status.
- Section 5:** Provides an assessment of the effects on the environment associated with the proposal.
- Section 6:** Provides the statutory planning analysis.
- Section 7:** Outlines the consultation undertaken by the Applicant; and
- Section 8:** Sets out the key conclusions.

1.7. TECHNICAL STUDIES UNDERTAKEN

A number of technical reports have been prepared as part of the Project’s design and effects assessment. Additionally, a number of other documents have been prepared to support this application. These are summarised in Tables 2 and 3 respectively.

Table 2: Technical Report List

AEE Appendix	Technical Report Titles
2	A “ Golf Course Design Statement ” and Site layout plan prepared by Kyle Philips Golf Course Designers Ltd
3	A “ Golf Course Construction, Operation and Maintenance Report ” jointly prepared by the New Zealand Sports Turf Institute and Steve Marsden Turf Services Limited
4	Geotechnical Reports Including: <ul style="list-style-type: none"> ➤ A “Geotechnical Site Appraisal Report” prepared by Lander Geotech; ➤ A “Geotechnical Investigation Report for Buildings” prepared by Lander Geotech; and ➤ A “Geotechnical Investigation Report for the Proposed Reservoir” prepared by Riley Consultants Limited
5	An “ Engineering Infrastructure Report ” prepared by McKenzie and Co including civil design drawings for roading, stormwater drainage and treatment, culverts, water take, storage and supply and wastewater.

AEE Appendix	Technical Report Titles
6	A detailed site investigation (“ DSI Report ”) and accompanying preliminary site investigation (“ PSI Report ”) and sampling analysis of potentially contaminated soils prepared by Pattle Delamore and Partners
7	Two “ Water Supply and Storage Options Reports ” prepared by Pattle Delamore and Partners
8	A “ Soils Report ” prepared by the New Zealand Sports Turf Institute
9	A “ Farm Operations Report ” prepared by DnA Lands Limited
10	<p>A “Water Effects Summary Report” prepared by Williamson Water and Land Advisory including the following appended reports:</p> <ul style="list-style-type: none"> ➤ Baseline Environmental Monitoring Report; ➤ Surface Water Effects Assessment; ➤ Site Water Balance and Water Strategy Report; ➤ Basalt Extent of Electrical Resistivity Tomography Survey Report; ➤ Assessment of Proposed Groundwater Supply and Associated Hydrological Effects; and ➤ Lake Ōkaihau Water Balance Assessment.
11	An “ Ecology Report ” prepared by RMA Ecology including proposed restoration concept plans and a “ Wetland Restoration Plan ”
12	An “ Arboriculture Report ” prepared by Peers Brown Miller including a “ Tree Management Plan ” and Draft Kauri dieback management protocols and guidelines.
13	An “ Landscape Effects Report ” on landscape, visual and amenity matters prepared by Boffa Miskell including Landscape Concept and Planting Guidelines.
14	An “ Archaeology Report ” assessing effects on heritage and archaeological Sites and values prepared by CFG Heritage
15	A “ Noise Report ” assessing noise related effects prepared by Marshall Day Acoustics
16	An integrated traffic assessment (“ ITA ”) prepared by Commute
17	An “ Economic Benefits Report ” prepared by Insight Economics including an appended report on Golf in New Zealand and Associated Benefits.

Table 3: List of Other Supporting Documents

AEE Appendix	Document Titles
18	<p>A Draft Construction Environmental Management Plan (“CEMP”) prepared by McKenzie and Co including:</p> <ul style="list-style-type: none"> ➤ Methodology statements and preliminary plans for earthworks, vegetation clearance, cut and fill and erosion and sediment control; ➤ Draft Kauri dieback site plans; and ➤ A Draft Dust Management Plan (“DMP”);
19	<p>Architectural design statement and preliminary building plans and elevation drawings from Johnstone Callaghan Architects for the clubhouse, sports academy and Tennis buildings</p>
20	<p>Architectural design statement and preliminary building plans and elevation drawings from Mason & Wales / Jack McKinney architects for the Lodge</p>
21	<p>A Cultural Impact Assessment (“CIA”) prepared by Te Kawerau ā Maki</p>

2. EXISTING ENVIRONMENT

The existing environment is described in detail within relevant supporting technical reports appended to the AEE. Key aspects are summarised below.

2.1 Introduction

The Muriwai Downs Property is a large pastoral farming Property located approximately 3 kilometres east of Muriwai Beach.

Figure 3 shows the Muriwai Downs Property from an elevated and oblique viewpoint looking westward towards Muriwai Beach. Locations of notable physical features within and near the Property are also identified.



Figure 3: Oblique elevated view of Muriwai Downs Property (looking west) showing key features.

The Muriwai Downs Property is generally bounded to the east by the Raurataua Stream and Valley Road and to the north by the Raurataua and Ōkiritoto Streams. It is also split over much of its length by Muriwai Road which runs in an east-west orientation through the Property towards Muriwai Beach settlement.

Details on the individual land allotments that make up the Property were previously presented in Section 1 of this AEE.

2.2 CULTURAL SETTING

2.2.1 Mana Whenua

The Muriwai Downs Property is within the Tāmaki Makaurau (Auckland) region - a region where Mana Whenua⁶ interests are represented by 19 iwi (tribal) authorities. The more localised land area containing the Property is within specific areas of interest for several different iwi authorities. According to Te Puni Kōkiri's webSite, this includes:

- Ngāti Whātua
- Ngāti Whātua o Kaipara
- Ngāti Whātua o ōrākei
- Te Kawerau ā Maki
- Ngāti Tamaoho
- Te ākitai Waiohū
- Ngāti Te Ata

While respecting these overlapping areas of interest, and acknowledging other iwi authority views may differ, through the guidance and advice of various local kaumātua, kuia and other advisors, Mana Whenua consultation has been undertaken with Te Kawerau ā Maki and Ngāti Whātua o Kaipara.

The Applicant acknowledges that the cultural landscape of the Muriwai Downs Property includes elements such as history, culture, traditions, tikanga, place names, artefacts, archaeological features, wāhi tapu, natural features, resources with cultural value, and historic places that all tie Mana Whenua to the place and create a web of cultural reference points within their rohe (tribal area). The Applicant's general understanding, which is primarily informed by Te Kawerau ā Maki's Cultural Impact Assessment ("CIA"), is summarised below for context and acknowledgement purposes.

2.2.2 Cultural Sites and Resources

As set out in CIA prepared on behalf of Te Kawerau ā Maki, the Muriwai Downs Property is significant due to its place within the landscape, and because of its various natural features - some of which are unique and special to Mana Whenua. Figure 4 is a map from Te Kawerau ā Maki's CIA showing cultural Sites (coloured red) and biodiversity areas (coloured blue) within and surrounding the Property that hold particular significance.

⁶ In the consenting context, Mana Whenua means the indigenous people (Māori) who have historic and territorial rights over the land. In this application, it refers to iwi and hapū (Māori tribal groups) who have these rights in Tāmaki Makaurau, Auckland.

Details relating to each significant Site and resource are provided in Table 2 of Te Kawerau ā Maki’s CIA. A summary of those located in close proximity to the Muriwai Downs Property are provided in Table 4 below.



Figure 4: Map depicting cultural Sites (red), biodiversity areas (blue), and statutory acknowledgement areas (pink) significant to Te Kawerau ā Maki (source: Te Kawerau ā Maki CIA)

Table 4: Summary of Cultural Sites and resources close to the Project area

Site or Resource	Location	Description
Waimanu (Muriwai/Ōkiritoto) Awa	Within and adjacent to the Property	The awa at the base of the Muriwai valley that sustained countless generations of Te Kawerau ā Maki and their ancient Ngāoho tūpuna with fresh water and kai. There are no fewer than five kāinga that follow its 3.5km length.
Muriwai Wetland	Within and adjacent to the Property	The large swampy inland area at the back of awa Waimanu is the origin of the name for wider Muriwai and for the nearby historic kāinga. The wetland held an abundance of resources including kai and plants that could be processed into various textiles. Wetlands were also important depositories for taonga, and for the treatment of timbers.
Roto Ōkaihau	Within the Property	A moderately sized dune-locked freshwater lake that was an important source of kai. A kāinga of the same name was located immediately to the west and made use of the resources of Ōkaihau and the smaller lake Waitewhau.
Ōkiritoto Falls	Within and adjacent to the Property	The upper waterfall of Waimanu awa and a place of spiritual significance for Te Kawerau ā Maki. Te Muriwai kāinga was located nearby.
Toroānui Falls	Within and adjacent to the Property	The lower waterfall of Waimanu awa and a place of spiritual significance for Te Kawerau ā Maki. Te Muriwai kāinga was located nearby.
Ngahere (Native Forest/Bush) and Indigenous Fauna	Within and adjacent to the Property	Including all native plant, fungi, fishes, birds, herpetofauna, bats, and both terrestrial and aquatic invertebrates within this habitat. The presence of kauri is of particular significance due to the rāhui Te Kawerau ā Maki put in place to protect kauri and the mauri of the forest extending to Goldie Bush approximately 2km south of the Project area. Similar



Site or Resource	Location	Description
		values apply to other native habitat within the Property.
Tūkautū Pā	Within and adjacent to the Property	An ancient Te Kawerau pā that was one of two guarding access to the inner south Muriwai area (its sister pā was at Matuākore). This pā was occupied in conjunction with the Ōkaihau kāinga. It is situated on/immediately adjacent to the southwest boundary of the Property covered primarily in native bush.
Oneonenui Kāinga	Adjacent to the Property	An ancient kāinga near Te Korekore. Te Kawerau ā Maki occupied the Oneonenui area with their Ngāti Te Kahupara and Uri ō Rangīāwhiowhio relatives until the land was sold from under them by Te Taou in 1884. The village was associated with extensive kūmara gardens.
Ramapukatea Kāinga	Within and adjacent to the Property	An old kāinga near the head of Waimanu awa.
Te Korekore Pā	Outside the Property	The massive headland pā of Te Korekore is of great significance to Te Kawerau ā Maki because it was the home of their founding ancestor.

There are also three archaeological Sites of Māori origin within the Muriwai Downs Property that the Applicant is aware of, namely:

- Pits (Q11_67, CHI 7333)
- Pits (Q11_68, CHI 7334)
- Midden (Q11_70, CHI 9235)

These Sites are discussed in more detail later in the description of existing archaeological values and in the Archaeology Report Appendix 14 to the AEE.

2.3 ZONING AND OVERLAYS

2.3.1 Zoning

Figure 5 shows the Auckland Unitary Plan's ("AUP") land zoning within and surrounding the Muriwai Downs Property. In summary, the Property sits entirely within the Rural - Rural Production Zone and well outside the AUP Rural Urban Boundary. It is also buffered on all sides by Rural - Rural Production Zone land parcels.

Other zones in the vicinity of the Muriwai Downs Property include:

- Residential - Rural and Coastal Settlement Zone approximately 200m to the southwest comprising the Muriwai Beach settlement inclusive of its own Business - Local Centre Zone;
- Open Space – Informal Recreation Zone approximately 1 km to the west comprising the Muriwai Regional Park inclusive of the Muriwai Beach Golf Course;
- Rural – Rural Coastal Zone approximately 400m to the northwest; and
- Residential – Mixed Housing Urban Zone approximately 250m towards the east.

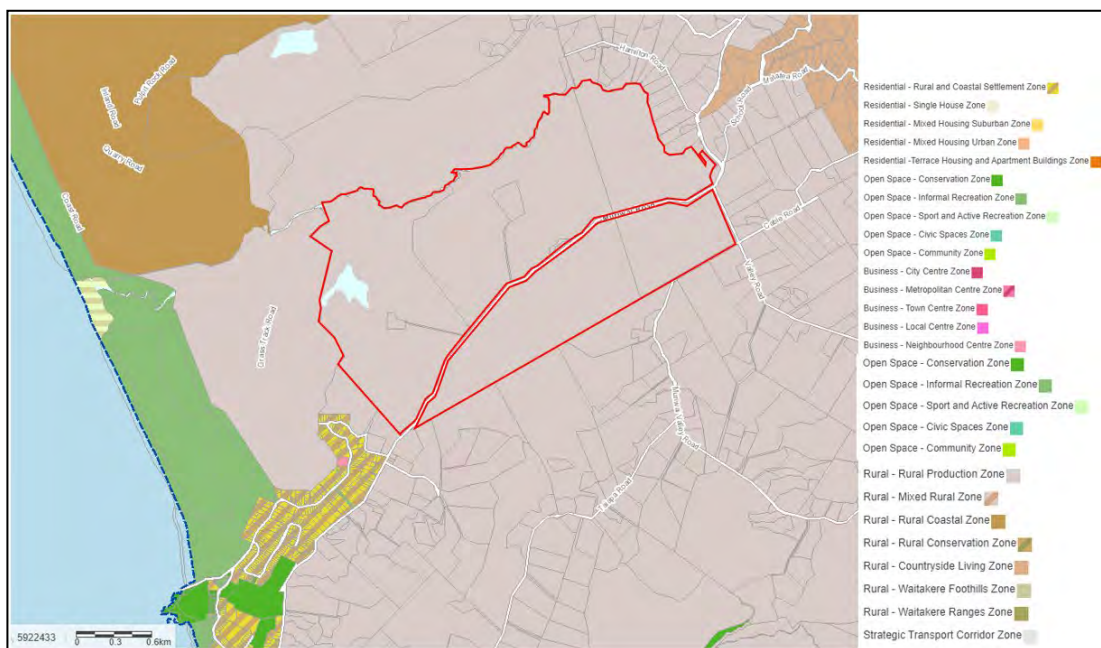


Figure 5: Auckland Unitary Plan Zone Map.

2.3.2 Natural Features and AUP Overlays

The Property contains various natural resources including kauri forest, streams, extensive wetlands (including the Ōkiritoto Wetland), a large inland dune lake (Lake Ōkaihou) and picturesque waterfall features (Ōkiritoto and Toroānui Falls). Some of these features also fall within various AUP overlays, as shown in Figure 6 and comprise:

- Wetland Management Areas including Lake Ōkaihou and Ōkiritoto Wetland;
- Various Significant Terrestrial Ecological Areas (SEA);
- A Natural Stream Management Area at the western end of the Muriwai Downs Property;
- A Natural Lake Management Area - Lake Ōkaihou;
- Outstanding Natural Features including Toroanui and Ōkiritoto Falls and Lake; and
- A Quality Sensitive Aquifer Management Area extending beneath much of the Property (refer overlay comprising light blue circles).

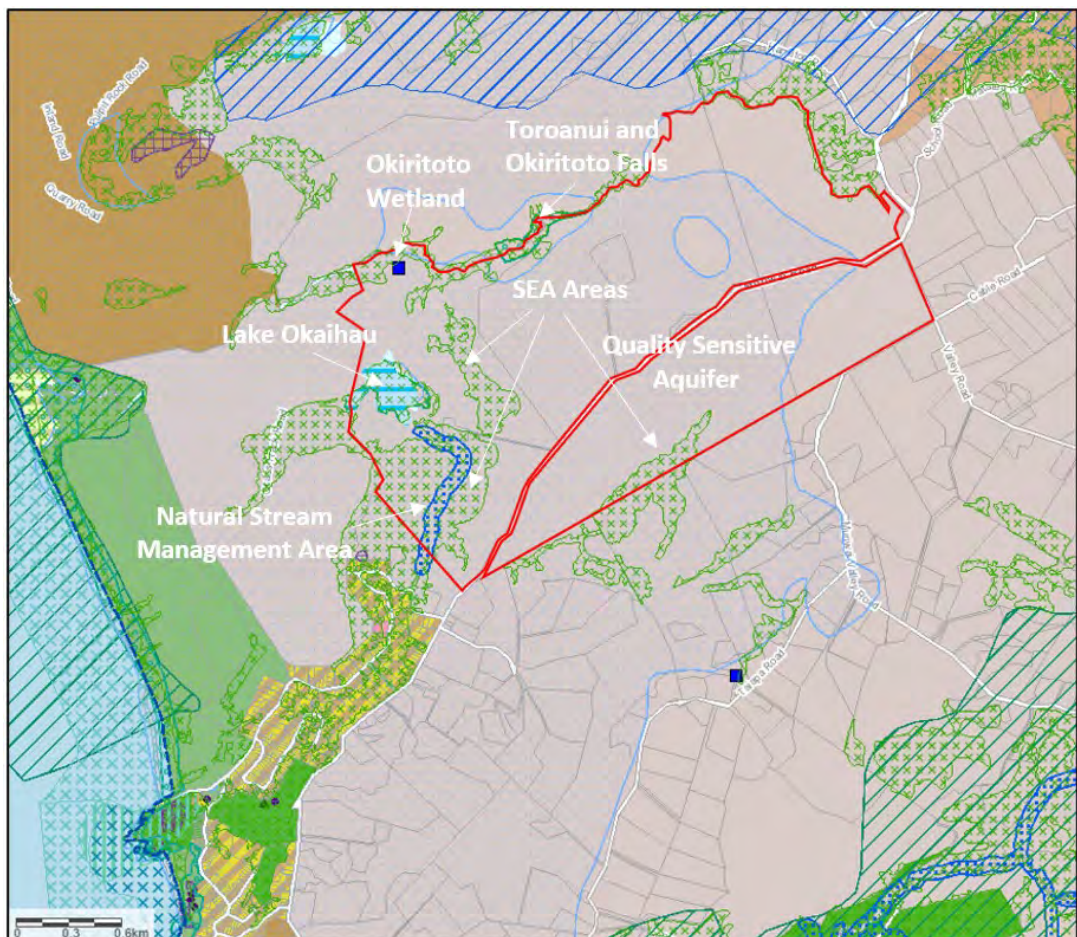


Figure 6: Auckland Unitary Plan Overlay Map

Further details on these AUP overlays, and the specific features within them, are provided in Section 5 of this AEE.

2.4 EXISTING LAND USE AND ACTIVITIES

2.4.1 Land Use

Current land uses within the Muriwai Downs Property include:

- Dry stock (sheep and cattle) farming;
- Dairy farming;
- Farm cropping / pasture renewal;
- Quarrying;
- Farm dwellings; and
- Rural residences.

Land use on adjacent land is also predominantly pastoral farming and includes lesser amounts of rural-residential and forestry.

There are a total of seven separate dwellings located within the Property. Locations of these dwellings are denoted by the red stars in Figure 7. Circled red stars indicate dwellings that are currently unoccupied. Other dwellings are currently used for worker accommodation or rented.



Figure 7: Locations of existing dwelling within the Muriwai Downs Property.

There is a relatively small number of residential dwellings in close proximity to the Property. These comprise approximately 15 rural residences adjacent to the Property's eastern boundary located on Muriwai and Hamilton Roads, and a handful of dwellings located adjacent to the southern boundary on Muriwai Valley Road. Figure 8 shows the closest neighbouring dwellings to the Property are 774 Muriwai Rd and 68 Cable Rd. Each are setback approximately 30m from the western and southern Property boundaries, respectively.

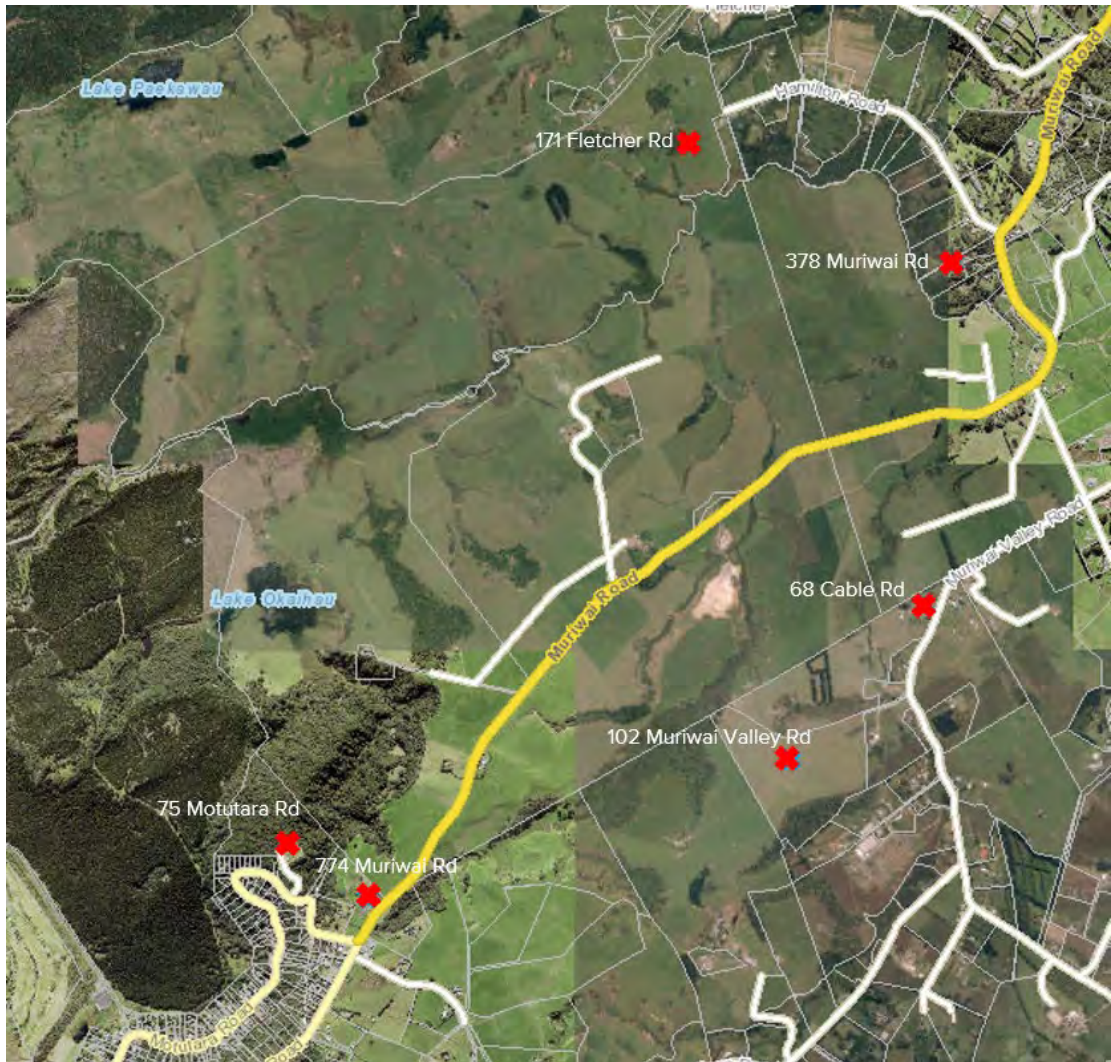


Figure 8: Closest Dwellings to the Muriwai Downs Property (denoted by red crosses)

2.4.2 Existing Resource Consents

Information on the Property’s existing resource consents is summarised in Table 5.

Table 5: Existing Consents

Consent Number	Description
Take and use of water	
WAT80317496	Water consent
WAT60379235	Temporary groundwater take for aquifer pump testing

Consent Number	Description
Discharge to air	
LUC80007099	Discharge dust to the air from the quarrying of aggregate
Landuse	
BUN60380313 LUC60380139 DIS60380281	Construction of a hardstand including earthworks and stormwater discharge
LUC80003951	Consent for filming TV series, commercials, films etc and associated activities
LUC80007099	Consent to create a film set, erecting temporary buildings then removal.
EXE21561948	Temporary marquees for filming set facilities
LUC60370538	PA Drilling two bores for groundwater testing
LUC60384519 WAT60379235 DIS60381246	Construction of a groundwater bore, taking groundwater for well testing purposes and discharging well test water within a 100m setback of a natural wetland.
LUC60269960 (Permit #24340)	Land use consent for the quarry. The Bears Home Company Limited has applied to Auckland Council to renew this consent and is currently being processed.
Subdivision	
BUN60306864 SUB60035517 LUC60306865 SLC60860 ⁷	Subdivision creating ten new rural-residential lots, two balance lots and protection of native bush and wetland.

⁷ These subdivision related consents lapse in September 2022. The Applicant does not intend to exercise these consents.

2.4.3 Existing Farming Activities

Details regarding general management of the Muriwai Downs Property and associated farming operations are provided in Farm Operations Report (Appendix 9). In general, farming activities include sheep and beef livestock rearing and grazing, dairy farming, cropping and pasture renewal. Further details of relevant aspects of the farming activity are summarised below.

Figure 9 provides a map of the current farm layout, showing current paddock extents.

Dairy Farming

The dairy unit is approximately 100ha (90ha effective) in size and is located at the eastern end of the Property (refer paddocks 1 through 45 in Figure 9).

Approximately 15 ha of the dairy farm has effluent irrigation infrastructure installed. This is located on flatter parts of dairy farm paddocks immediately south and adjacent to Muriwai Road (refer paddocks 19 through 31 in Figure 9).

Dry Stock Farming

Other farmed areas of the Property utilise pasture for dry stock grazing (Refer paddocks 46 through 95 in Figure 9). Stock yards and a woolshed is located centrally within the farm.

Synthetic Fertiliser Application

Bulk fertiliser is not stored on the farm. Rather, it is brought on and spread immediately via ground spread contractors. Typical synthetic fertiliser application rates result in a Nitrogen loading rate of approximately 110 kg/ha/yr across the Property.

Stock Watering

Stock watering supply is provided by on and off-stream farm dams supplemented by permitted surface water takes from the Raurataua Stream and a shallow groundwater bore.

Stock Exclusion

No dairy cows have access to any natural water bodies within the dairy unit. Stock are also excluded from accessing any part of the Raurataua and Ōkiritoto streams and all significant ecological areas on the Property apart from the western and northern edge of Lake Ōkaihau (from within paddocks 68 and 69 west) and SEA-T 5482 located south of the quarry (refer paddocks 47 and 48).

Some water bodies, including a number of wetlands within dry stock farmed areas are currently accessible to sheep and cattle.

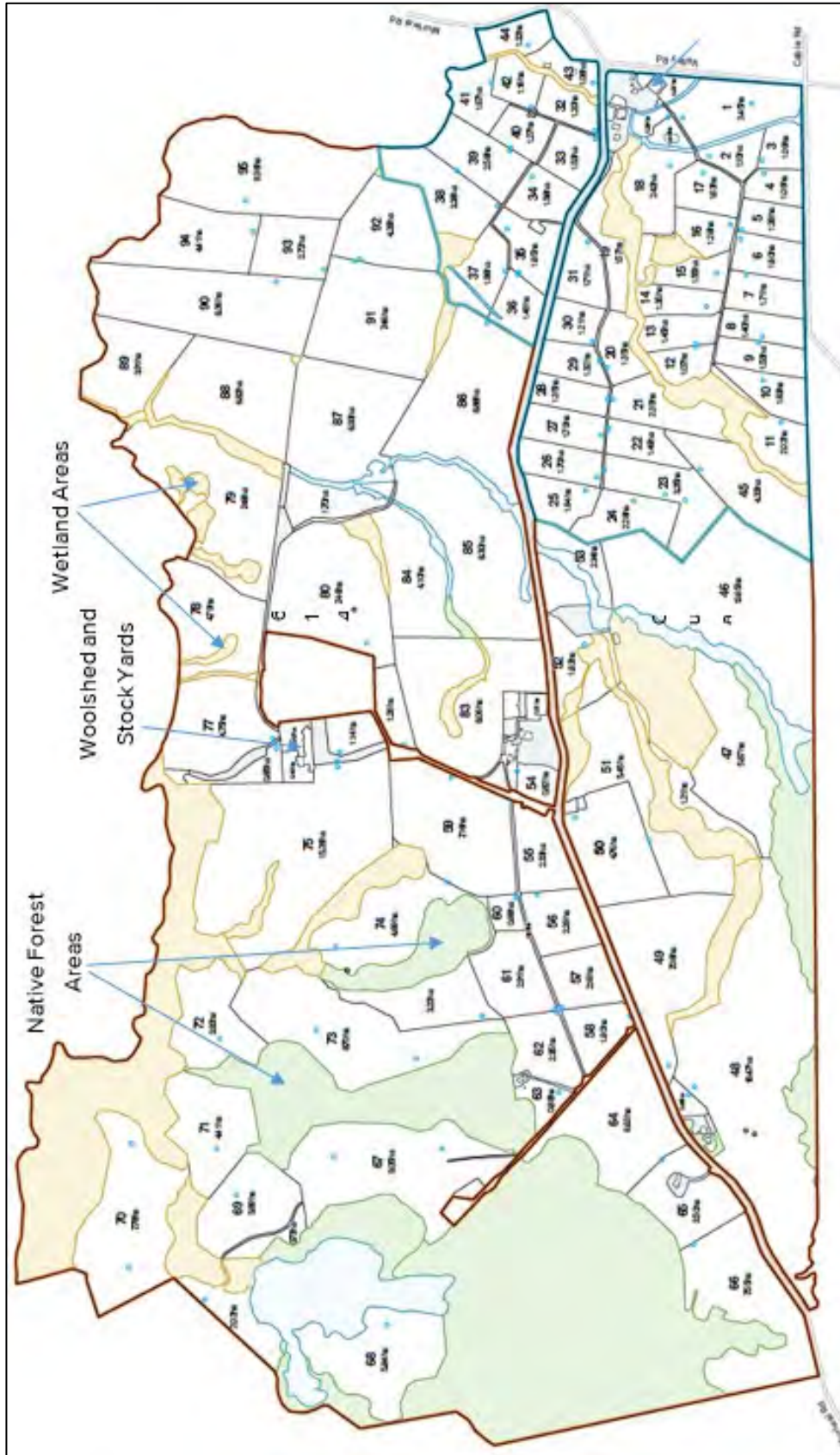


Figure 9: Current Muriwai Downs Farm Layout.

2.4.4 Existing Quarry Activities

A sandstone quarry located south of Muriwai Road (Figure 3) has been in operation since the 1960's. Since beginning its operation, this quarry has supplied sandstone, pavers and other sandstone aggregate products to the local market – some of which have been used in the construction of dwellings on the Property. Aggregate from the quarry is a sought-after material by local farmers and lifestyle Property owners who use it to form farm access tracks. In addition, Mana Whenua currently use the quarried material to construct and repair bush walking tracks in the Waitakere Ranges. The quarry has also previously been used for the winning of clay for the production of pressed brick making.

The quarry currently operates at a modest level of intensity with extraction of approximately 600 tonne of product per year. This equates to approximate 375m³ or 55 truckloads per year.

Access to the quarry is via a vehicle crossing off Muriwai Road. Operating hours are:

- Monday to Friday: 7.00am to 5.30pm
- Saturday: 7.00am to 1.00pm
- Sundays and Public Holidays: Closed

The Bears Home Company Limited has applied to renew the land use consent for the quarry and the application is currently being processed by Auckland Council. It is anticipated the consent (if granted) will allow further extraction whilst restricting the quarry to an active area of approximately 2 ha at any point in time.

2.5 LANDSCAPE AND AMENITY

Full descriptions of the wider landscape and amenity context and specific landscape and natural character features and values of the Property itself are set out in the Landscape Report (Appendix 13). Summary descriptions are provided below.

2.5.1 Landscape and Amenity Context

The coastal settlement of Muriwai is located nearby the Property, loosely beginning approximately 200m west of its western boundary. The settlement is principally hinged off Oaia Road, Motoara Road and Waitea Road, with the western extent of residential development occupying the crest of the coastal cliffs above Maukatia bay (Maori Bay). Conversely, houses are set back from the Muriwai beach (Te Oneone Rangatira) frontage and reaches inland toward the east.

Beyond the developed extent of Muriwai settlement, much of the landscape is a mix of pastoral land, lifestyle blocks, bush blocks, production forestry (Woodhill Forest) in addition

to the existing Muriwai Golf Course located north of the coastal settlement. Te Korekore Pā is located outside the Property, positioned approximately 1200 m to the northwest, but is within the Property's wider landscape context. As outlined in Table 4 above, this Pā is a significant cultural Site for e Kawerau ā Maki. It is positioned on a headland that contains commanding views across the surrounding landscape and parts of the Site.

The landform of the area is partly influenced by the coastal context which features steep coastal cliffs and hills to the west of the Property. These result in dramatic topographical attributes along the coastal interface with the cliffs present at the southern portion of Muriwai beach, extending south along the coast toward Te Henga (Bethells Beach). This area heavily influenced and occupied by human activities such as the existing Muriwai Golf Course along the coastal frontage, and the large areas of production forestry. Further inland, the topographical characteristics are of a more undulating nature featuring rolling hills and small gullies. A series of connected ridges broadly encloses the Property and wider local context of the undulating pastoral landscape. The east-west ridge system to the north of the Property is known as Te Tuara ō Titahi⁸ and extends towards Hamilton Road located east of the Property. This more elevated land provides the context for the Property and adjacent lower level rural landscape to the north and south of Muriwai Road where it traverses through the Property. In addition, the broader context includes Lake Paekawau, situated north of the enclosing northern ridge just described. This lake sits at an elevation of approximately 38m and also contains a Maori cultural landscape association.

2.5.2 Site Character, Amenity and Features

Within the Property itself, the landform characteristics described above support various small streams and tributaries including the Rauataua and Ōkiritoto Streams which border the northern and eastern boundaries of the Property. The Ōkiritoto Stream contains two waterfalls including the Ōkiritoto Falls which features a drop of approximately 8m drop (Figure 10), and the larger Toroanui Falls, approximately 230m further downstream, has a drop of approximate 15m (Figure 11). Both feature natural pools at the base of the waterfalls, with the context of the Ōkiritoto Falls being historically modified to accommodate a flax mill waterwheel which is no longer in existence⁹.

Lake Ōkaihou is located at the western portion of the Property (Figure 12), and a large natural wetland, which forms part of the Ōkiritoto Stream system, exists along the northern boundary of the Property, also at its western end (Figure 13). Indigenous vegetation (discussed more fully in Section 2.21) also exists within the Property, broadly restricted to

⁸ Cultural Impact Assessment, Te Kawerau Iwi Tiaki Trust

⁹ Archaeology Report (Appendix 14)

the gully systems (Figure 14), while some individual indigenous specimen trees also exist surrounded by pasture.



Figure 10: Ōkiritoto Falls



Figure 11: Toroānui Falls



Figure 12: Lake Ōkaihau



Figure 13: Ōkiritoto Wetland



Figure 14: Example of Mature Native Forest Within Gully Systems

2.6 SOILS AND GEOLOGY

2.6.1 Soils

Soils on the Muriwai Downs Property are fully described in the Soil Report (Appendix 8). In summary, soils within the Property include Orthic Granular Soils and Sandy Recent Soils. Orthic Granular Soil makes up the bulk of the soil on the Property with a smaller area of Sandy Recent Soil. Within these two soil types there are four Land Use Capabilities (LUC)¹⁰. The extents and locations of these LUC units are illustrated in Figure 15.

¹⁰ A description of the Land Use Capability system and the individual classes can be found in 'Land Use Capability Survey Handbook- A New Zealand handbook for the classification of land' (Lynn, *et. al*, 2009) attached as Appendix 1 of the New Zealand Sports Turf Institute report.

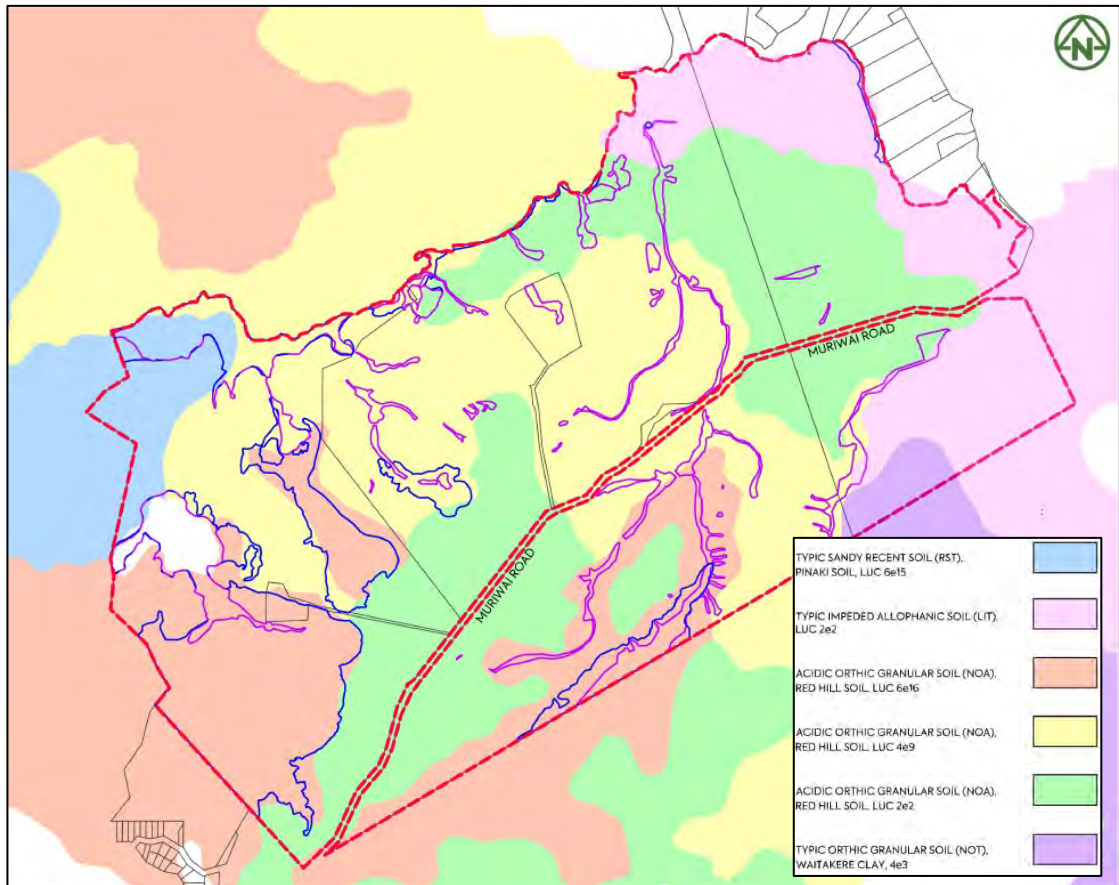


Figure 15: Soil map of the Muriwai Downs Property

Based on the LUC information, Site-specific soil analysis results, and Auckland Unitary Plan Soil Definitions, the Muriwai Downs Property contains no ‘Elite Soils’. There are, however, three areas that could be classed as land containing ‘Prime Soils’. These areas carry LUC classification of 2e2 and are denoted by the light green and pink areas in Figure 15. These prime soils make up approximately 30% of the Property’s land area and they predominately occur in its eastern and southwestern parts.

2.6.2 Geology

A fulsome description of the local geological setting is provided in the Water Effects Summary Report (Appendix 10). Geologically significant formations within and around the Property are illustrated in Figure 16 and summarised individually below.

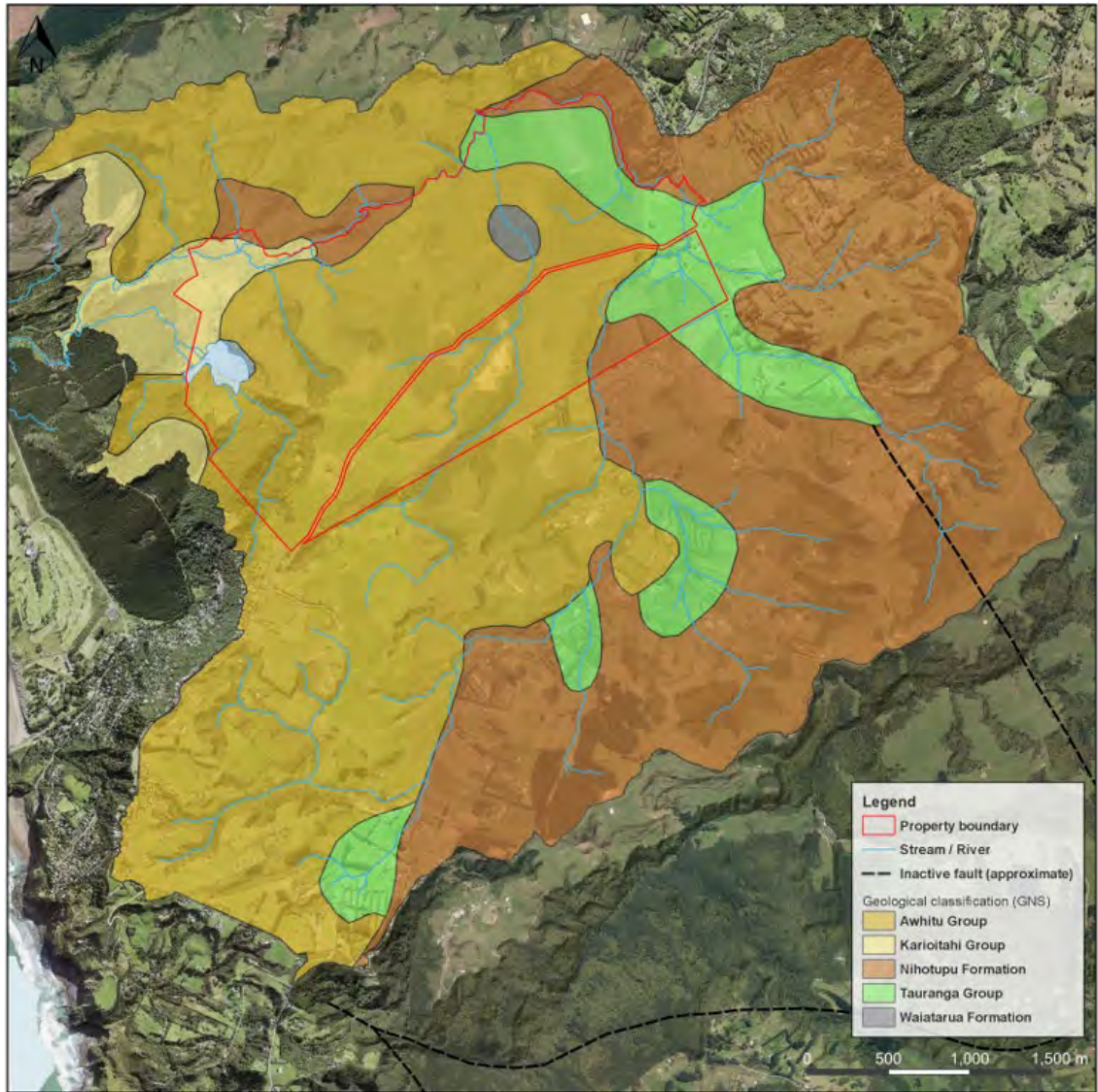


Figure 16: Local Surface Geology (as mapped by GNS)

Karioitahi Group

This group comprises early Pleistocene to Holocene aged (2 Million years to present) coastal sands occurring in the western parts of the Property.

The Tauranga Group

This group comprises late Miocene to Holocene aged (10 Million years to present) alluvium comprised of sand, silt, mud and clay overlying the Awhitu and/or Nihotupu formations deposited on valley floors also predominantly in the eastern parts of the Property.

The Awhitu Group

This group comprises late Pliocene to Early Pleistocene aged (2 to 3 Million years) interbedded moderate to poorly consolidated sandstone, with paleosols, lignite and carbonaceous mudstone. This layer is the most predominant surficial unit across the Muriwai Downs Property.

The Nihotupu Formation

This formation is an early Miocene aged (20 Million years) volcanoclastic sandstone comprising submarine volcanoclastic grit, sandstone and siltstone, underlying the Awhitu formation.

The Waitarua Formation

This formation is also an early Miocene aged (20 Million years) basalt flows, including pillow lavas with minor basic andesite.

2.7 TOPOGRAPHY

Topographically, the Muriwai Downs Property is characterised by rolling terrain dipping in elevation from more elevated terrain in the south, towards lower lying terrain in the north, where a main dividing gully system defines the northern boundary. A number of incising features (watercourses and wetlands) form tributaries to the main dividing gully, with these features being far more significant and pronounced over the western half of the Property.

Further information on the topography of the Property and wider area is provided in the Geotechnical Site Appraisal Report (Appendix 4) and in the Landscape Report (Appendix 13) respectively.

2.8 GROUNDWATER RESOURCES

Local groundwater resources are described in the Water Supply and Storage Options Reports (Appendix 7) and the Groundwater Effects Report appended to the Water Effects Summary Report (Appendix 10). In summary, there are three separate groundwater aquifer units beneath the Property, namely:

- The shallow Awhitu formation;
- The underlying Nihotupu Formation; and
- An extruding pillow lava / basalt formation.

A conceptualised north-south cross section is provided below to illustrate the typical configuration of these groundwater aquifers beneath the Property (Figure 17).

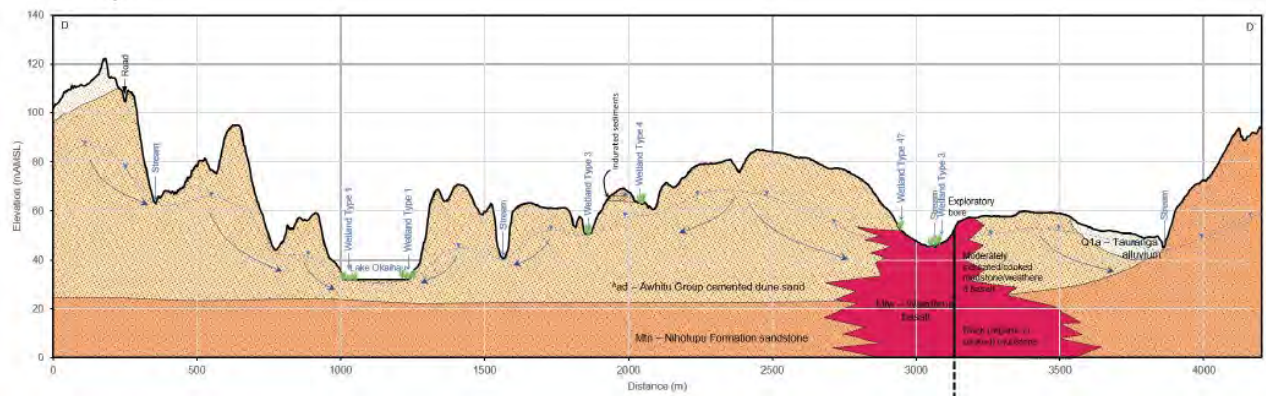


Figure 17: North-South Cross Section Showing Local Groundwater Aquifers

Awhitu Formation Aquifer Resource

The interbedded structure of the Awhitu Formation forms a series of multiple shallow, perched groundwater layers. These layers provide the predominant source of baseflow to the Raurataua Stream / Ōkiritoto Stream catchment and upper sub-catchments across the Property.

Nihotupu Formation Aquifer Resource

The deeper, Nihotupu Formation groundwater resource is largely separated from overlying perched groundwater within the Awhitu Formation. This formation has been targeted by a number of small domestic supply wells in the local area. The calculated transmissivity range of these wells is relatively low at between 1 and 3 m²/d so are usually only suitable for small rates of take.

Pillow Lava / Basalt Aquifer Resource

The Pillow Lava forms part of the Waiatarua Formation and functions as an underground aquifer of surrounded by the Nihotupu Sandstone Formation. Vertical seepage through the sandstone is the recharge source for the groundwater stored in this basalt formation.

Preliminary drilling and testing, coupled with geophysical surveying and analysis shows this groundwater aquifer is highly permeable and possesses a water storage capacity of between 500,000 m³ and 1,000,000 m³.

Groundwater Quality

All aquifer resources are of potable quality within the Drinking Quality Standards of New Zealand.

2.9 CLIMATE

2.9.1. Rainfall and Evapotranspiration

Historical evaporation and rainfall data has been obtained from the National Institute of Water and Atmospheric Research (NIWA) virtual climate station network (VCSN). The VCSN data provides estimates of climate variables on a 5 km regular grid, covering all of New Zealand.

Estimates of daily rainfall and evaporation were obtained from VCSN Site 21836 located approximately 2 km south of the Property. A summary of monthly rainfall and potential evapotranspiration from 1972 through 2020 for this location is presented in Figure 18.

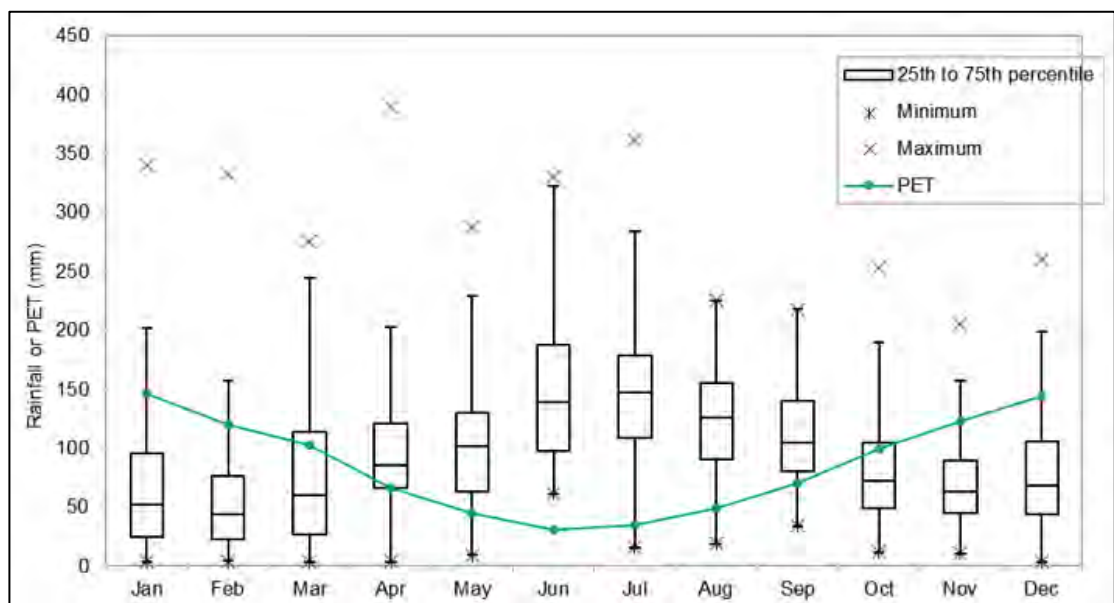


Figure 18: Annual rainfall and potential evapotranspiration (1972-2021) – VCSN# 21836.

2.9.2. Wind

The Muriwai Beach wind environment is illustrated by the wind rose shown in Figure 19. Winds from the southwest quarter are strongly predominant.

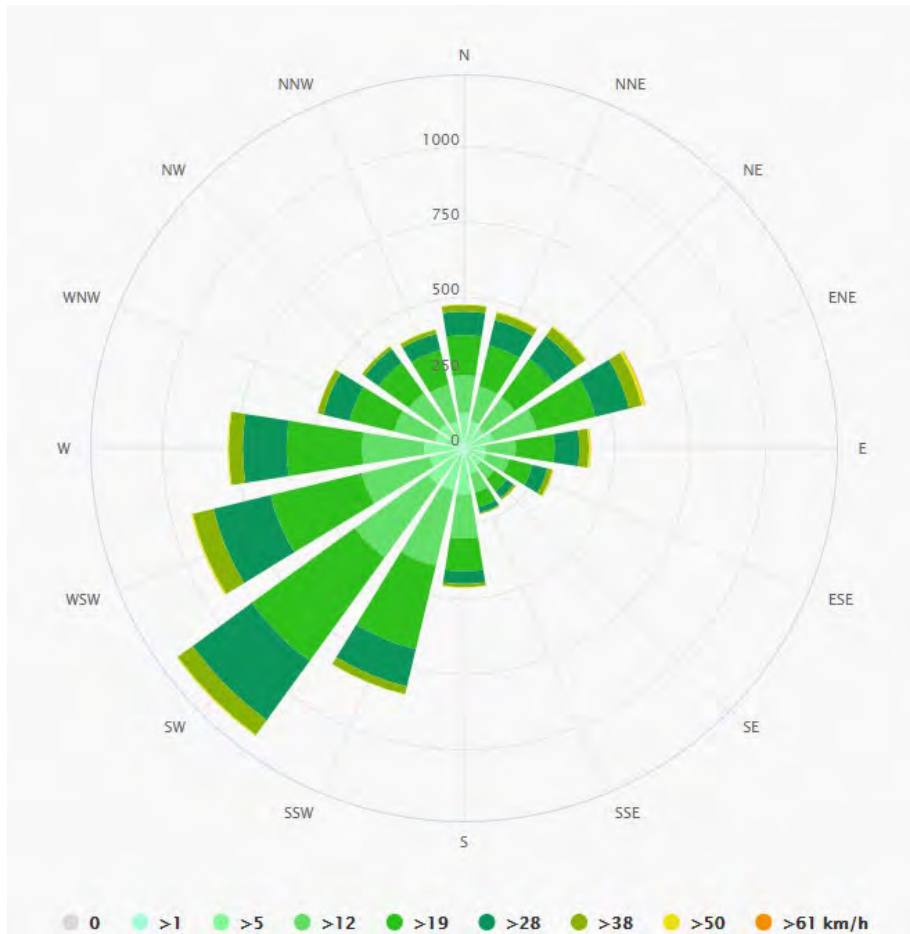


Figure 19: Muriwai Beach Wind Rose (Source: Meteoblue).

2.10 SURFACE WATER

The main surface water bodies within and adjacent to the Muriwai Downs Property are:

- Permanent streams – comprising the Raurataua and Ōkiritoto streams and some associated unnamed tributaries;
- Intermittent streams – comprising higher elevation parts of unnamed tributaries of the Raurataua and Ōkiritoto streams; and
- Lake Ōkaihau.

2.10.1 Streams

Description

There are 22 streams on the Muriwai Downs Property, including nine permanent streams and twelve intermittent streams. Permanent streams total approximately 9 km in length and intermittent streams total approximately 4.1 km. Locations of these streams are shown in Figure 20.

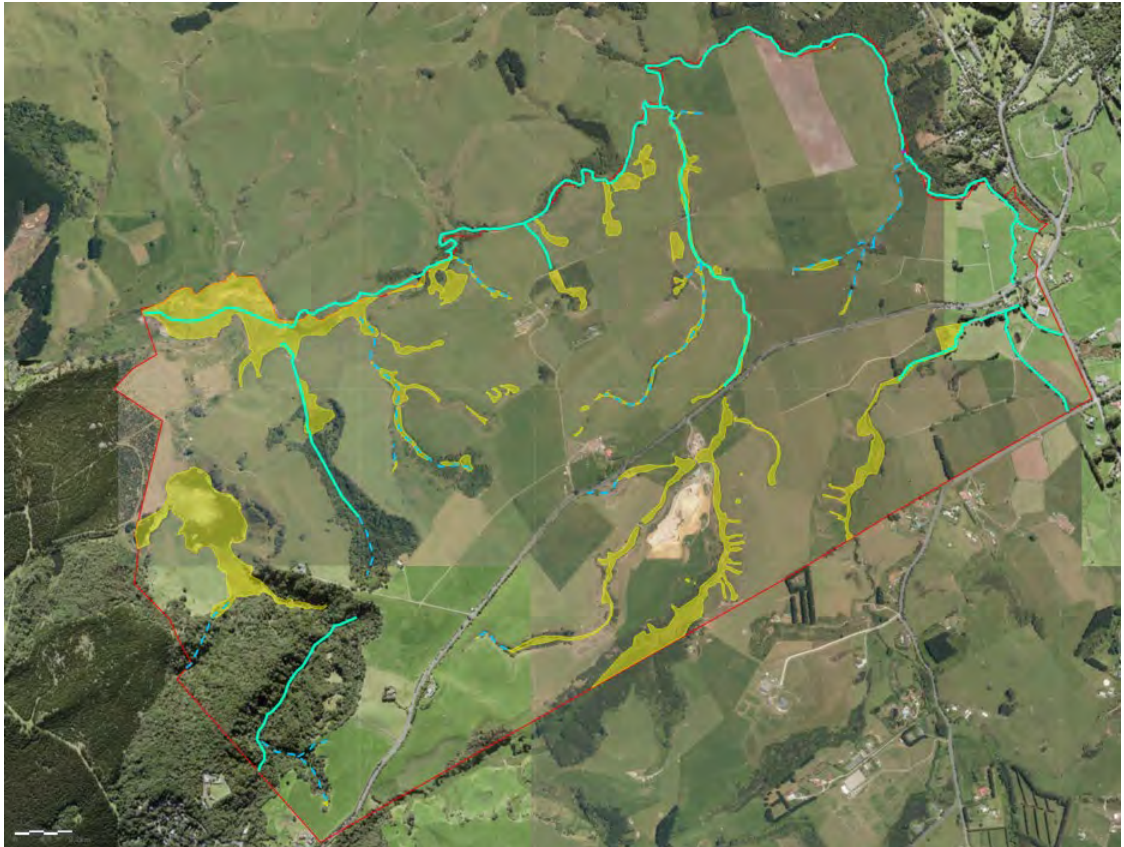


Figure 20: Permanent Streams (solid green line) and Intermittent Streams (dashed blue line)

The Raurataua Stream is the main stream on the Property. It runs along the north-eastern boundary, flowing over Ōkiritoto (then becoming the Ōkiritoto Stream) and the Toroānui Falls. The Raurataua Stream is well shaded by native forest along the true right bank, providing excellent stream habitat for native fish (Figure 21). Upstream of the Toroānui Falls, the stream consists of a sluggish, hard-bottomed stream with predominantly run, pool, riffle habitats. When surveyed, the average wetted width in this reach was approximately 3-5 m with a central channel depth of varying from roughly 0.3 m to 1.5 m (in deep pools).



Figure 21: The Raurataua Stream upstream of Toroānui Falls.

Overall, streams on Site within pastoral areas are highly modified and degraded due to the surrounding rural land use (Figure 22). Distinct commonalities include poor riparian cover, degraded stream beds with high sediment loading, channelised reaches, and a limited range of habitats for freshwater fauna. In contrast, streams within vegetated gullies are well shaded, hard bottomed and overall exhibit good ecological condition.



Figure 22: An example of a permanent stream that has been highly modified (Ecological condition rated as 1-Very poor)

Of the 21 permanent and intermittent streams surveyed, five were assessed as having either good or very good condition, seven were assessed as having moderate condition, and nine were assessed as having either poor or very poor ecological condition.

Stream Water Quality

In general, from the data collected to date, stream water quality appears reasonably high. It meets applicable water quality guidelines for ammonia with all baseline recordings being below the 95% exceedance threshold. Nitrate-N is also generally below the exceedance thresholds although displays exceedances in the wetter months.

Stream Flows

Baseline stream flow monitoring data is presented in Figure 23. As expected, flows increase with increasing distance downstream along the catchment as additional tributaries and additional groundwater baseflow joins these flows. In general, flows at all monitoring Sites showed quick flow increases in response to heavy rainfall events, with increased attenuation of the flood peaks generally observed with increasing distance downstream.

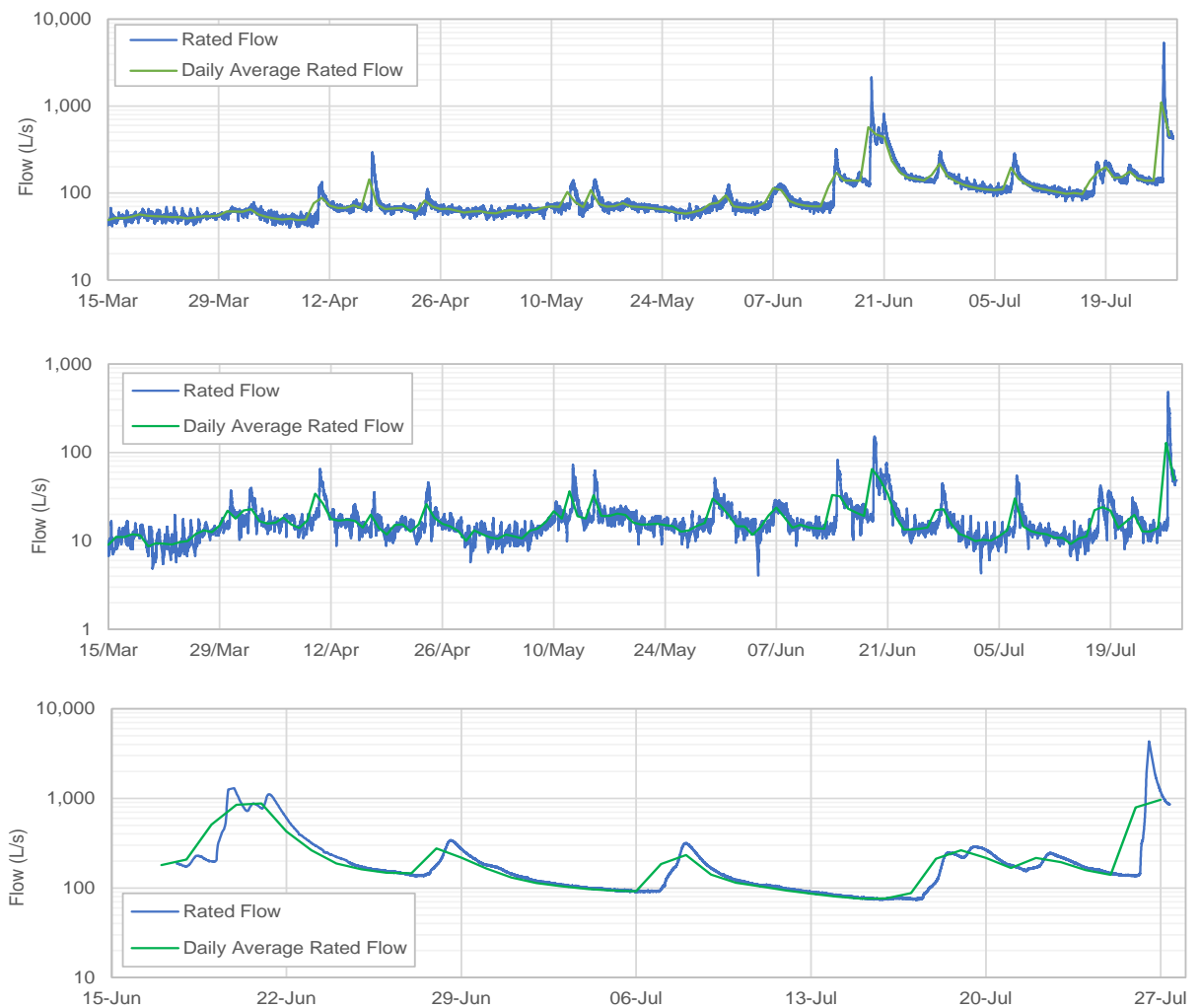


Figure 23: Raurataua Stream / Ōkiritoto stream flow at Site 1 (top), 2 (middle) and 3 (bottom)

Historic Streamflow Regime:

There are no historical flow records of the Raurataua Stream / Ōkiritoto Stream catchment, however, with the use of continuous on-Site monitoring (summarised above), and various spot gauging, the flow regime has been simulated using a catchment flow model developed by WWLA¹¹. These simulated flows, between 1972 and 2020, are presented in Figure 24 and associated flow statistics are summarised in Table 6.

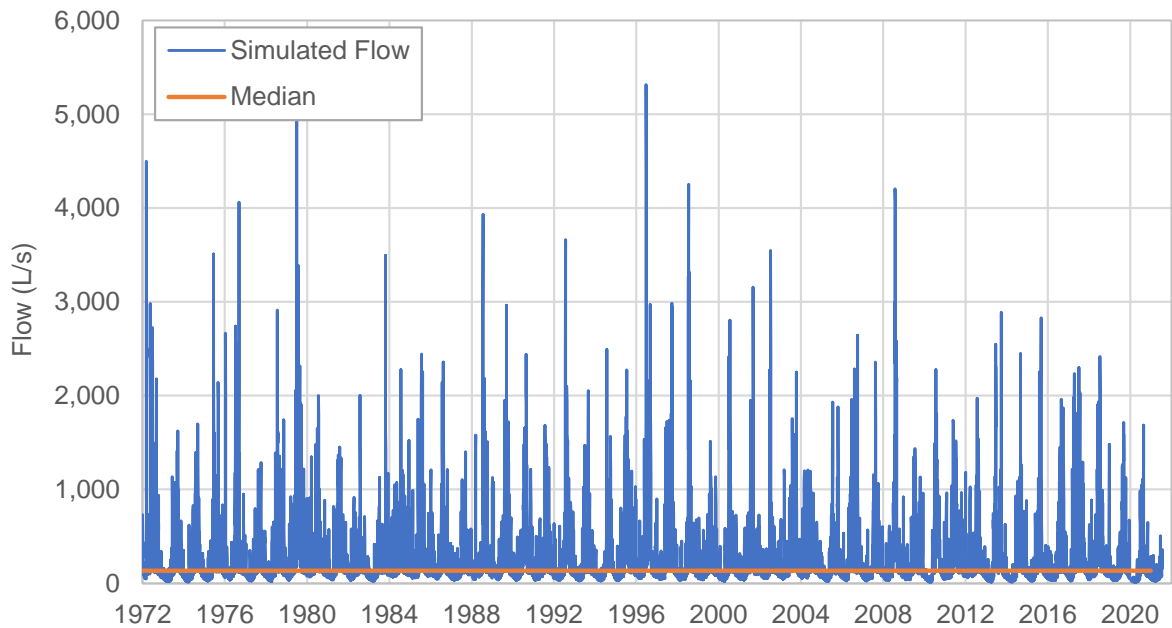


Figure 24: Simulated Raurataua Stream / Ōkiritoto Stream flow hydrograph

Table 6: Raurataua Stream / Ōkiritoto Stream Catchment flow statistics

Statistic	Flow (L/s)
Minimum	11
Mean annual 7-day low flow (MALF)	34
25 th percentile	74
Median	131

¹¹ Refer Water Effects Summary Report (Appendix 10)

Statistic	Flow (L/s)
Mean	274
75 th percentile	310
90 th percentile	669
Maximum	5,210

2.10.2 Lake Ōkaihau

Description

Lake Ōkaihau is a dune lake located in the western extent of the Property (Figure 37 in Section 2.12). It covers an area of approximately 6 ha and is 9-10 metres deep near its centre. The lake's surface water catchment extends approximately 94 hectares upstream and south of the lake, consisting of predominately forested land, with overland flow channels in fairly steep sided gullies.

Lake Water Levels and Water Balance

Very limited historical water level data is available for Lake Ōkaihau, although Auckland Council began recording monthly water levels in March 2021. WWLA have estimated the lake level range at approximately 0.7m and have also derived water balance calculations for the lake, as summarised in Table 7.

Table 7: Lake Ōkaihau Water Balance

Input / Output	Water Balance Component	Average (L/s)	Percentage
Inputs	Rainfall	2.8	14%
	Catchment Inflows	17.7	86%
Outputs	Evaporation	1.9	9%
	Loss Through Seepage	18.7	91%

Lake Ōkaihau's hydrological functionality is summarised as follows:

- The lake bed consists of low permeability material that is thicker nearer its centre, and pinches (i.e. thins) towards the margins of the lake;
- This results in low groundwater seepage loss from the lake during periods of low lake water levels (summer), and higher rates of seepage during periods of elevated water levels (winter);
- The largest inflow to the lake is from the stream catchment from the south; and
- The largest net loss from the lake is through groundwater seepage to the north, towards the Ōkiritoto Stream.

Lake Water Quality

Lake Ōkaihau water quality data is discussed in the Baseline Environmental Monitoring Report, which is appended to the Water Effects Summary Report (Appendix 10), and summarised in Figure 25 below. Overall, lake water quality observations are similar to those made in respect of streams on the Property, although, being a lower energy environment, ammonia levels are generally higher.

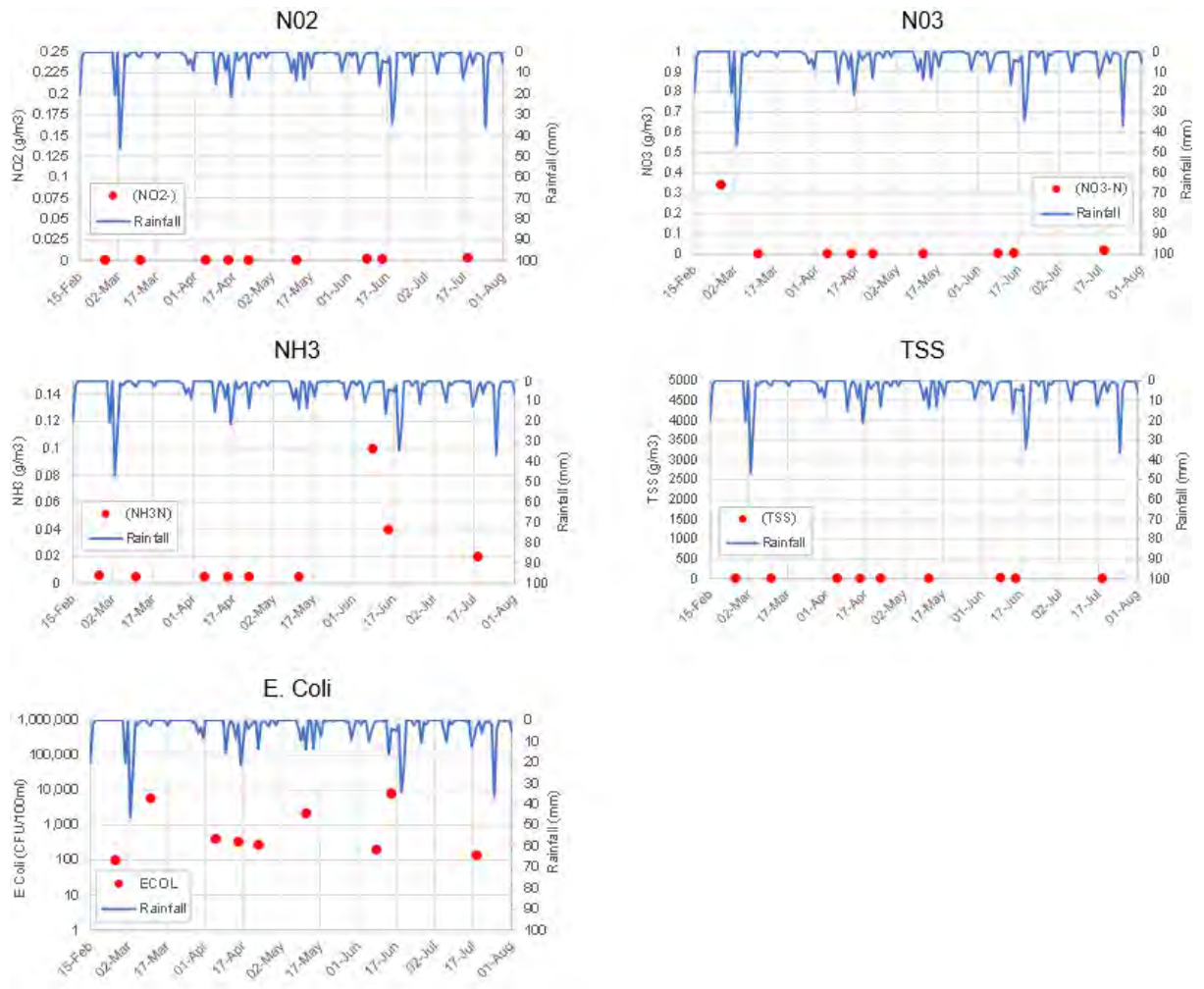


Figure 25: Summary plots of Lake Ōkaihou water quality

2.10.3 Other Fresh Water Users

Locations of other nearby water users, as recorded in Auckland Council's consent data base, are shown in Figure 26. Groundwater users are denoted by red crosses (consented takes) and blue dots (permitted activity takes), while locations of consented surface water takes are shown as light blue crosses. In addition, there are also likely to be other small, permitted surface water takes in the area, as well as permitted groundwater takes from old bores that are not included in Council's records.

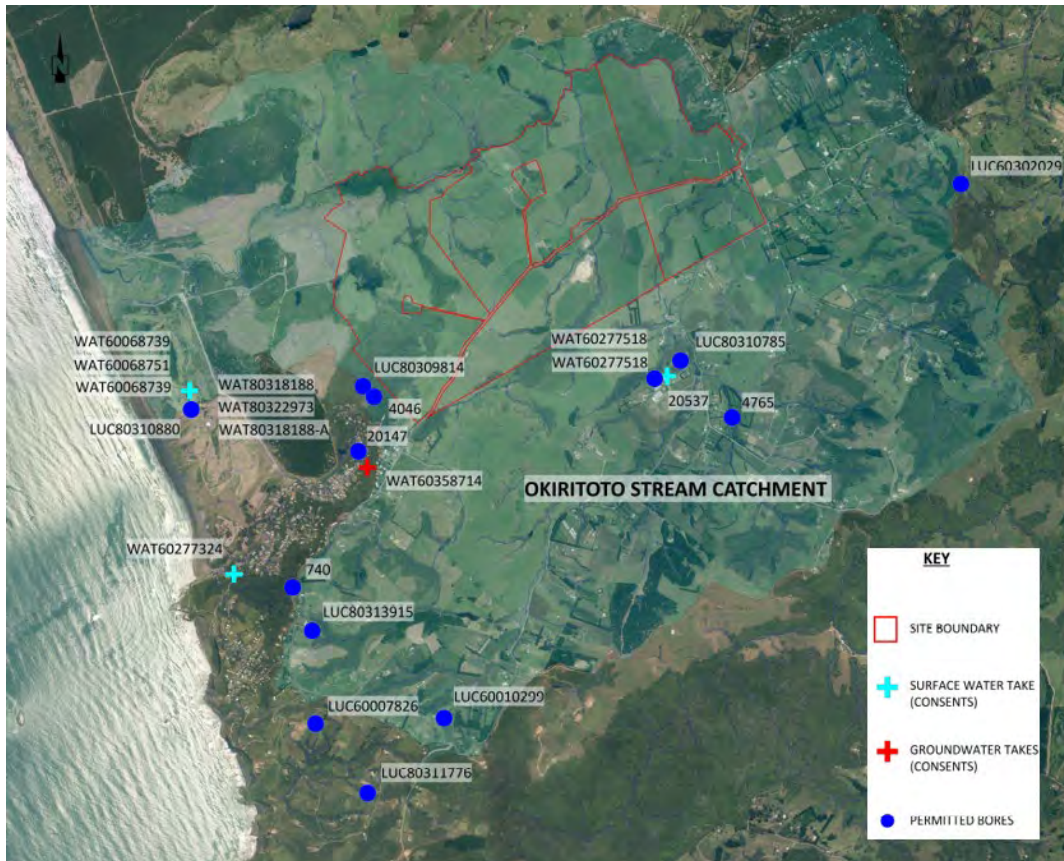


Figure 26: Other Nearby Consented Water Users

One of the largest nearby surface water users is the Muriwai Golf Club which abstract up to 1,150 cubic metres of water per day from the Ōkiritoto Stream approximately 2 kilometres downstream of the Muriwai Downs Property’s western boundary. This water is used to irrigate 20 ha of golf tees, greens and fairways at the golf course¹².

2.11 ECOLOGY

Descriptions of the wider ecological context and specific aquatic and terrestrial ecology found within the Property, are provided in the Ecology Report (Appendix 11). A high-level summary is provided in the following sections.

2.11.1 Ecological Context

The Site lies within the Rodney Ecological District within the Auckland Ecological Region.

The modification of native bush, wetlands and ecosystems, and the resultant loss of biodiversity is a characteristic of the state of biodiversity in this District. While certain areas, especially in the northern part of the District, still retain large areas of bush or relatively

¹² Consent Application Decision Report (WAT60068739 and WAT60068751)

unmodified landscapes, most of the ecosystems within the District are fragmented, isolated pockets of bush, wetlands, dunes and dune lakes, estuaries and scrubland. Less than 15 % of the original bush remains, with the majority having been cleared between 1860 and 1984 to create pasture for stock grazing. Additionally, less than 1% of the District's wetlands remain - most having been drained between 1942 and 1977 for agriculture and urban development.

The loss of habitats for indigenous forest wildlife would have occurred at a similar level to the loss of botanical diversity once the original forest cover was removed. Intensification of land use for agriculture and removal of riparian vegetation cover is often also accompanied by an associated reduction in habitat for native freshwater invertebrates and fishes and a reduction in water quality within watercourses.

The original forest cover over the Property would have been dune forest on its western parts comprising totara (*Podocarpus totara*), kanuka (*Leptospermum robusta*) and broadleaved species (predominantly puriri (*Vitex lucens*), kohekohe (*Dysoxylum spectabile*) and nikau (*Rhopalostylis sapida*)), with localised areas of kauri (*Agathis australis*).

Most of the low-lying central and eastern parts of the Property would have supported a mix of hardwood-podocarp-broadleaved forest with tawa (*Beilschmedia tawa*), kohekohe, rewarewa (*Knightia excelsa*) and hinau (*Elaeocarpus dentatus*) dominant. The Property's low-lying flood-prone areas to the south and far east would have once supported a mix of swamp forest and broadleaved species comprising kahikatea (*Dacrycarpus dacrydoides*) and puriri as canopy dominants.

Most of this original vegetation cover has since been removed and largely converted to pasture grazing and amenity plantings surrounding dwellings. While most of the Site has been converted to farming, SEA areas are present in steep gullies where kauri/ broadleaved forest remnants have been retained, as well as aquatic features such as Lake Ōkaihau and an extensive riverine wetland complex at the base of Toroanui Falls.

2.11.2 Wetlands

Description

All wetlands on the Muriwai Downs Property have been individually delineated, mapped and their current ecological condition assessed in the Ecology Report (Appendix 11).

There are a total of 21 wetlands on the Property meeting the NPS-FW definition of a 'natural inland wetland'. These total an area of approximately 37 ha. The majority of these have been degraded through historic agricultural activities, resulting in significant modification to their soils and plant communities. Of all the Property's wetlands, 13 (or 62%) are considered in "very poor" ecological condition, 4 (or 19%) are considered in "poor" ecological condition, and the remaining 4 (or 19%) are considered in "moderate" ecological condition. None of the wetlands on the Property are considered in "good" or "very good"

condition. Locations and relative ecological conditions of individual wetlands are shown in Figure 27. Photographs of wetland examples are provided in Figures 28 and 29.

All wetlands on the Property also have a history of being drained. Reviews of historic aerial photographs show clear signs of drainage works including channelisation and excavation in 1940, fresh drainage works around 1963, and again around 1984.

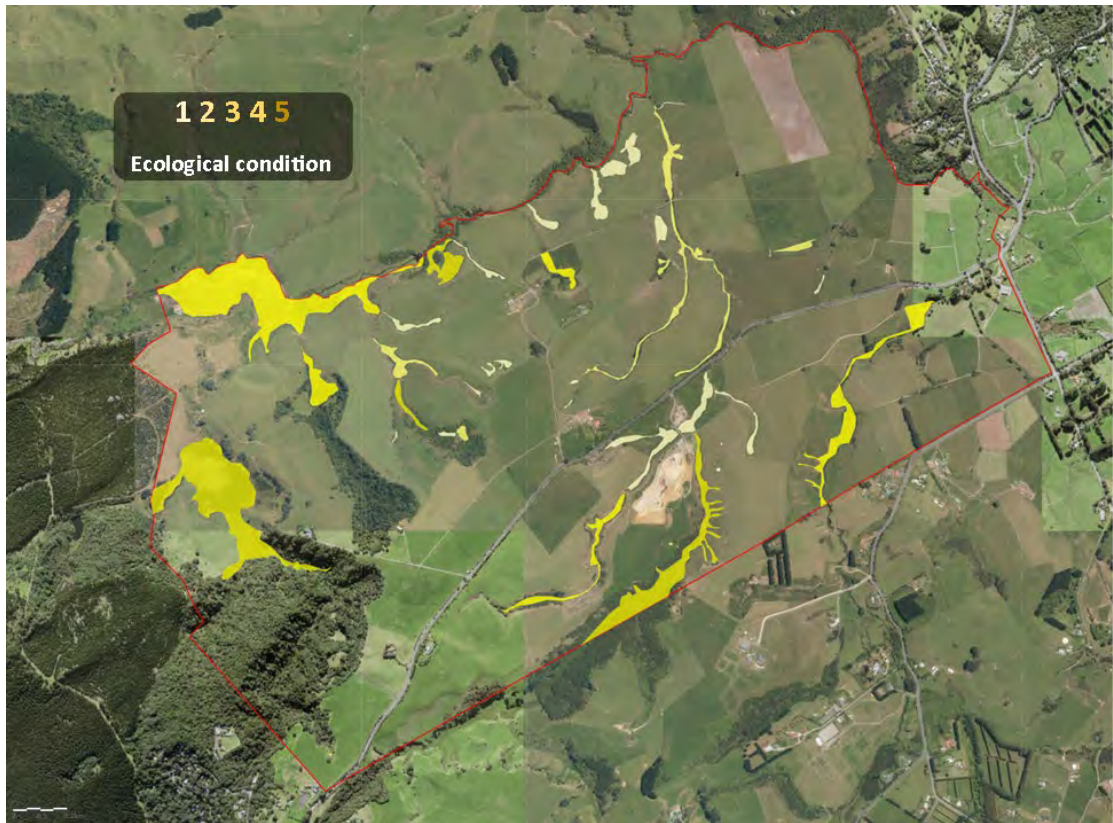


Figure 27: Wetlands and ecological conditions (1-Very poor, 2- Poor, 3- Moderate, 4- Good, 5- Very good)



Figure 28: An example of a wetland in ‘poor’ ecological condition.



Figure 29: An example of a wetland in ‘moderate’ ecological condition.

There are four wetland types on the Property as described in the Water Effects Summary Report and Ecology Report:

- Type-1 or Palustrine wetlands – These are inland, non-tidal wetlands found outside the saline margin in low-lying coastal floodplains. The Ōkiritoto Wetland, the largest wetland on the Property, extending along Ōkiritoto Stream from the base of the Toroānui Falls at the north-western corner of the Property, is a palustrine wetland (Figure 27);
- Type-2 or Dune lake wetlands – Lake Ōkaihai is a dune lake wetland (Figure 30);
- Type-3 or Valley floor wetlands; and

- Type-4 wetland: These are wetlands typically found at the head of catchments or valley sides.



Figure 30: The northern branch of Lake Ōkaihau – a dune lake wetland

Wetland Water Quality

Due largely to higher levels of stock access to the Property’s wetlands, they generally have poorer water quality than streams within the Property. Nitrite-N concentrations and E. Coli counts are generally higher and more variable in wetlands as compared to streams, and Total Suspended Solids (TSS) concentrations are significantly higher in wetlands. Ammonia concentrations are generally similar, although wetlands exhibit slightly higher average and peak concentrations compared to streams.

Wetland Hydraulic Functioning

WWLA have developed a conceptual hydrogeologic model of the Property and its surrounds. The model highlights the following key concepts relating to the hydraulic functioning of the 4 types of wetlands found on the Property;

- Type-1 and Type-2 wetlands are predominantly supported by surface water flows.
- Type 3 wetlands are located within topographical lows and supported by a mixture of surface water and groundwater seepages flows.
- Type 4 wetlands are supported predominantly by groundwater seepages and are normally located on gully walls or slopes.

In terms of the hydraulic functioning of Type 4 wetlands, and to a lesser extent, Type-3 wetlands, the conceptual model also demonstrates that the Awhitu Sands unit plays a key role. This geological unit includes within it, various thin interspersed indurated sediment

layers (or “pans”) which are generally oriented horizontally and often “day light” at gully walls. These impermeable layers restrict vertical flow of groundwater, and as a result, promote horizontal interface drainage that manifests at the ground surface as “perched” valley wall seepages. These seepages sustain the presence of Type-4 wetlands and partially sustain Type-3 wetlands.

The above concepts are illustrated diagrammatically in the conceptual model cross section provided in Figure 31.

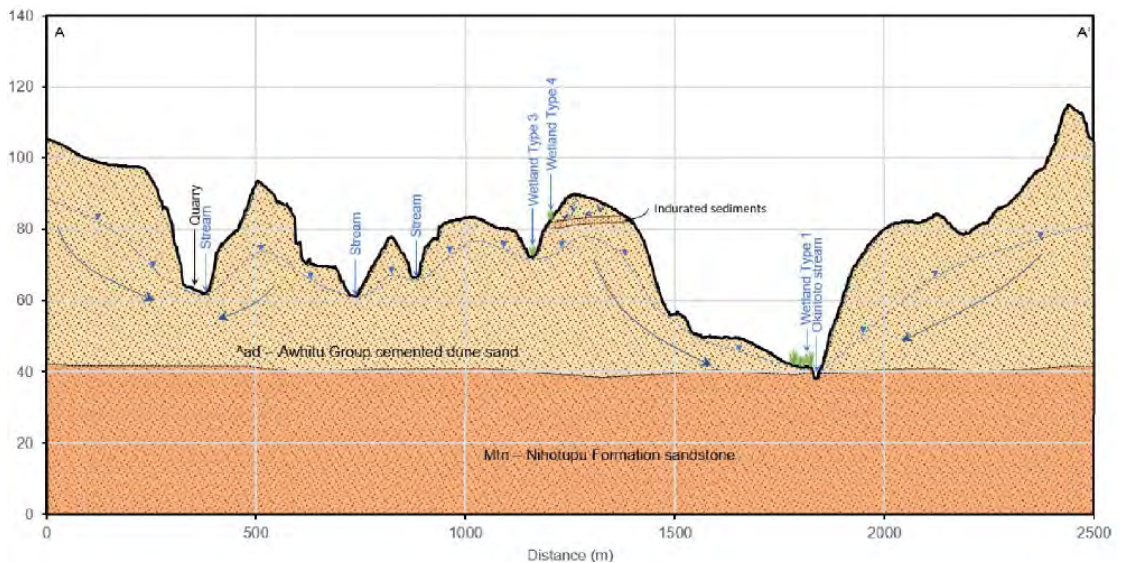


Figure 31: Muriwai Downs Conceptual Hydrogeologic Model – Typical Southwest-Northeast Cross Section.

2.11.3 Fish

The New Zealand Freshwater Fish Database (NZFFD) contains records of six species of fish from the catchment (including one exotic species), of which four are listed as ‘At Risk’ in the latest threat classification (Dunn et al., 2018).

In addition to the NZFFD, other fish species recorded in the Raurataua Stream catchment include the ‘Not Threatened’ banded kokopu (*Galaxias fasciatus*), as well as the exotic pest fish Koi carp (*Cyprinus carpio*) observed in the Toroānui Falls plunge pool. Other exotic pest fish include rudd, previously recorded in Lake Ōkaihau, and mosquito fish (*Gambusia affinis*) which are abundant in sluggish water. While of poor ecological condition, Lake Ōkaihau provides habitat for numerous native freshwater fish (e.g. shortfin eel *Anguilla australis*),

Most native species recorded in the catchment spend portions of their life cycles partially in fresh water and partially in salt water, however, it is possible that Toroānui Falls prevents some downward migration enabling resident longfin eels to grow to large sizes as they are trapped in the stream section behind the falls.

This is supported by the results of surveys undertaken on the reach of Raurataua Stream upstream of Toroanui Falls, which indicate this part of the stream system is healthy and supports native fish including longfin eel and banded kokopu.

2.11.4. Terrestrial Vegetation

In general, terrestrial vegetation on the Property includes large areas of native forest within gullies and next to streams, mature native trees within pasture grassland, exotic shelter belts, amenity plantings around dwellings, and an area of tree lupin (*Lupinus arboreus*) scrub in the north-western corner of the Site (refer orange shaded area in Figure 33).

Currently, weed infestations are restricted to discrete patches, and predominantly include tree lupin, gorse (*Ulex europaeus*) and woolly nightshade (*Solanum mauritianum*).

Eighty native species recorded on Site are listed as 'Not Threatened', and five species are listed as either 'At Risk' or 'Threatened' in the most recent threat classification list (de Lange et al. 2018). This includes several small stands of 'At Risk -Declining' manuka (*Leptospermum scoparium var. scoparium*), large areas of 'Threatened – Nationally Vulnerable' kauri (*Agathis australis*) within SEAs and individual trees within open pasture, several stands of 'Threatened – Nationally Vulnerable' pohutukawa (*Metrosideros excelsa*) and 'Threatened – Nationally Vulnerable' young kanuka (*Kunzea robusta*), as well as white rata 'Threatened – Nationally Vulnerable' *Metrosideros perforata*.

Of the 114 species recorded across the Property, 20 were environmental pest plants (ecological weeds), 14 of which are listed in the Regional Pest Management Plan (2020-2030) as 'Sustained Control – Whole Region'.

There are native forest remnants on the Property which comprise a diverse multi-tiered assemblage of coastal kauri-broadleaved forest (Figure 32).



Figure 32: An example of diverse, multi-tier indigenous forest (SEA T 5525)

There are eight SEAs, covering approximately 77.3 ha of the Property. A summary of these is provided in Table 8 and their locations are shown on Figure 33.

Table 8: Summary of SEAs within the Site.

Label	Area	Ecological feature	SEA criteria met
SEA (not numbered)	29,413 m ²	Native forest	1, 2
SEA T 2763	3,914 m ²	Forest riparian margin and wetland	1, 2
SEA T 5524	358,334 m ²	Native forest	1, 2, 3, 4, 5
SEA T 5525	107,637 m ²	Native forest	1, 2, 3
SEA T 5527	81,972 m ²	Lake Ōkaihau	2, 4
SEA T 5482	61,583 m ²	Native forest	3, 4
SEA T 6575	124,335 m ²	Wetland	1, 2, 3, 4
SEA T 6730	6,233 m ²	Native forest	1, 2

Label	Area	Ecological feature	SEA criteria met
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Total	77.3 ha		
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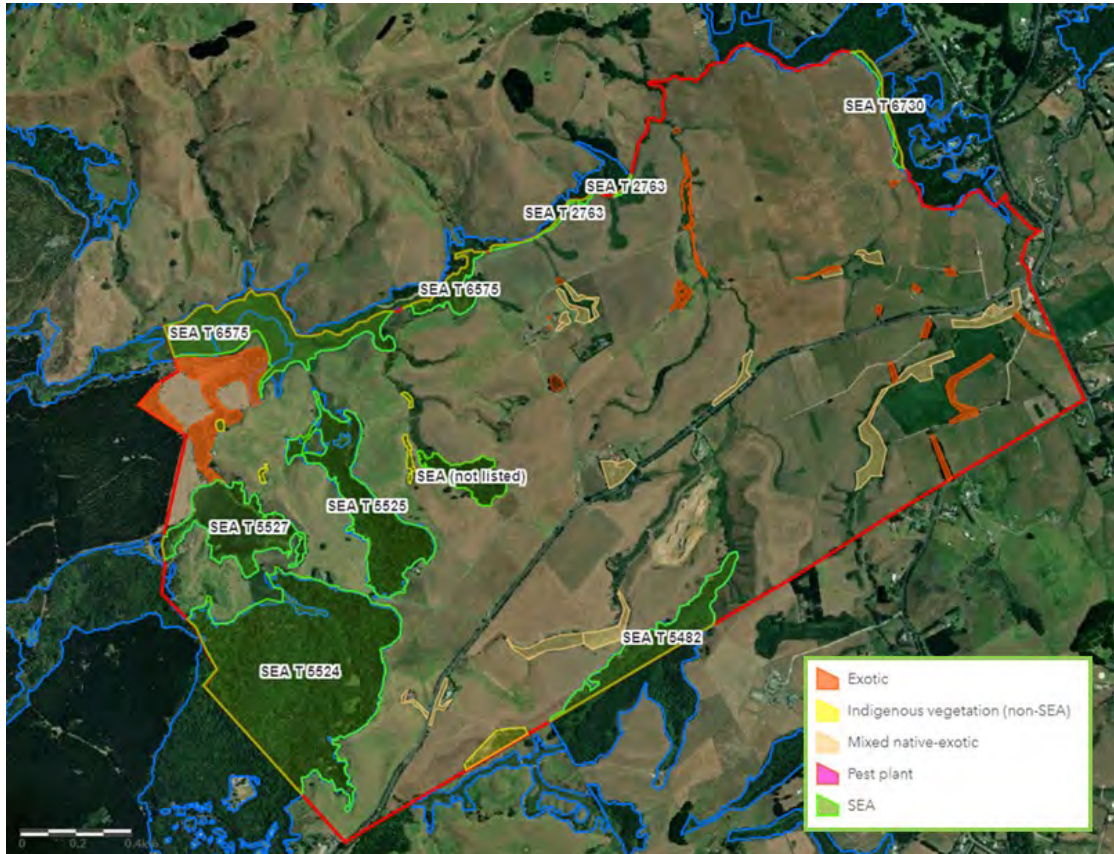


Figure 33: Vegetation communities. Blue areas outside beyond the Property are the continuation of SEAs in the surrounding landscape. Areas not coloured are dominated by exotic pasture grasses for pastoral grazing or by crops or are wetlands.

Kauri and Mature Native Species

Kauri trees (*Agathis australis*) are present in relatively high numbers at the Site, occurring predominantly on the edges of SEA 5524 and SEA 5525 and the SEA not listed (Figures 33 and 34). Kauri on the Site have been mapped and are shown on Figure 35.

Kauri dieback is evident on Site. Specimens show a range of infection severity, from cursory signs through to dying or dead.

Drip lines are estimated to be up to 20 m for the largest trees, and on average 9.5 m.

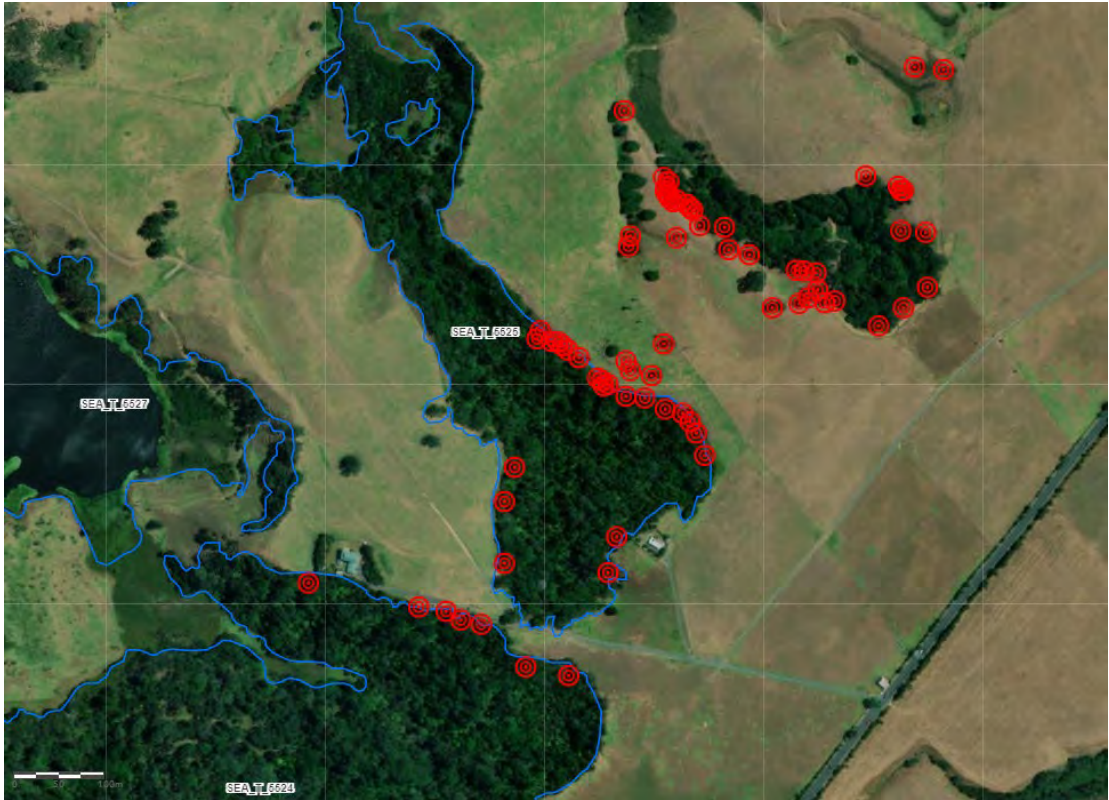


Figure 34: Kauri (red circles) recorded within and adjacent to SEA 5524 and SEA 5525 and the SEA not listed.

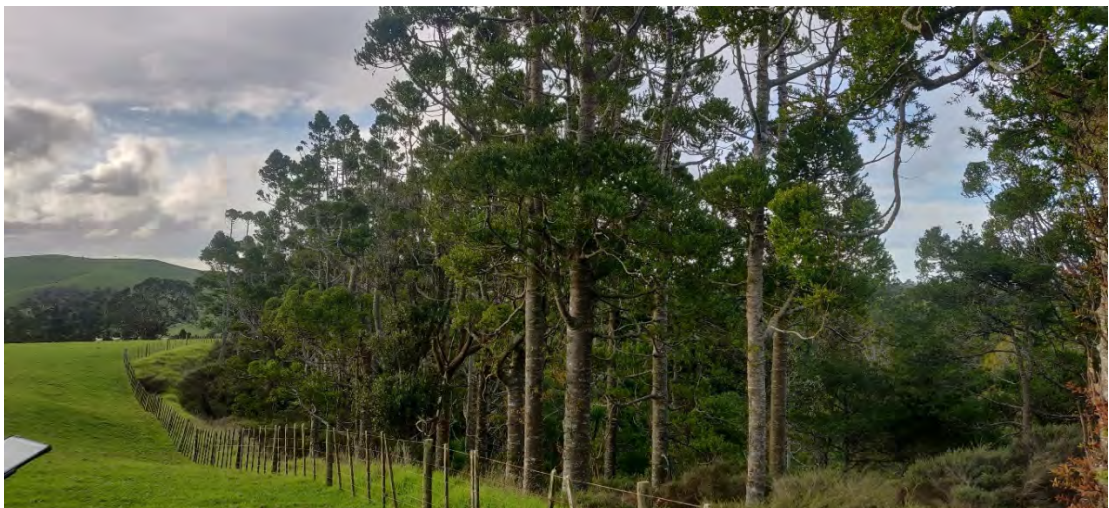


Figure 35: Kauri Forest (Fenced edge of SEA 5525).

Other mature native tree species are observed outside of SEAs within farm paddocks including Pohutukawa, Kauri, Totara and others. An example area showing typical densities of these is illustrated in Figure 36.

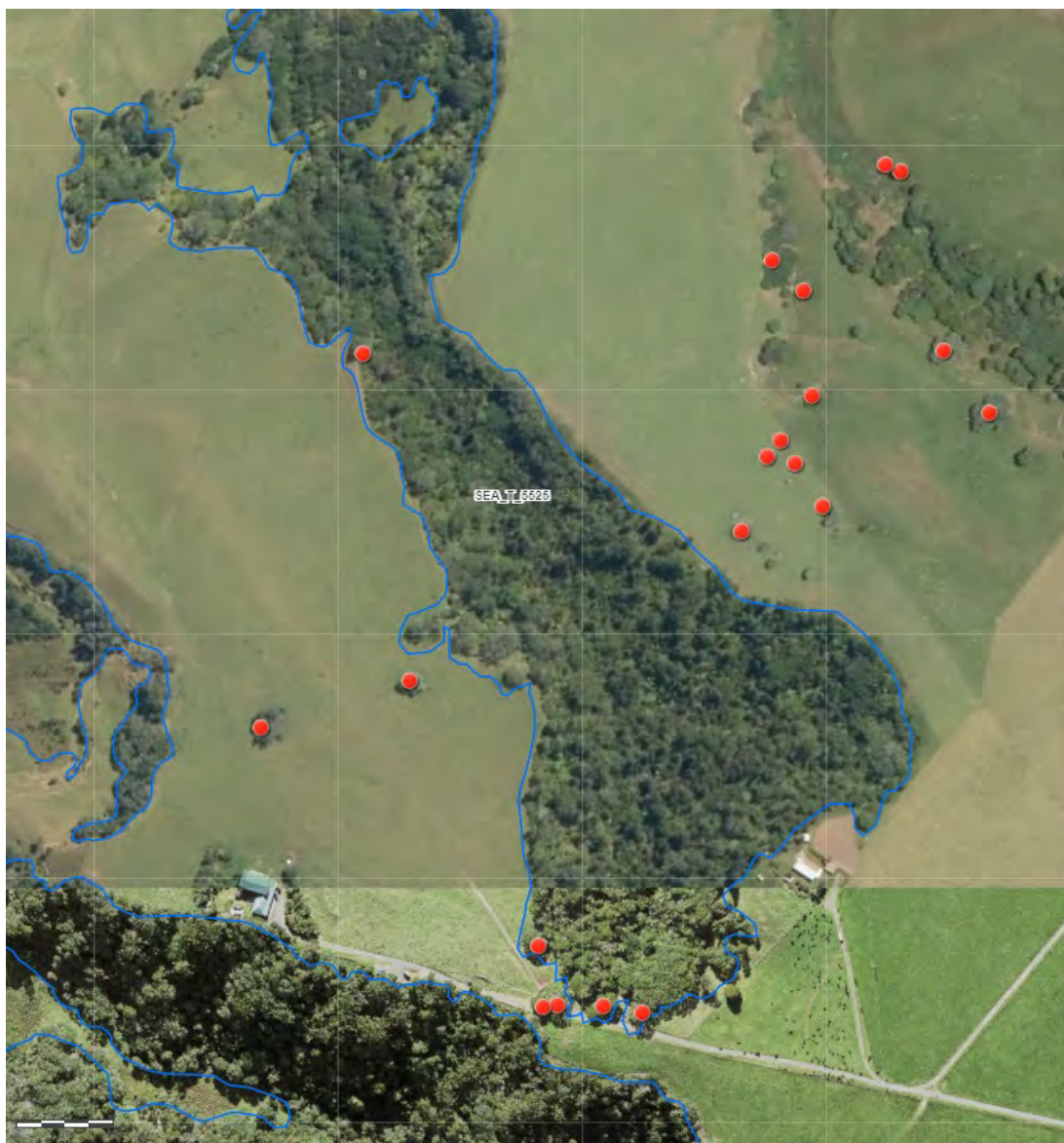


Figure 36: Mature Native Trees within pasture surrounding SEA T 5525.

2.11.5 Lizards

Results of lizard surveys undertaken over the Site are presented in the Ecology Report (Appendix 11). In summary, the surveys recorded one exotic lizard species, the plague skink (*Lampropholis delicata*). This species of skink were found to be well distributed across the Property, particularly within paddocks, shelterbelts, riparian margins, and house and garden amenity areas.

Although none were found during the surveys, Copper skinks are most likely present in lower numbers and in a narrower subset of habitats including areas of rank grass, and thick weedy vegetation surrounding the edges of the wetlands, as well as thick riparian vegetation.

The Department of Conservation's national lizard, frog and tuatara database (the National Herpetofauna database) confirms records of native lizards within 1 km of the Property, including the 'At Risk' species ornate skink (*Oligosoma ornatum*) and elegant gecko (*Naultinus elegans*). None of these species were found by during surveys around the Property.

2.11.6 Birds

A fulsome list of bird species observed during surveys undertaken across the Site is provided in the Ecology Report (Appendix 11). In summary, 26 bird species were recorded, including 15 native species, one of which, the black shag (*Phalacrocorax carbo*), is classified as 'At Risk- Naturally Uncommon'.

A single black shag was recorded roosting on mature eucalyptus trees adjacent to Lake Ōkaihau. Waterfowl utilising Lake Ōkaihau include black swan, mallard, Canada goose and paradise shelduck.

There are many records of pipit from various beach areas along the coastline at Muriwai, Te Henga, Anawhata, Piha, Karekare and Whatipu, however, there are none in inland areas of farmland or bushland. Similarly, no pipit were seen during surveys of the Site in July, and none were seen during other Site visits over the 2020-2021 summer when pipit should have been visible and easily detectable.

While there are records of grey-faced petrel breeding at Muriwai, this species and other petrels, prions and shearwaters are unlikely to breed at Muriwai Downs because either insufficient habitat exists, the habitat is not located on coastal margins, or the history of the Site as a farm with long-term introduced predator presence makes the presence of burrowing seabirds extremely unlikely.

2.11.7 Long-tailed Bats

Long-tailed bats / pekapeka (*Chalinolobus tuberculatus*), are currently classified 'nationally vulnerable' (O'Donnell et al., 2011).

The closest confirmed record of long-tailed bat is 3.5 km to the south of the Site, in the Waitakere Forest Park.

The Property supports some characteristics preferred by bats, (e.g. mature native trees along watercourses, old pine trees). No bat surveys have yet been undertaken on the Property, but given the nature of some of the habitat present, it is possible that a resident long-tailed bat population could utilise parts of the Site (e.g. with mature trees), if only to transit through the Site.

2.12 ARCHAEOLOGY

CFG Heritage have catalogued and documented all recorded archaeological Sites and other Sites of potential archaeological value on the Property (Appendix 14). Locations of these Sites are shown in Figure 37 and information relating to each is summarised further below.



Figure 37: Locations of recorded NZAA and CHI Sites within the Muriwai Downs Property.

Q11/67 Pits and terrace

There are two pits located at this Site. The southern pit is amorphous while the second pit is more regular in form. The pits are both overgrown with long grass and manuka is growing in and around them.

Q11/68 Pits

This Site also comprises two pits located in pasture.

Q11/70 Midden

This Site is recorded as a midden and a potential pit above exposed boulders on the steep eastern bank of a side creek south of Toroānui Falls.

Q11/71 Rock carving

This Site is a stone carving of a face located on a steep rock face over a small waterfall.

Q11/380 Foster's Flax Mill

The location of an historic flax mill is on the southern bank of Ōkiritoto Stream near Ōkiritoto Falls. The mill dates to the 1870s.

Q11/615 Houghton's quarry

Houghton's quarry is a small disused farm quarry that took advantage of the underlying volcanic rock present near the ground surface. A belt driven rock crusher still sits above the eastern bank of the quarry.

CHI 1220 Ingram's Boarding House

Ingram's boarding house was built around 1900 and demolished in the late 1930s or 1940s. The physical remains are not currently visible.

CHI 1285 Houghton's farm shed

Houghton's farm shed was recorded as being close to Muriwai Beach Road but has since been demolished. Debris of the shed remain.

Q11/ 614 Old house (new Site)

This Site is a dilapidated cottage located near to the farm's woolshed. The building is most likely a 20th century building so is not considered an archaeological Site but is recorded in the Archaeology Report for completeness.

2.13 POTENTIALLY CONTAMINATED SOILS

Pattle Delamore Partners (PDP) have undertaken a preliminary Site investigation (PSI) and a detailed Site investigation (DSI) for the Muriwai Downs Property. Copies of the PSI and DSI Reports are provided in Appendix 6. A summary of key findings is presented below.

Information gathered during the PSI highlighted the following historical activities and areas of the Property linked to potential ground contamination:

- General farm and agricultural land use;
- Farm workshop and storage area;
- Woolshed, yards and sheep dip;
- Other previous and existing buildings; and
- Quarry.

Associated ground contamination risks comprised discrete, localised areas immediately surrounding the source feature rather than representing broad, extensive areas of potentially impacted soils (such as entire paddocks/fields). A DSI was limited to areas identified in the PSI that overlapped proposed earthworks and soil disturbance activities. These areas (HAIL Areas¹³) are shown in Figure 38. They included:

- The Site of the former Ingram's boarding house near Lake Ōkaihau (CHI 1220);
- Sheep dip and woolshed area;
- An area of historical kumara cropping near Muriwai Road; and
- An area near the entrance to 614 Muriwai Road used for storing untreated timber.

¹³ Hazardous Activities and Industries List.



Figure 38: Areas where soils were sampled and analysed for contaminants

Key observations from the DSI included:

General

- All analysed soil samples from the Site have concentrations of contaminants of potential concern that are below the AUP Permitted Activity soil acceptance criteria.

Historical Kumara Crop Area

- All seven composite samples combined from soil samples collected from 28 locations within the Historical Kumara Crops area did not detect any organochlorine pesticides and have concentrations of metals that are below the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) Soil Contaminant Standards (SCS) for recreational land use and the published background concentration of non-volcanic soils in the Auckland region.

Former Ingram’s Boarding House and Sheep Spray Shower & Woolshed

- Three of the 33 analysed surface soil samples collected from the Former Boarding House and Sheep Spray Shower & Woolshed areas have concentrations of arsenic, copper, lead and/or zinc that exceed the published background concentrations of non-volcanic soils in the Auckland region but below the NESCS SCS for recreational land use.

- Dieldrin was also detected in one surface soil sample collected from one of the holding/draining pens at the Sheep Spray Shower & Woolshed area at a concentration below the NESCS for recreational land use.

Treated Timber Storage area

- Half the analysed surface soil samples collected from 12 locations within the Treated Timber Storage area have concentrations of arsenic, chromium, copper, lead and/or zinc that exceed the published background concentrations of non-volcanic soils in the Auckland region but are below the NESCS SCS for recreational land use.
- Various compounds of polycyclic aromatic hydrocarbons (PAHS) were also detected in two of these surface soil samples but were at concentrations below the NESCS SCS for recreational land use.
- One analysed surface soil sample has a concentration of arsenic (94 mg/kg) that exceeds the NESCS SCS for recreational land use (80 mg/kg) and the published background concentrations of non-volcanic soils in the Auckland region (12 mg/kg).

2.14 TRAFFIC ENVIRONMENT

The existing traffic and roading environment is fully described in the ITA provided in Appendix 16. A summary of key related aspects is provided below.

2.14.1 Roads

The Site is located on Muriwai Road, which is classified as an arterial road within the AUP. Muriwai Road connects SH16 to Muriwai village.

Adjacent to the Site, Muriwai Road comprises a single traffic lane in each direction and is typical of a rural arterial road in this area. It is sealed throughout its length and has a posted speed limit past the Site of 100 km/hr.

2.14.2 Traffic Volumes

Auckland Transport traffic count data for Muriwai Road, between Valley Road and Oaia Road (near No 451), recorded a 5-day Average Daily Trip (ADT) count of 3,451 vehicles per day (vpd) and AM and PM peak hour volumes of 357vph and 618vph, respectively. The traffic count was recorded in June 2018.

On-Site observations indicate this section of Muriwai Road currently operates well.

2.14.3 Access and Vehicle Crossings

Locations of existing vehicle crossings at the Property are identified in Figure 39.



Figure 39: Existing Muriwai Rd Vehicle Crossings

2.14.4 Road Safety

An assessment of the surrounding area's road safety record has been undertaken using the NZTA's CAS database. Crash records for the five-year period 2015 - 2019 including all available records for 2020, have been assessed for an area near the Property, including Muriwai Road along its length. A total of 17 crashes were recorded within this crash area.

The majority of crashes were loss of control crashes. No crashes involving turning in or out of driveways have been recorded.

2.15 OTHER SITE INFRASTRUCTURE

There is no municipal wastewater or stormwater reticulation systems within or adjacent to the Property. There is also no public water supply available.

Electricity is supplied to the Property via Vector's local network and telecommunications and fibre internet connections are also present.

A disused sub-surface telecommunications cable runs in an east-west direction through the Property. The location of this cable is denoted by ground surface marker poles along its alignment. The cable was previously owned and operated by Spark NZ, however, it is now redundant and not required. Easements relating to this cable have been removed from the relevant land titles.

2.16 NOISE ENVIRONMENT

The ambient noise environment within and surrounding the Property would be typical for a rural environment that is relatively close to a rural road¹⁴.

2.17 COMMUNITY SETTING

Muriwai Beach is the closest settlement to the Property. It has a permanent population of 1,104¹⁵, although because the township includes a number of holiday homes, its population swells during public holiday periods, particularly over the summer.

The Applicant understands residents are strongly connected with a number of active community forums and groups in operation locally. These include such organisations such as:

- The Muriwai Community Association;
- Muriwai Golf Club; and
- Muriwai Surf Club.

All these groups contribute positively to the health of the local community and environment. Residents also receive a regular (2-monthly) community newsletter (“The Gannet”) which assists in connecting the community with local activities, events and issues.

The local area provides significant opportunities for the local community and other visitors to enjoy a number of public amenity areas and recreation activities, including:

- Muriwai Beach - a particularly popular beach for local and regional surfers;
- Muriwai Regional Park - which includes the existing Muriwai Golf Course and provides a number of public walking tracks;

¹⁴ Noise Report (Appendix 15)

¹⁵ Stats NZ - 2018 Census

- The Muriwai Gannet Colony; and
- Woodhill Forest Park - which provides public access in designated areas of the forest for a wide range of recreational activities including; horse-riding, mountain biking, tree climbing, paintball, 4 wheel driving and off-road motorcycling.

Muriwai Beach offers very little in terms of commercial services and retail activity (e.g. cafés, restaurants, shops and hotel accommodation). These functions are instead predominantly served by neighbouring towns and the wider Auckland area.

2.18 PUBLIC ACCESS

There is currently no legal access provided to the general public onto or over the Muriwai Downs Property including the Ōkiritoto falls, Toroānui falls and Lake Ōkaihau.

Informal access to Lake Ōkaihau is provided to a local waka ama crew that accesses the lake from Ngati Whatua ō Kaipara's forestry land to the west.

The Applicant understands that some time ago the previous landowner is understood to have allowed informal public access to Lake Ōkaihau by foot from Grass Track Road and also allowed people to walk along Ōkiritoto / Raurataua Stream to reach the Toroānui Falls. However, due to Property damage and theft, access to these parts of the Property was firstly discouraged and eventually stopped by the previous landowner.

2.19 SUMMARY

The wider environment surrounding the Muriwai Downs Property comprises a mix of pastoral land, lifestyle blocks, bush blocks and production forestry land uses. Surrounding land is rich with Sites and resources of cultural significance to local iwi and topographically occurs as undulating hills and small gullies. A large, elevated ridge to the north acts to enclose northern parts of the Property that slope from Muriwai Road down to the Ōkiritoto stream. This results in very few publicly accessible viewing points of this part of the Property.

The Property itself is a large dairy and dry-stock farm containing a number of farm dwellings and buildings and an operating sandstone quarry. Higher production soils located more towards the eastern part of the Property have been used to support more intensive dairy farming activities while the balance is grazed by sheep and cattle. These farming activities give the Property a rural character. The Property also possesses a large variety of unique natural features and resources that connect with and/or sit alongside farming. Although, historical clearing of native forest, land drainage and pastoral farming

activities have, over preceding decades, adversely impacted the quality and extent of these natural resources (e.g. natural wetlands), the Property still has a number of natural features intact.

Water is another strong feature of the existing environment at the Property. The various streams, the two waterfalls, and Lake Ōkaihau, accentuate this aquatic theme. These water features are all culturally important to Mana Whenua. Although the quality of water within these surface water bodies is somewhat degraded, groundwater quality beneath the Property is high, and available supplies of both surface and groundwater are plentiful.

3. PROJECT DESCRIPTION

To provide context on how the Project was developed to this point, the first part of this section sets out some of the key activities and processes used during the Project's design and overall development. The remainder of this section sets out summary descriptions of the individual Project components. Additional description details can be found within relevant technical and design reports appended to this AEE. These are referenced within the text as appropriate. At the end of this section a number of summary tables are also presented. These provide the Project's key parameters and data for ease of reference. They also define the Project's maximum envelope for consenting and effects assessment purposes discussed later in Section 5.

3.1 PROJECT DEVELOPMENT PROCESSES

3.1.1 General

The Applicant's vision for this Project involves a number of highly specialised components, all located on a relatively large area of land that, because of its special features, presented a number of technical, environmental and cultural challenges and opportunities from a design perspective. To overcome these challenges and capitalise on the features of the Site, the Project has required an integrated, highly collaborative and staged Project development approach. This process involved a wide range of technical experts, advisors and support personnel.

In summary, the development of this Project has entailed the following key activities undertaken over a period of approximately 20 months:

- Golf feasibility studies;
- Environmental constraints analyses covering geotechnical, ecological, archaeological and landscape limitations of the Property;
- Golf course, Site layout and built environment design;
- Water supply studies;
- Physical design refinements; and
- Construction and operational design.

3.1.2 Golf Feasibility Studies

Following the purchase of the Muriwai Downs Property, the Applicant engaged Golf Strategy Group ("GSG") to initially assess the Site's feasibility for golf. GSG is a NZ based



business with particular expertise and experience in the area of golf course design, golf facility operation and golf related tourism.

The purpose of this initial Site assessment was to determine whether the Site met, or was able to meet, a number of key attributes necessary for the feasible development of a marquee golf course as previously defined in Section 1 of this AEE. Other Site attributes required for marquee golf courses are:

- Unique or high-quality natural features that provide opportunities for golfers to immerse themselves in different or unique natural environments;
- Appropriate topography and soils; and
- Reliable and sufficient supply of freshwater.

GSG's initial assessment work concluded that, provided certain operational requirements could be addressed (e.g. water supply), the north-western and north-central parts of the Property had a number of inherent attributes and natural features that made it an excellent Marquee Golf Course prospect.

3.1.3 Key Design Criteria

To inform and support the design of the golf course and the wider Project, a comprehensive suite of Site background studies were commissioned early on in the Project's development. These studies included, statutory planning constraint assessments, landscape character studies, an historical and archaeological Site assessment, traffic and access studies and ecological studies (including natural wetland mapping).

The findings from these initial studies not only provided the golf course architect (Kyle Phillips Golf Course Design) with valuable Site context and familiarity prior to entering New Zealand, they also informed the development of important design criteria and design / development constraints. Environmental constraints and design criteria developed for the Project included the following:

- Avoiding earthworks or structures within any natural wetland and in Lake Ōkaihou;
- Specifying maximum cut depths to protect groundwater flows responsible for supporting some types of wetlands on the Site¹⁶;
- Avoiding any water takes from Lake Ōkaihou;

¹⁶ Water Effects Summary Report (Appendix 10)

- Minimising changes to sub-catchment sizes;
- Minimising removal of indigenous vegetation;
- Avoiding damage or destruction of Sites of cultural significance;
- Where possible, minimising visibility of buildings; and
- Ensuring Site access locations were efficient and safe.

3.1.4 Golf Course and Concept Site Layout Design Process

The main challenge associated with designing the golf course routing, or flow of golf around the Site, is that adjustment of one part of the course produces knock on effects for all other parts that follow and precede. The design statement provided by the golf course architect, Kyle Philips Golf Course Designers Ltd, (“KPGCD”) (Appendix 23) explains this design challenge (and others) in more detail. In summary, while it was obvious that to achieve the objective of designing a course of international significance and stature would necessitate utilising the north-western corner of the Property, the combination of wetland considerations and native vegetation areas presented both opportunities and dilemmas. The task for KPGCD was to integrate these natural features into the design so that golfers would be able to engage with and appreciate them, all while abiding by the various environmental constraints and design criteria set by the Project to protect them. This all meant that the routing of the course becomes the imperative in achieving the optimal outcome.

Consideration also had to be given to achieving “playability”. That is, ensuring the golf holes rotate around the Property in a manner that makes the journey itself intriguing while also achieving the practical golf playing outcomes necessary. In addition, various other design elements generally expected of needed to be incorporated into the design. These include:

- Avoiding a series of holes that play in the same direction or that play back and forth in opposite directions;
- Balancing the challenge of each side of the course along with a balance of short (par 3’s) and long (par 5’s) holes;
- Having these short and long holes play in differing directions (so the effects of wind and sunlight vary);
- Achieving a returning nine hole design, where the course returns to the Clubhouse halfway through the round;
- Generally being able to see the surface of the green when approaching it;

- Avoiding a starting hole facing east (into the rising sun) and a finishing hole facing west (into the sunset);
- Not overly favouring any one particular shot-shape; and
- Including a 19th hole to enable a full round of 18 holes to be played even if one of the holes needed to be temporarily taken out of service for maintenance.

Despite the myriad of design requirements, KPGCD eventually developed a golf routing plan that met all necessary criteria. This became the basis for the concept master plan layout presented below in Figure 40.

3.1.5 Design refinements

Subsequent to the initial routing and layout plan being developed, significant additional design work continued in an ongoing effort to refine and improve the golf course and optimise ecological outcomes. These processes have resulted in a number of positive environmental improvements to the original design, including:

- avoiding various high value tree specimens;
- reducing earthwork areas, including those in root zones and kauri die-back buffer areas; and
- reducing vegetation removal or trimming, including in SEA areas.

3.2 LAYOUT

Figure 40 shows the layout for the Project as summarised earlier in Section 1.

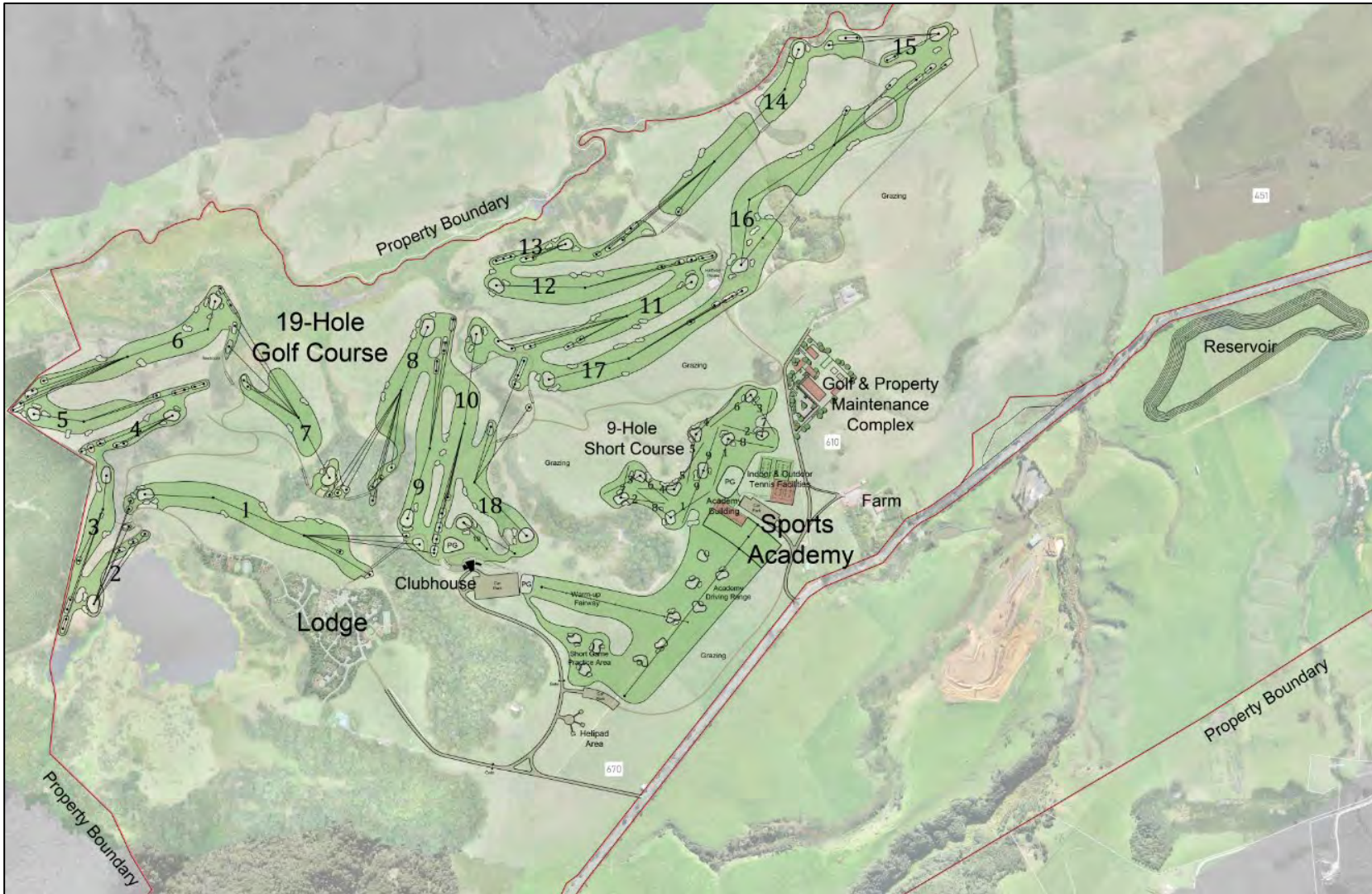


Figure 40: Site Layout

3.3 GOLF COURSE DESCRIPTION

3.31 Overview

The proposed international, Marquee Golf Course comprises the following features;

- 19-holes of golf each comprising:
- multiple tee location options;
- a main fairway;
- primary and secondary rough areas;
- a green; and
- bunkers;
- Two practice greens;
- A warm-up fairway;
- A short game practice area;
- Various tracks and paths;
- Bridge structures;
- A stream bed culvert structure (and associated rip-rap) and infilling of a 16m length of an intermittent stream;
- Drainage infrastructure;
- Irrigation infrastructure; and
- Two restroom and rain shelter areas.

3.3.2 19 Hole Golf Course Description

The golf course routing plan is shown in Figure 40. Summary descriptions of its main components are presented below. Pictorial examples are also shown in Figure (i) of the Nomenclature list provided in Part A of the AEE.

Tees

These are slightly built-up areas where the first golf shots are made on each hole.

Fairways

These are the main playing areas of each golf hole between the tees and the greens.



Primary and secondary / naturalised rough areas

The primary rough is simply an extension of the fairways but mown slightly higher. The secondary rough is a naturalised area off the intended golf playing route that usually draws a penalty for wayward shots.

Greens

The green is a smooth grassy area at the end of a golf fairway containing the flagstick and the hole that players putt the ball into. Greens possess highly refined contouring and are a particularly delicate area on the golf course.

Bunkers

Bunkers will be built and shaped into the newly created landforms, their exact location, size and shape strongly influence the strategy and look of each golf hole.

Tracks and Paths

Tracks and paths will provide all weather access across the golf course. They are required to eliminate damage to turf in areas of high golf cart use and maintenance vehicle traffic. Indicative locations of tracks and paths is shown in Figure 41. Some paths may take the form of a boardwalk to minimise impacts on existing vegetation. Where these occur in close proximity to a wetland (e.g. hole 8), they are considered wetland utility structures under the NESFW.

Tracks and paths around the proposed golf course will be constructed from a range of materials, but most likely dark coloured concrete, blacktop, chip seal or similar sealed surface

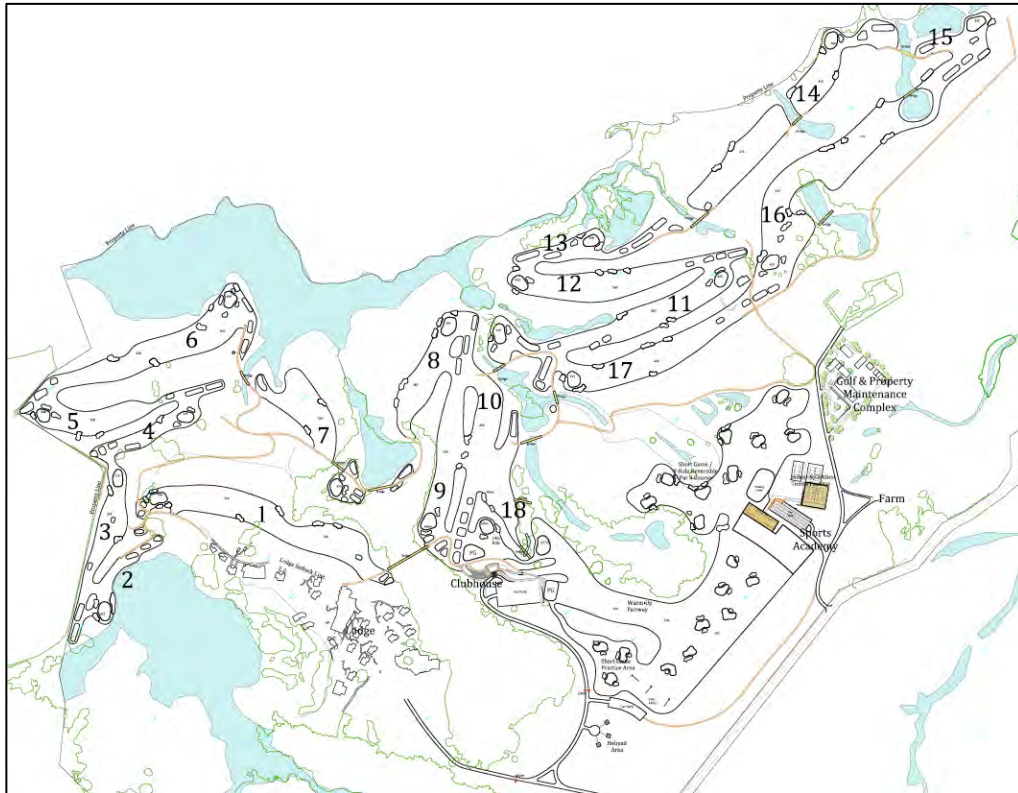


Figure 41: Indicative locations of tracks and paths (denoted by brown lines)

Bridges

A total of 13 bridges are required over streams, wetlands and gully areas within the golf course to provide safe and efficient access around the course for golfers and maintenance staff and to protect significant ecological features. Indicative locations of bridges are shown in Figure 40. Additional details on indicative bridge locations and preliminary alignments are presented as a series of drawings within the Infrastructure Engineering Report (Appendix 5).

Ten of the 13 proposed bridges span over natural wetland areas and are considered NESFW wetland utility structures. All bridge abutments will sit outside natural wetland areas and no bridge piles are proposed within the bed of any stream.

Stream Culvert

A stream bed culvert structure is proposed in the bed of the stream dissecting the 14th fairway (refer Appendix 18 (Draft CEMP)). A bridge structure at this crossing location is not practical from a golf design perspective.

Restrooms / Rainshelters

A restroom and rain shelter structure is proposed near the 7th tee. Another on-course restroom and rain shelter structure will be located within the existing woolshed building near the 12th and 17th tees.

Drainage

Effective soil drainage is important for the long-term functionality of the golf course. It not only allows golfers to play during or shortly after periods of rainfall, but it helps to create a healthier growing environment for the turf.

The drainage system for the golf course will be developed at the detailed design stage. Drainage infrastructure is highly sophisticated and the key objective of the system design will be to ensure minimal net change in catchment runoff volume and drainage pathways between pre and post golf course construction.

Final drainage design plans will be developed prior to golf course construction. These will include detailed specifications for drainage pipe placement, depths, sizes, outlets and other construction details.

Installation of drainage system infrastructure will involve trenching to specific depths within each golf hole following bulk earthworks and topsoil respreading.

All drainage infrastructure will be documented using GPS during installation.

Irrigation Systems and Infrastructure

Irrigation system reliability and efficiency are critical elements to the success of any golf course. This is particularly so for a premium, Marquee Golf Course (such as the one proposed), where healthy and high-quality turf is expected by patrons.

The irrigation system for this Project will be confirmed at the detailed design stage. Again, irrigation systems for golf courses are highly sophisticated and enable highly targeted application of water. The irrigation system will be devised with water efficiency optimisation as the primary goal and will adopt standards and technology that meets industry best practice. Further information on irrigation design philosophy is provided in the Golf Course Construction, Operation and Maintenance Report (Appendix 3).

Final irrigation design plans will be available prior to golf course construction and will include detailed specifications for pumps, pipe routing plans, pipe sizes, valve and sprinkler locations and all electrical components.

Installation of the irrigation system will involve trenching to specific depths within each golf hole following bulk earthworks and topsoil respreading.

All installed irrigation infrastructure pipe depths and locations will be documented using GPS.

Audubon International

Audubon International provides an operational and environmental performance standards framework for golf course superintendents to implement, manage and record the environmental work they undertake.

The proposed golf course will be constructed and operated in accordance with Audubon International's Signature Sanctuary Program and associated standards. More information on the Signature Sanctuary Program is provided in Appendix 3 (Golf Course Construction, Operation and Maintenance Report).

3.3.3 Practice Greens, Warm-Up Fairway and Short-Game Practice Area

Two practice greens, a warm-up fairway and a short game practice area are also proposed. These areas will be used by golfers to practice their driving, chipping, pitching, sand play and putting and to loosen up before playing their golf round. They are not intended for longer practice sessions or receiving instruction. These areas do not require any buildings. The warm-up fairway will not include perimeter barrier structures or catch netting typical of traditional driving ranges around New Zealand.

3.4 BUILDINGS

The structural elements proposed as part of the Project include:

- Clubhouse complex;
- Sports Academy;
- GPMC; and
- Luxury Lodge accommodation buildings.

3.4.1 Clubhouse complex

The Clubhouse will serve as the operational and social hub of the Site. Its primary purpose is to provide a space of pre-round preparation and post-round relaxation for golfers, while ensuring an efficient and enjoyable golf experience can be delivered.

The Clubhouse will be located centrally within the Property as shown in Figure 40. Concept plans and visualisations of the Clubhouse are illustrated in Figures 41 to 45, and

additional architectural details and design statement information is provided in (Appendix 19) of this application¹⁷.

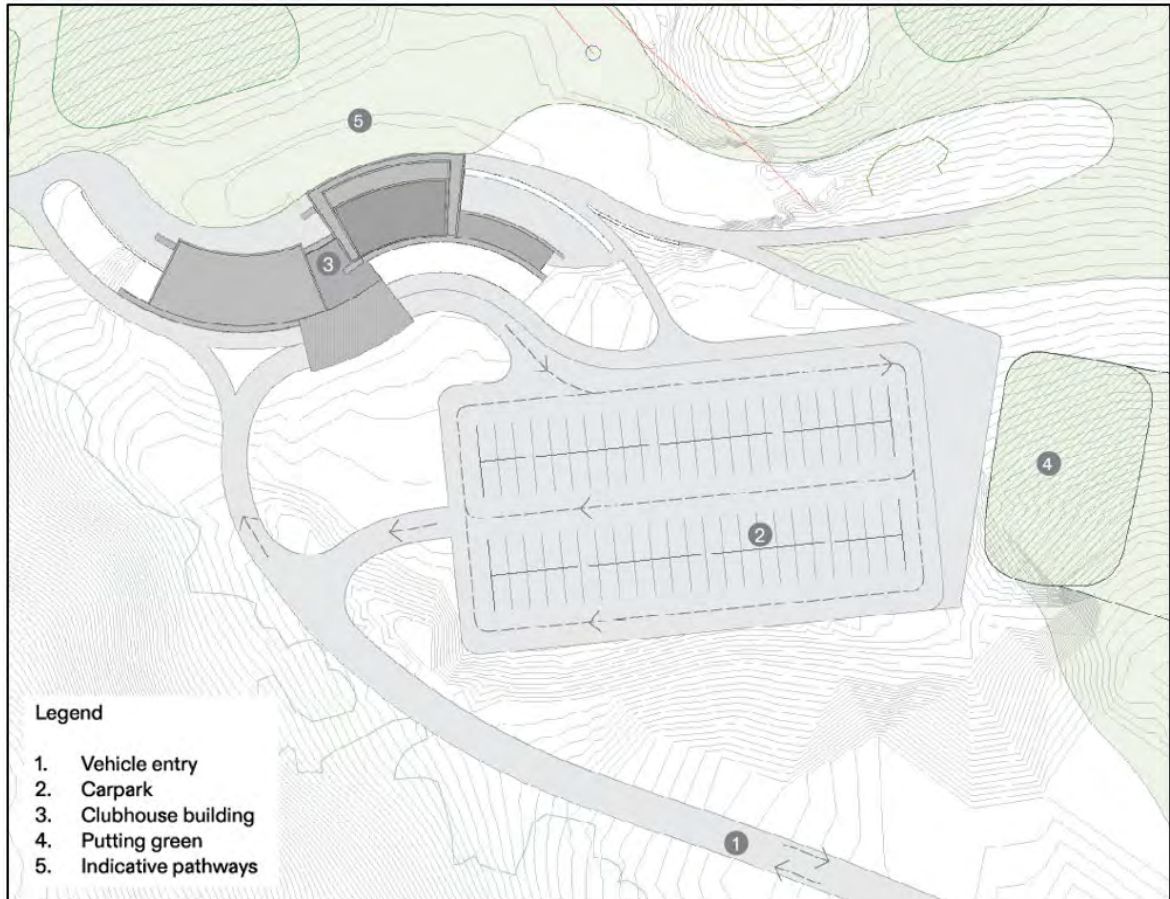


Figure 42: Proposed Clubhouse Layout Plan

¹⁷ All Clubhouse layout plan and elevation drawings presented are not yet final and subject to change within the envelope described in Table 13

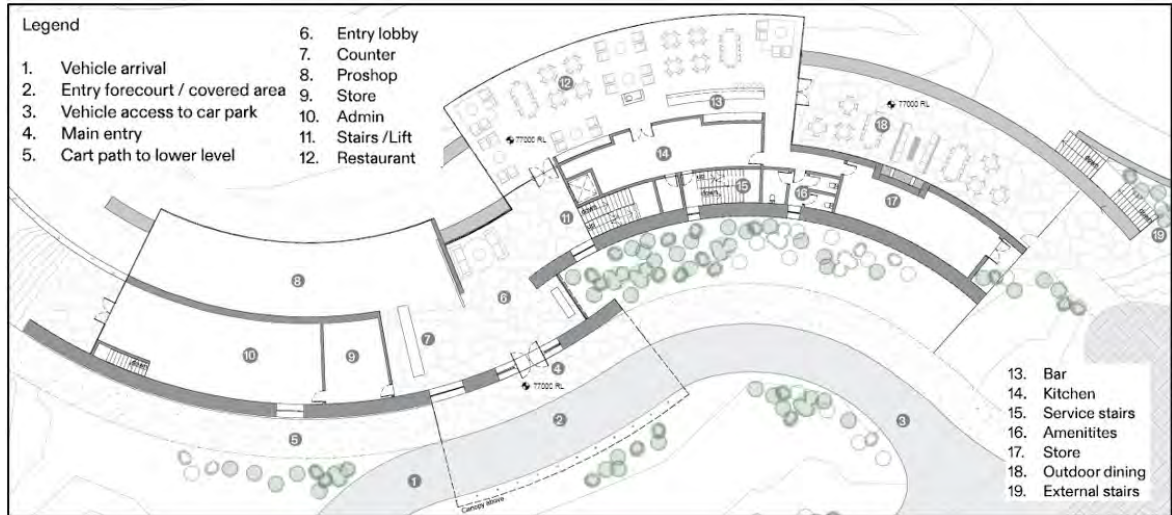


Figure 43: Proposed Clubhouse Entry Level Floor Plan

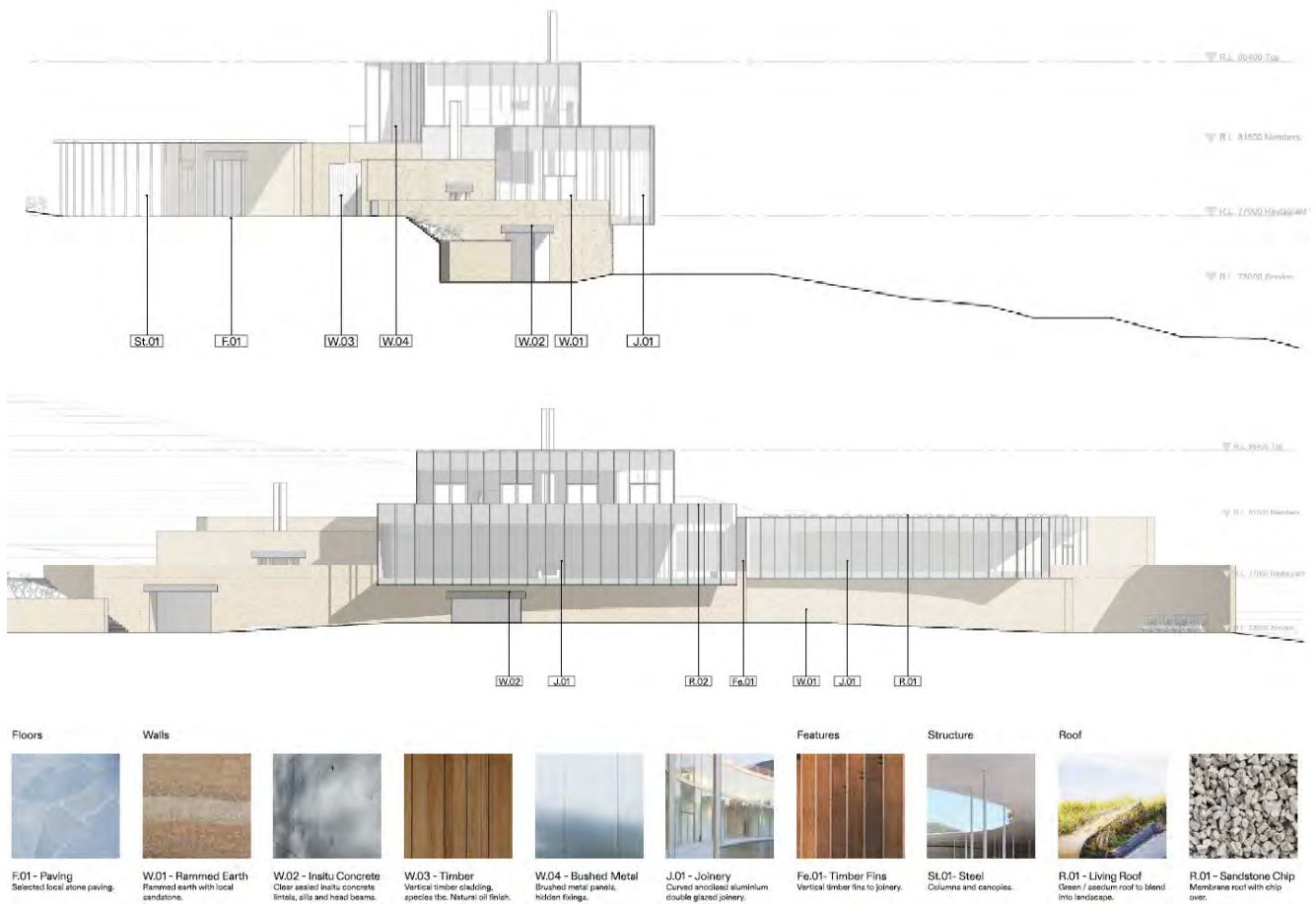


Figure 44: Proposed Clubhouse Elevation Drawings and Materiality



Figure 45: Visualisation of the Proposed Clubhouse Showing Form and Materiality (Visualisation view is looking southeast from near the 10th Tee)

The Clubhouse facility will include the following:

- Carparking;
- Entry lobby;
- A pro shop;
- Administration space;
- Restaurant and bar space for use by players and members;
- A member's lounge;
- Guest toilets;
- Golf cart storage;
- Bulk storage areas;
- A maintenance and equipment room;
- A caddie area;
- Administration space;
- Male and female changing rooms with showers, basins, and toilets; and
- A kitchen.

The Clubhouse will not be visible from Muriwai Road.

3.4.2 Sports Academy

The key functions of the Sports Academy are to provide instruction and training facilities for golfers and indoor and outdoor practice and playing facilities for tennis. The Sports Academy position and layout within the Site is shown in Figure 40.

Sports Academy building plans and visualisations are illustrated in Figures 46 to 48. Tennis building plans and visualisation are illustrated in Figures 49. Additional architectural details and design statement for these buildings are provided in Appendix 19.

The Sports Academy's main building will contain specialised training spaces and high-tech equipment suitable for the needs of year-round golf instruction. More specifically, the Sports Academy will include the following:

- Staff and visitor carparking;
- Two entry lobbies;
- A staff break room;
- A storeroom;
- Toilets with day lockers and showers;
- Two physiotherapy rooms;
- A meeting room;
- Four indoor teaching studios;
- A multi-purpose room;
- Office space;
- 16 covered hitting bays and driving range;
- A café comprising necessary kitchen and storage spaces;
- A golf practice green;
- A 9-hole short golf course; and
- Tennis facilities (including toilets) providing both indoor and outdoor playing options (grass and clay).

The Sports Academy and café will be open to the club's membership, Lodge guests, and the general public.

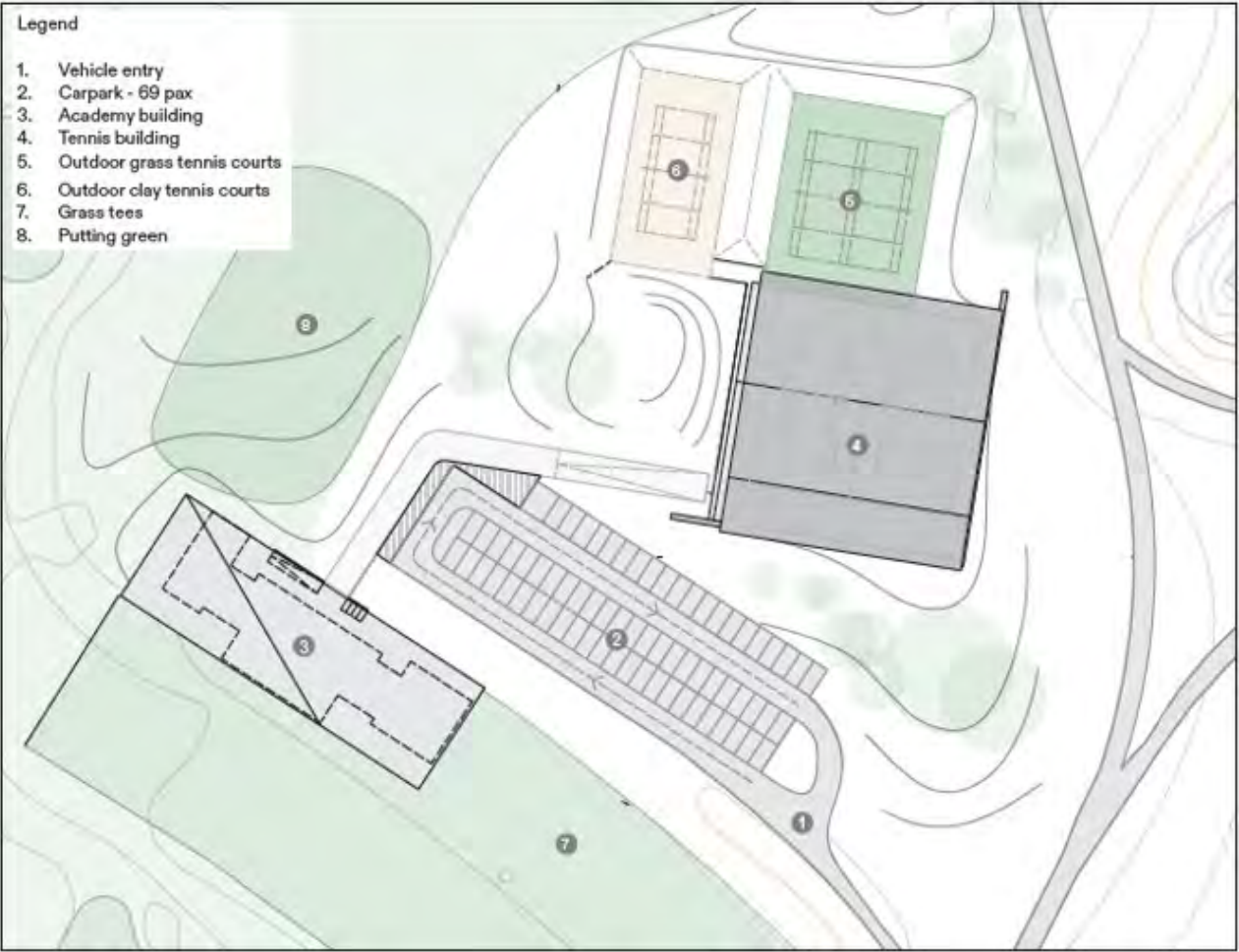


Figure 46: Sports Academy Layout Plans



- | | | |
|--------------|------------------|---------------------|
| 1. Entry | 6. Lobby | 11. Academy office |
| 2. Cafe | 7. Multi-purpose | 12. Meeting |
| 3. Kitchen | 8. Office | 13. Teaching spaces |
| 4. Store | 9. Physio | 14. NZ Golf |
| 5. Amenities | 10. Staff room | 15. Hitting bays |

Figure 47: Sports Academy Building Floor Plan

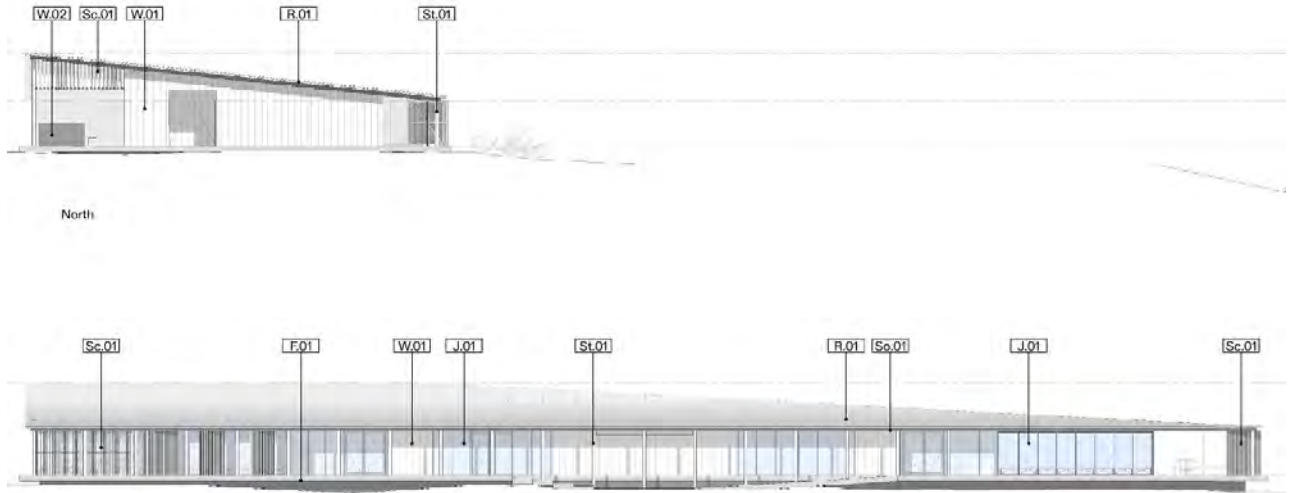


Figure 48: Elevation Drawings and Visualisation of the Sports Academy Building Showing Form and Materiality

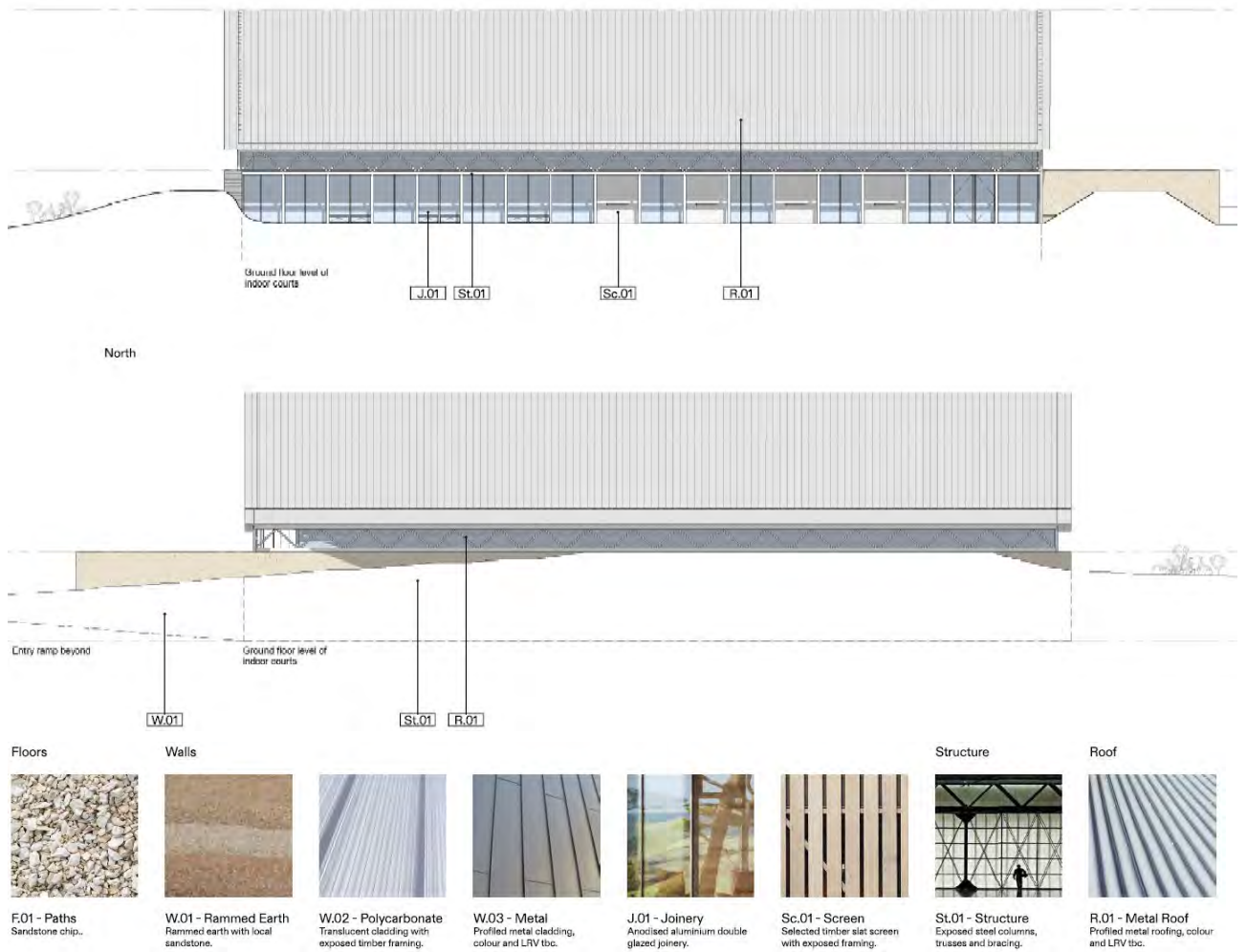


Figure 49: Elevation Drawings and Visualisation of the Tennis Building Showing Form and Materiality

3.4.3 Golf and Property Maintenance Complex (GPMC)

The purpose of the GPMC is to service the needs of the whole development including landscape planting areas, common areas, buildings including Clubhouse and Lodge and other support infrastructure and golf course systems. The GPMC will also provide a central hub for all Site deliveries. The GPMC's position within the Site is shown in Figure 40. The GPMC layout itself is illustrated in Figure 50 below.



Figure 50: Golf and Property Maintenance Layout Concept Plan

The GPMC includes:

- An equipment store / workshop;
- Staff and visitor carparking;
- A fuel area that will be covered with a roof and bunded;
- A biological wash water recycling area;
- Offices for golf course maintenance staff (GMC Offices);
- A chemical / fertilizer storage building;

- Materials bays for sand, gravel etc;
- A dedicated space for green waste / compost / rubbish / recycling;
- A bulk store; and
- An operations building.

Further details on the functions of each of these GPMC components are provided in the Golf Course Construction, Operation and Maintenance Report (Appendix 3).

Buildings that make up the GPMC will be designed to retain a rural aesthetic and resemble buildings typical of a working farm (and will function in a similar way). Associated design plans are provided in the Landscape Report (Appendix 13).

3.4.4 Luxury Lodge Accommodation

Accommodation will be provided on the Site by a new Lodge designed to meet luxury standards. The Lodge will be marketed alongside New Zealand's most sought after luxury accommodation facilities.

The Lodge will be located towards the western end of the Property on gently sloping land that provides views of the distant Tasman Sea and the Property's farm, forests, wetlands and Lake Ōkaihau. The indicative layout plan for the Lodge development is illustrated in Figure 51. Indicative elevation plans and visualisations of key Lodge buildings are illustrated in Figures 52 to 59. Additional indicative plan and elevations drawings, along with other design information, is provided in the architectural statement for the Lodge (Appendix 20)¹⁸.

The Lodge development will include the following;

- Staff and visitor carparking;
- A main Lodge building including:
 - Reception;
 - Office space;
 - Toilets;

¹⁸ All Lodge layout plan and elevation drawings presented are not yet final and subject to change within the envelope described in Table 13

- Kitchens;
- A bar;
- Indoor and outdoor dining;
- Lodge suites;
- A yoga / meeting room; and
- A plant and equipment room, easily accessed from the covered throughway.
- A range of accommodation units, a Lodge residence and a retreat, all uniquely designed and delicately placed to maximise guest privacy and enjoyment; and
- A wellness centre, separated from the main accommodation areas in a private corner of the Lodge complex footprint.



Figure 51: Lodge Layout Plan



Figure 52: Main Lodge Building Ground Floor Plan

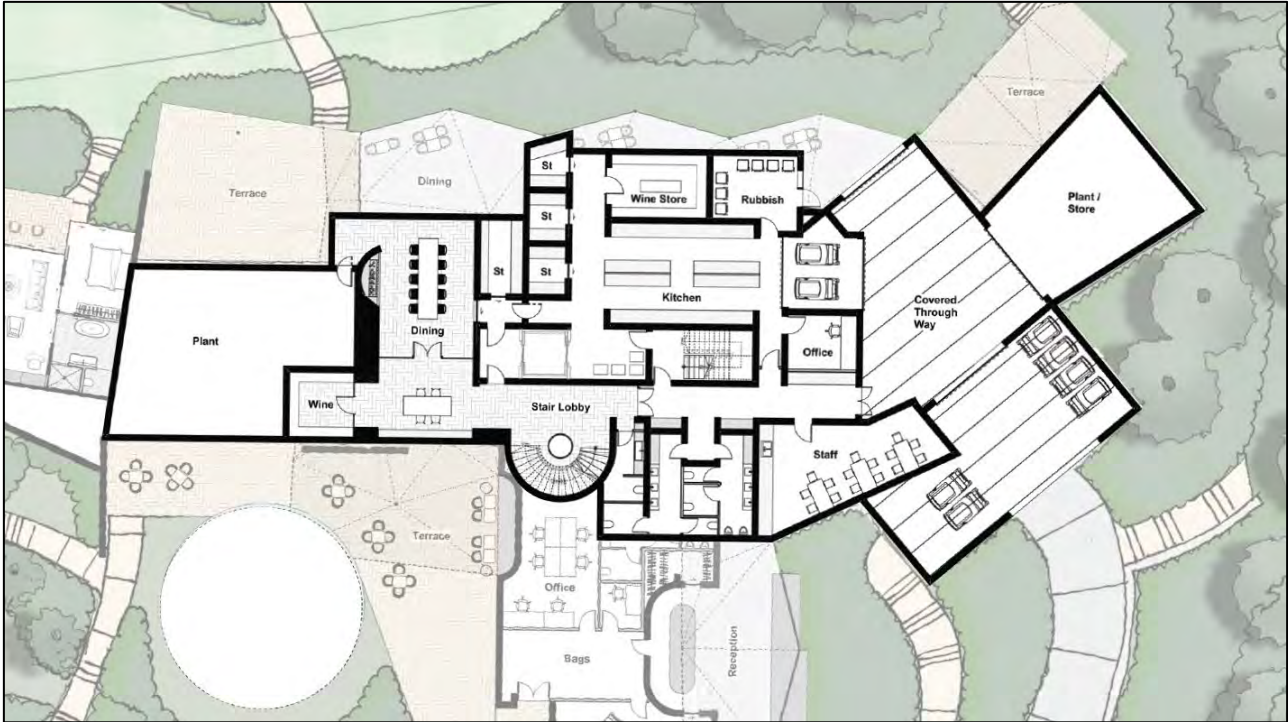


Figure 53: Main Lodge Building Basement Plan



Figure 54: Main Lodge Building West Elevation





Figure 55: Main Lodge Building Cross Section



Figure 56: Visualisation of the Main Lodge Building Showing Form and Materiality.

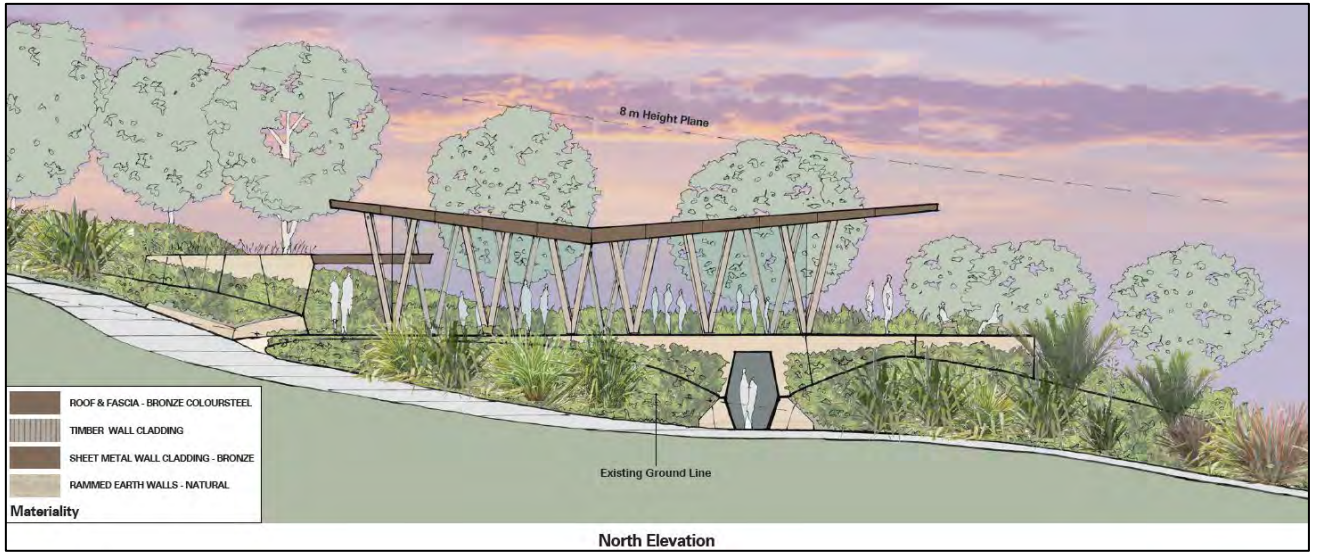


Figure 57: Meeting House / Yoga North Elevation



Figure 58: Wellness Centre Cross Section



Figure 59: Lodge Residence Cross Section



3.5 ECOLOGICAL RESTORATION AND ENHANCEMENT

The ecological features of the Site provide a unique and exciting proposition for golf and will form an integral part of the design of the proposed course and the overall experience for visitors to the Site.

The Ecology Report (Appendix 11) outlines an indicative restoration and enhancement concept plan for the development. At this stage, the concept scope covers approximately 28.7 hectares of planting. Key components of the concept are illustrated in Figure 60 and summarised below:

Golf course area planting, including:

- Approximately 5.7 hectares of riparian planting surrounding wetlands and streams to include low-stature native grasses, rushes, sedges and shrubs for ecological and amenity purposes.
- Approximately 4.9 hectares of wetland enrichment planting within the centres of wetlands including low-stature native grasses, rushes and sedges for ecological and amenity purposes.
- Approximately 3.2 hectares of other indigenous planting surrounding forest areas including early successional native shrubs and trees for ecological and amenity purposes.

Non-golf course area planting, including;

- Approximately 2.4 hectares of restoration riparian planting surrounding wetlands and streams.
- Approximately 2.3 hectares of ecological restoration wetland planting, including a suite of wetland plants appropriate for the Site.
- Approximately 8.4 of ecological restoration forest planting including a full suite of terrestrial forest plants appropriate for the Site.

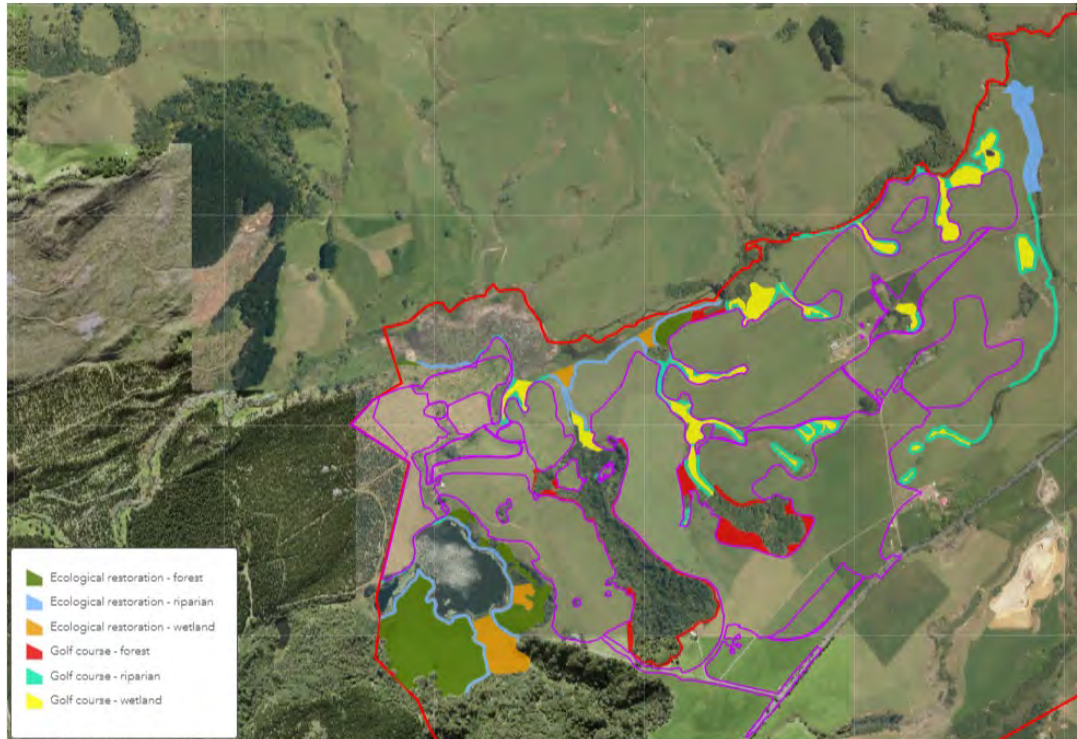


Figure 60: Concept Restoration and Enhancement Planting

The indicative concept includes:

- Extensive restoration planting, weed control and associated pest animal control around Lake Ōkaihau including:
 - An approximate 10 m wide riparian margin around the majority of the lake;
 - Enrichment planting of the wetlands within the upper lake catchment;
 - An assessment of the viability of controlling pest fish (rudd) in the Lake; and
 - Planting indigenous forest surrounding SEA_T_5524.
- Planting the forest margins of SEA_T_5525 and other forest remnants within close proximity to the development. These forest margin plantings will range between approximately 2 m to 55 m wide planting swathes;
- Planting an approximate 10 m wide riparian margin along the lower 80 m reach of Stream P4;
- Planting the riparian margin and enrichment planting of wetland centres in close proximity to the golf course; and
- Planting a contiguous riparian margin along Wetland W7.

Restoration works may also include strategic placement of education material, signage and information boards about the Site’s natural features and habitats.

3.6 FRESH WATER SUPPLY, STORAGE AND RETICULATION

3.6.1 General

New water supplies are required on the Site for irrigation and potable / domestic uses.

Having access to a reliable supply of freshwater for golf turf irrigation is a critical element to the success of the Project. It follows that establishing a sufficient supply of water that delivers year-round security of supply is the primary and most critical operational design aspect for this Project.

In this light, as outlined in more detail below, the Applicant has afforded a proportionally high level of attention and effort to determining the best possible water supply and storage solution for the Project. Given the demand for golf course irrigation water is highest during the driest part of the year, and since there is insufficient water to supply golf course needs without storage freshwater¹⁹, storage is also a critical component to the water supply solution for the Project.

3.6.2 Water Option Studies

Initial water supply investigations were undertaken by Pattle Delamore Partners Ltd (“PDP”). Their findings are set out in the Water Supply and Storage Options Reports (Appendix 7). Identified sources of surface water were limited to the Ōkiritoto stream catchment network. Potential groundwater resources were identified within the Awhitu Formation Aquifer, the Nihotupu Formation Aquifer and a unique Pillow Lava Aquifer observed outcropping on the Property (as described in Section 2).

Further hydrological studies confirmed the Raurataua / Ōkiritoto stream can provide plentiful volumes of water for sustainable abstraction during high-flow conditions (i.e. above median flow).

Further groundwater studies including, drilling, pump testing, geophysical surveying (Electrical Resistivity Tomography (ERT) Survey) and modelling of the Pillow Lava Aquifer showed it has large storage volume reserves. These are conservatively estimated at up to 1,000,000 m³. Technical reports for these studies are provided as part of Water Effects Summary Report (Appendix 10).

¹⁹ Water Effects Summary Report (Appendix 10)

Various modelling studies were also undertaken to determine the optimum volume of storage required to ensure water would be available to meet demand. These modelling exercises accounted for climatic trends, seasonal variations in surface water availability and groundwater recharge timeframes. The modelling used this information to calculate minimum storage volumes for varying risk acceptance thresholds. These studies determined that a storage volume 140,000 m³ presented the most appropriate balance between construction cost and security of water supply for the Project.

These studies also examined water storage options on the Property. Initially, twelve potential on and off-stream water storage locations across the Property were identified (Figure 61).

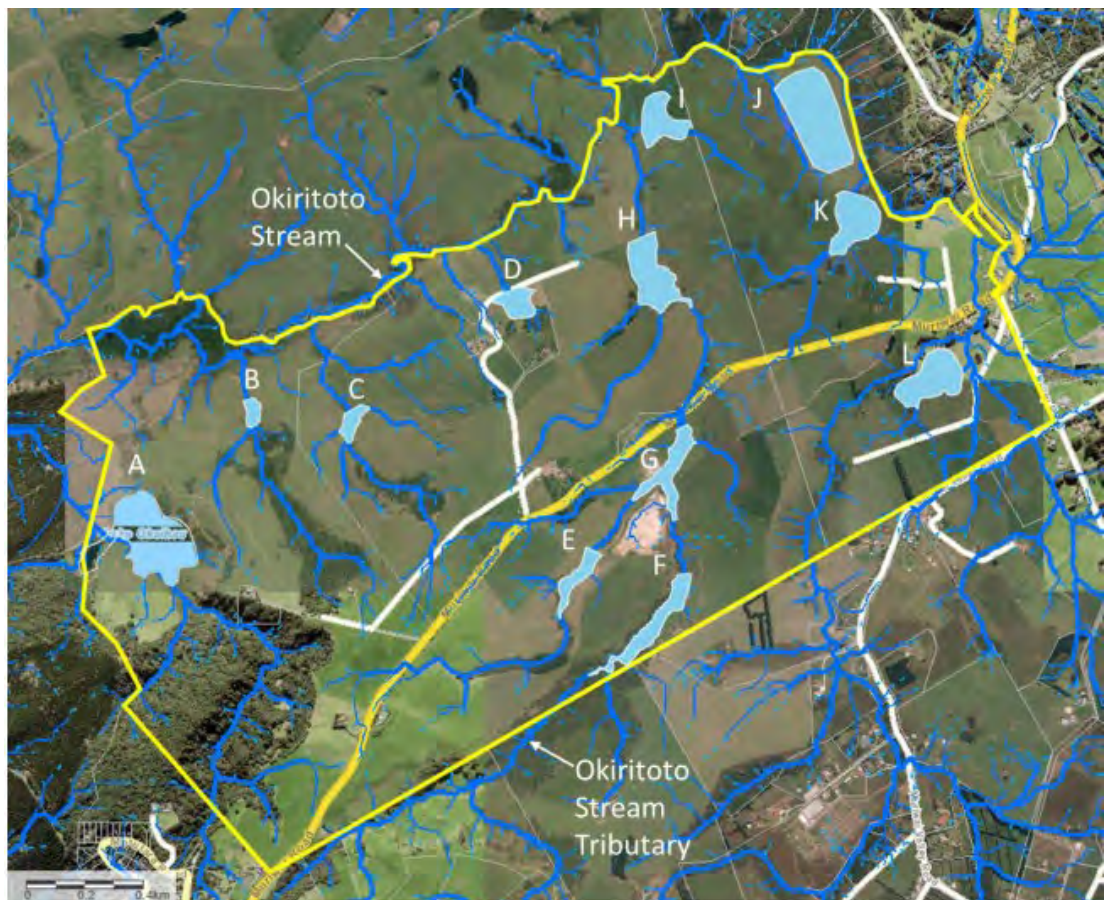


Figure 61: Potential water storage locations (from the Water Supply and Storage Options Reports (Appendix 7)).

Multi criteria assessment analyses eventually eliminated all but one of these storage Sites (Option J). Sites were eliminated for a variety of reasons including; cultural concerns, ecological constraints, storage volume inadequacies, minimal contributing catchment areas (for on-stream storage options) and/or excessive dam heights or earthwork volumes. With only one option remaining (off-stream storage Option J) other advice was sought to consider potential alternatives.

In response, the concept of using the Property’s sandstone quarry pit for water storage (Option 2 Quarry Head) was identified along with a new proposed storage Site located adjacent and south of Muriwai Road (refer “Option 2 Reservoir 1” in Figure 62). The latter became known as the “Southern Reservoir Option”. The three options for further investigation are shown in Figure 62.



Figure 62: Final Conceptual Water Storage Reservoir Options

A second (unweighted) multi-criteria assessment exercise on the three remaining feasible storage options determined the Southern Reservoir Option as the best storage option overall. The results of this assessment are summarised in Table 9.

Table 9: Water Storage Option Assessment (red shading = least preferred, green shading = most preferred)

Option	Advantages	Disadvantages
Option 2 Quarry Head	<ul style="list-style-type: none"> Land is already disturbed Provides potential quarry rehabilitation solution Potential to use excavated material for golf development 	<ul style="list-style-type: none"> Very large earthwork volumes required to meet desired storage volume Adjacent to wetlands Very high capital cost
Option J	<ul style="list-style-type: none"> Close to Ōkiritoto stream Located further down the catchment (marginally higher stream flows) 	<ul style="list-style-type: none"> Floodplain risks Highly visible by adjacent eastern neighbours Displaces productive farmland / prime soils Requires significant farming operation / paddock adjustments Shallow groundwater Large pumping distance
Southern Reservoir Option	<ul style="list-style-type: none"> Large storage volume Reasonably large separation to groundwater Good access Unlikely to be visible from neighbouring dwellings 	<ul style="list-style-type: none"> Displaces productive farmland / prime soils

Ultimately, the Southern Reservoir Option was selected for the Project's water storage reservoir.

3.6.3 Water Supply and Storage Solution

Outputs from the various water supply and storage options studies summarised above have been used to determine the final water solution for the Project. This solution is

detailed in Water Balance and Strategy Report which is appended to the Water Effects Summary Report (Appendix 10).

In summary, to fulfill the Project's total water demand, potable and domestic water will be supplied from the local groundwater resource while irrigation water will be supplied from two sources - the Raurataua Stream and the local groundwater resource. Primarily, water used for irrigation will be stored in the water storage reservoir - a purpose-built off-stream reservoir. To cater for potential water storage reservoir maintenance activities, water reticulation infrastructure will also enable irrigation water to be supplied directly from the groundwater resource.

Figure 63 below provides an overview layout plan of the proposed water supply, storage and reticulation infrastructure for the Site. Descriptions of individual components are summarised further below.

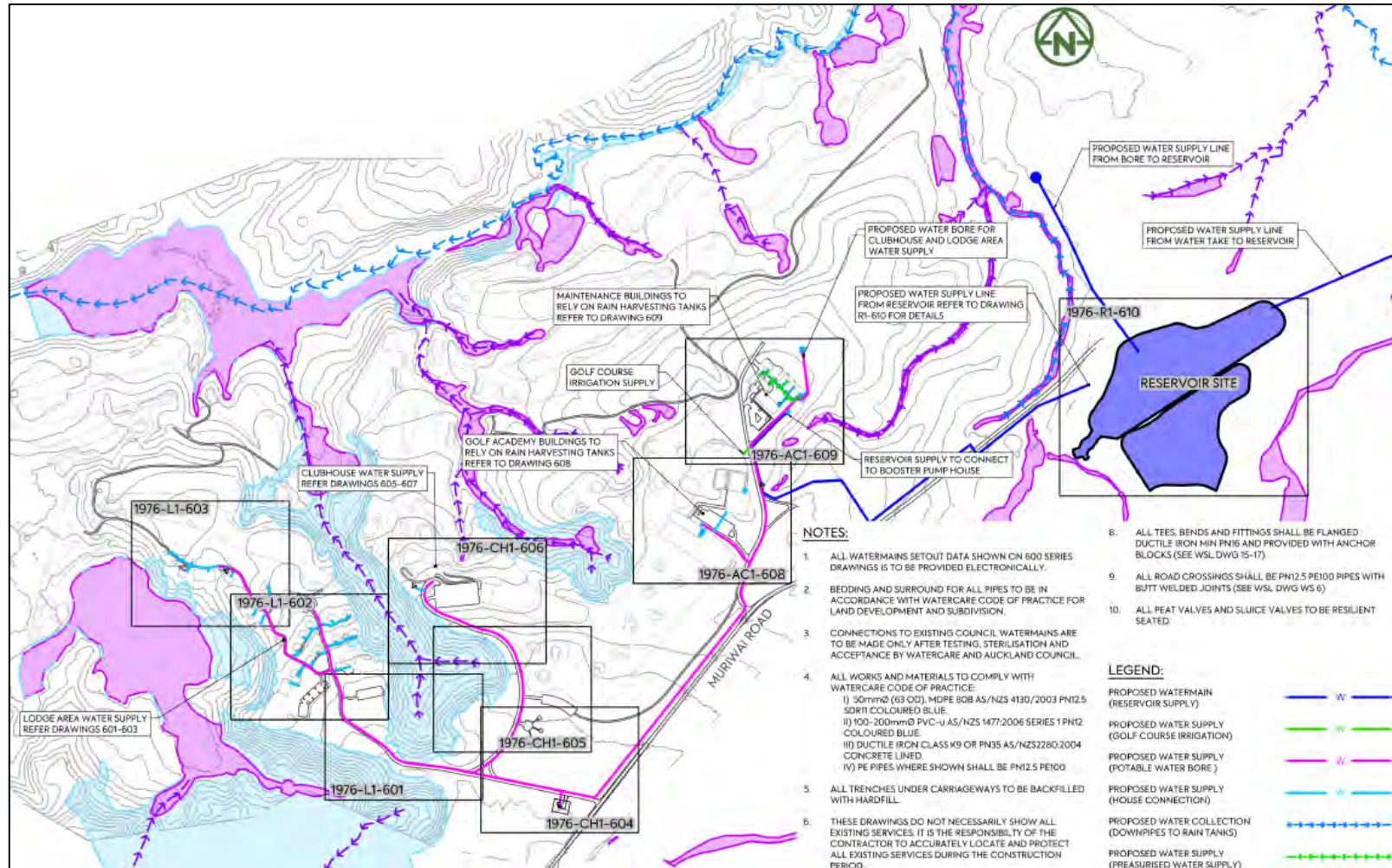


Figure 63: Preliminary water supply, storage and reticulation design overview (from Infrastructure Engineering Report).

Irrigation Water

Demand

Calculations to determine the Site's irrigation water demand are described in detail within the Golf Course Construction, Operation and Maintenance Report (Appendix 3) and within Site Water Balance and Strategy Report appended to the Water Effects Summary Report (Appendix 10).

Based on the preliminary design of all golf areas, the peak demand will be 2.15 million litres per day each January once the course is established and operational. This demand reduces to 0.29 million litres per day each July. Overall, the maximum expected irrigable area is 55 ha (inclusive of landscape planting irrigation areas).

The wider Site will have other areas beyond golf playing surface areas that require irrigation water, such as landscape planting areas.

One exception to the normal operational water demand occurs during the initial "grow-in" phase of the golf course's construction. The peak demand during the grow-in phase will be up to approximately 3.9 million litres per day.

Irrigation Water Management Regime

To meet the irrigation demand, water takes from the Raurataua Stream and from deep groundwater resource will be carried out using continuous stream and pumped flow information and a programmable logic control system programmed to maintain the following water management regime:

- Irrigation water will be supplied from the water storage reservoir or direct from the groundwater supply bore (this is an existing bore denoted by the dark blue dot in Figure 63).
- The water storage reservoir will be filled from the Raurataua Stream as follows (as required by the AUP).
- Abstraction of stream water during periods of high flow (i.e. above median stream flows of 131 l/s) - up to a maximum abstraction rate of 30 l/s.
- Actual rate of abstraction during high flow to be proportionally increased with increasing stream flow to ensure no more than 10% of the instantaneous stream flow is abstracted.
- When flows are less than median stream flow of 131 l/s, no Raurataua Stream water will be abstracted and any irrigation water required will be provided from the water storage reservoir or direct from the groundwater supply bore.



- During periods of no Raurataua Stream water abstraction, water storage reservoir levels will be maintained using deep groundwater (expected to be predominantly during summer).

The volumes, rates and limits proposed under this regime are summarised in Table 10.

Table 10: Irrigation Water Management Strategy - Summary

	Parameter	Value
Water Storage	Water Reservoir Volume	140,000 m ³
Water Supply	Rarautaua Stream – Median Flow Rate	131 l/s
	Surface water high-flow harvesting take rate	Up to 30 l/s
	(limited to times when stream flows are above the median)	
	Deep groundwater	Pump rate
	Average seasonal volume	50,000 m ³
	Max seasonal volume	180,000 m ³

Raurataua Stream Take

The surface water take proposed from the Raurataua Stream will be at the location denoted in Figure 64 by the yellow dot in the far-right corner of the Property close to Muriwai Road. This take location is not within a wetland.



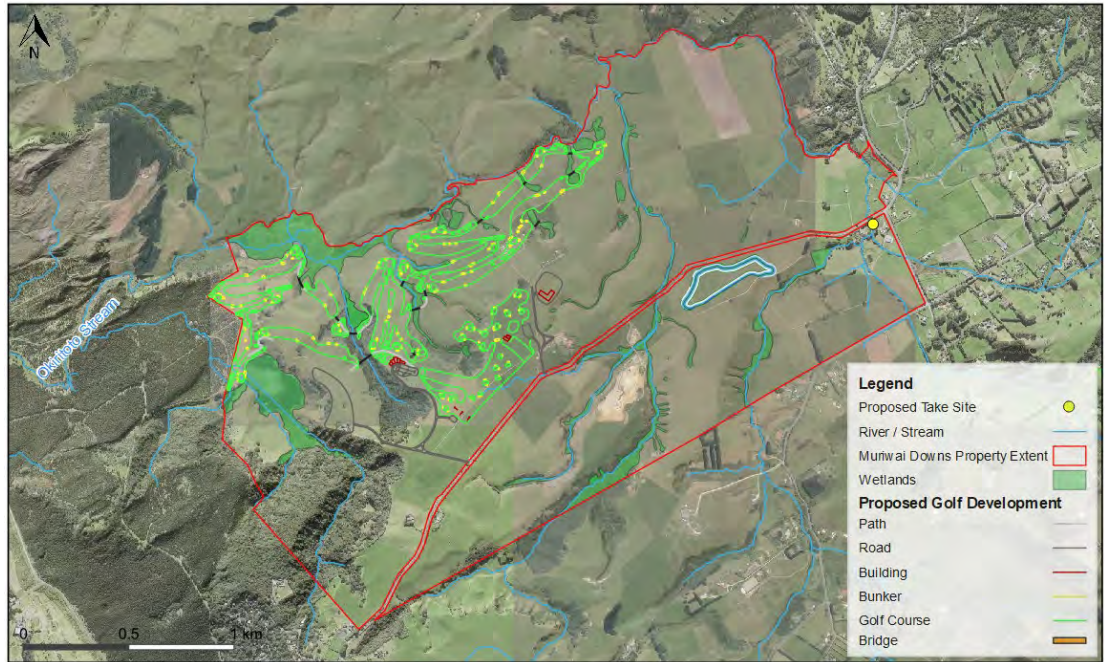


Figure 64: Location of Raurataua Stream High Flow Take.

The final design of the intake structure is being developed, with a number of design options being considered including:

- Fixed intake structure with screen;
- Removable screen intake on swivelled winch; or
- Stream bank chamber and pump structure.

Figure 64 provides example photographs of each of these types of intake options. In any case, the design will ensure that maximum intake screen aperture size and intake velocities do not exceed relevant requirements for the protection of fish.

A small pump shed would also be installed near the point of take to house water pumps, flow meters and control systems.



Figure 65: Intake structure design options.

Deep Groundwater Take

The location of the deep groundwater bore to be used for supplementary irrigation supply is to the north of the water reservoir (see dark blue dot in Figure 63). Abstracted groundwater from this bore will be primarily directed to the water storage reservoir, providing valuable supplementary irrigation supply, particularly in dry conditions when abstraction from the Raurataua Stream may be limited. As mentioned already, in some instances groundwater may bypass the reservoir (e.g. during early stages of golf course grow-in or during reservoir maintenance periods etc).

Storage

A plan drawing of the water storage reservoir is provided in Figure 66 while more detailed design, cross section drawings and cut and fill information is presented in the Engineering and Infrastructure Report (Appendix 5).

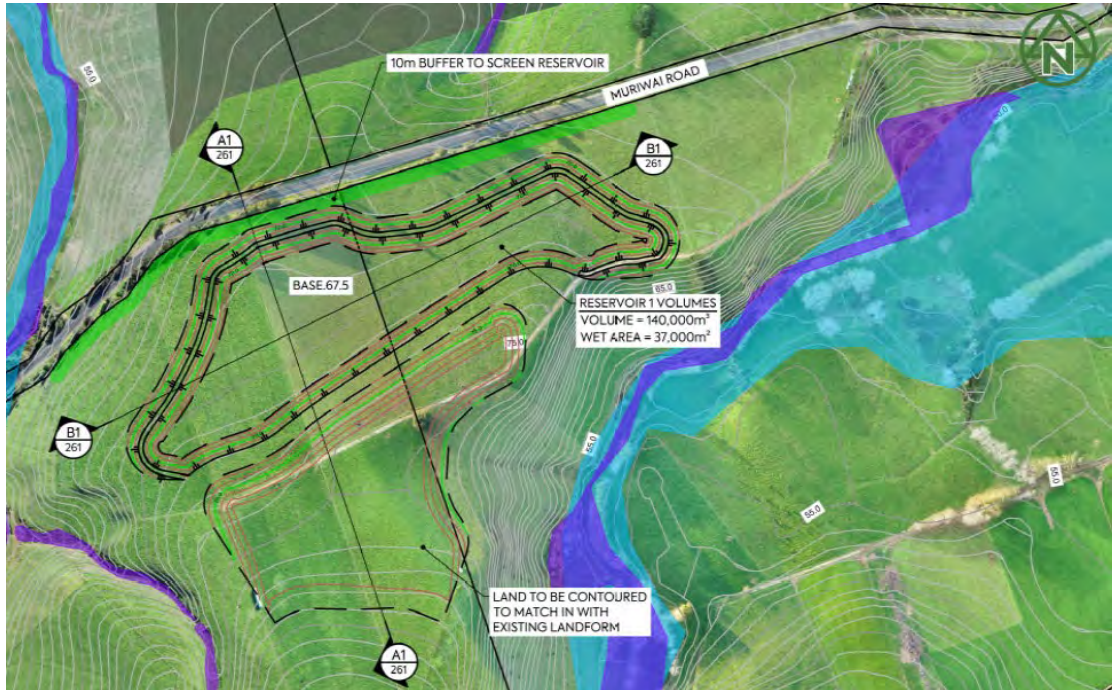


Figure 66: Proposed water storage reservoir and fill area.

In summary, the water storage reservoir will be approximately 4m deep with a surface area of approximately 3.7 hectares. The reservoir will provide a storage capacity of approximately 140,000 m³. It will be excavated into the existing ground surface slope and will include visual and amenity planting embankments along the northern, eastern, and western sides of the reservoir.

The southern slope will be cut into the hillside and excess fill materials placed in a nominated disposal area upslope to the south of the water storage reservoir. Excess fill material will be contoured, re-grassed and returned to pastoral farming.

Potable and Domestic Water

Potable demand will be approximately to 25.9 m³/d (9,454 m³ per year) for the Lodge and Clubhouse, and approximately 11 m³/d (4,015 m³ per year) for the Sports Academy, GPMC and existing farm dwellings²⁰.

Potable supply for the Lodge and Clubhouse will be from a new groundwater bore generally located near the GPMC (refer light blue dot in Figure 63. This bore will access the same basalt aquifer used for irrigation supply. To this extent, it will also be used as a back-up irrigation water supply when required.

Potable supply for the Sports Academy and the GPMC will be primarily supplied from rain harvesting facilities and storage tanks. If required (i.e. during drought conditions), supplementary water will be supplied to the Sports Academy and the GPMC from the groundwater bores.

Additional details regarding potable water demand calculations are set out in the Engineering Infrastructure Report (Appendix 5). Preliminary design drawings for potable supply and reticulation are also provided in Appendix 5.

3.7 WASTEWATER TREATMENT, RETICULATION AND DISPOSAL

Figure 67 provides an overview layout plan of the proposed Site domestic wastewater reticulation and treatment facilities for the Project.

In summary, domestic wastewater from all buildings will be directed to a centralized treatment and land disposal facility via a mixture of gravity and pumped rising main reticulation. The treatment facility and disposal field will be located near Muriwai Road, immediately northeast of the Lodge and Clubhouse vehicle crossing. The location of the disposal facility has been identified following careful consideration of the features and constraints of the Property.

Additional information relating to the wastewater system design philosophy is provided in the Engineering Infrastructure Report (Appendix 5).

²⁰ Although existing dwellings may retain their current use of the on-Site shallow well, provisions are factored into this Project to enable this demand to be met through the proposed new groundwater take.

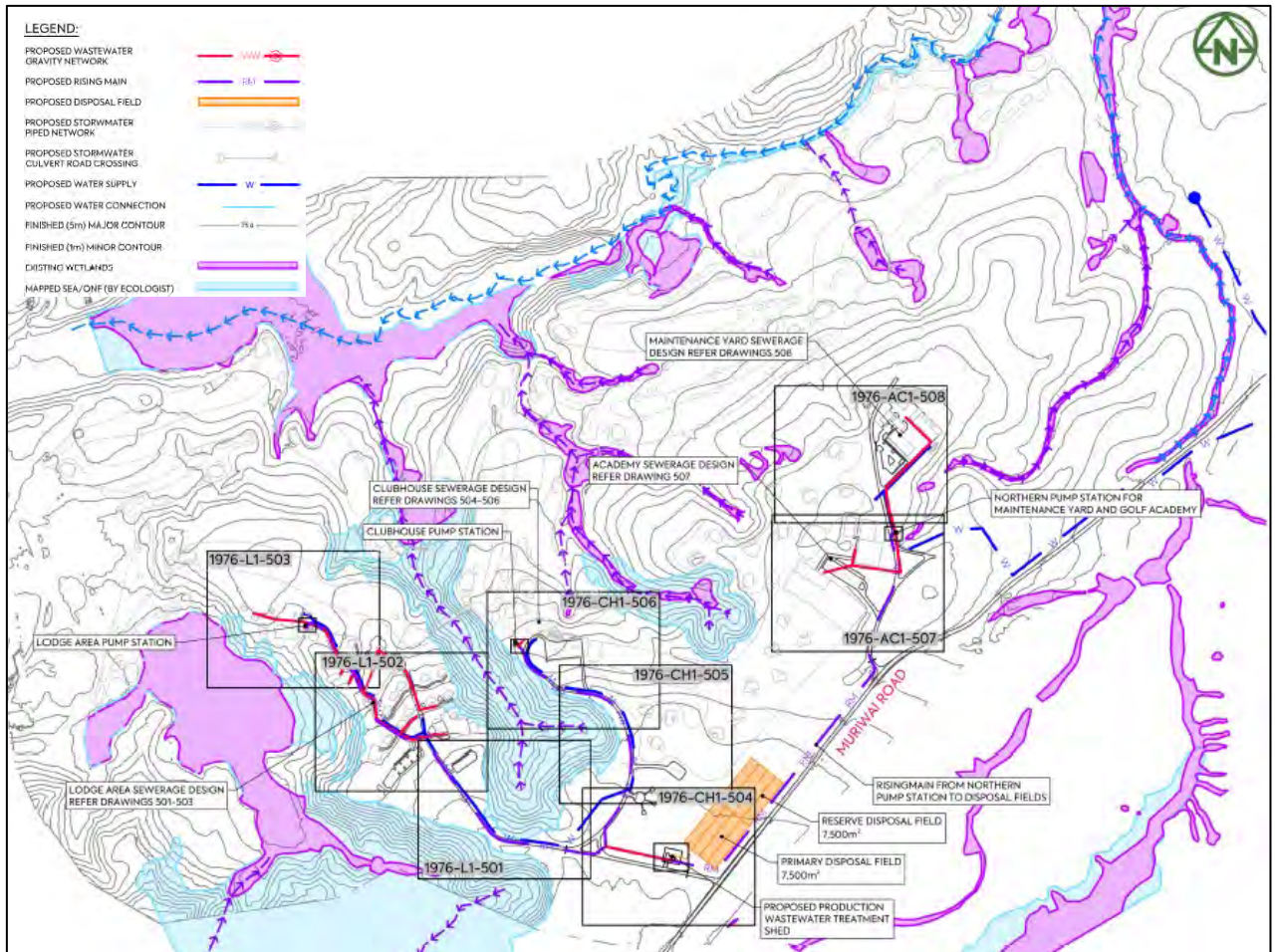


Figure 67: Preliminary wastewater reticulation and treatment overview

3.8 DRAINAGE AND STORMWATER MANAGEMENT

Preliminary layout and design of all stormwater and drainage infrastructure servicing the Lodge, Clubhouse, Sports Academy and GPMC, including associated roads and carparks, is presented in the Combined Civil Drawings provided in Engineering Infrastructure Report (Appendix 5).

- The design employs the following components:
- Stormwater pit and pipework networks for each area;
- Soakage pits;
- Roadway shoulder drains;
- Stormwater road crossing culverts:
- Offline raingardens; and

- Stormwater discharge outlets to land.

3.9 SITE ACCESS, ROADING AND CAR PARKING

3.9.1 Vehicle Crossings

Vehicle access to the Site will be provided by two vehicle crossings off Muriwai Road. The locations of these are shown in Figure 68. Preliminary design plans for the vehicle crossings are provided in the ITA (Appendix 16).

An existing vehicle crossing at the western end of the Site will be upgraded to provide shared vehicle access to the Lodge, Golf Course, Clubhouse and the existing dwelling at 670 Muriwai Rd. This Lodge and Clubhouse access will be designed to accommodate a full right turn bay and will require some associated road widening works.

A new crossing at the eastern end of the Site will be designed and constructed to provide shared vehicle access to the Sports Academy, GPMC and ongoing access to 614 Muriwai Rd, the existing farm and nearby farm buildings. This new accessway replaces an existing crossing located approximately 50m to the east. The new Sports Academy and Service access will be designed according to the NZTA PPM Diagram D.

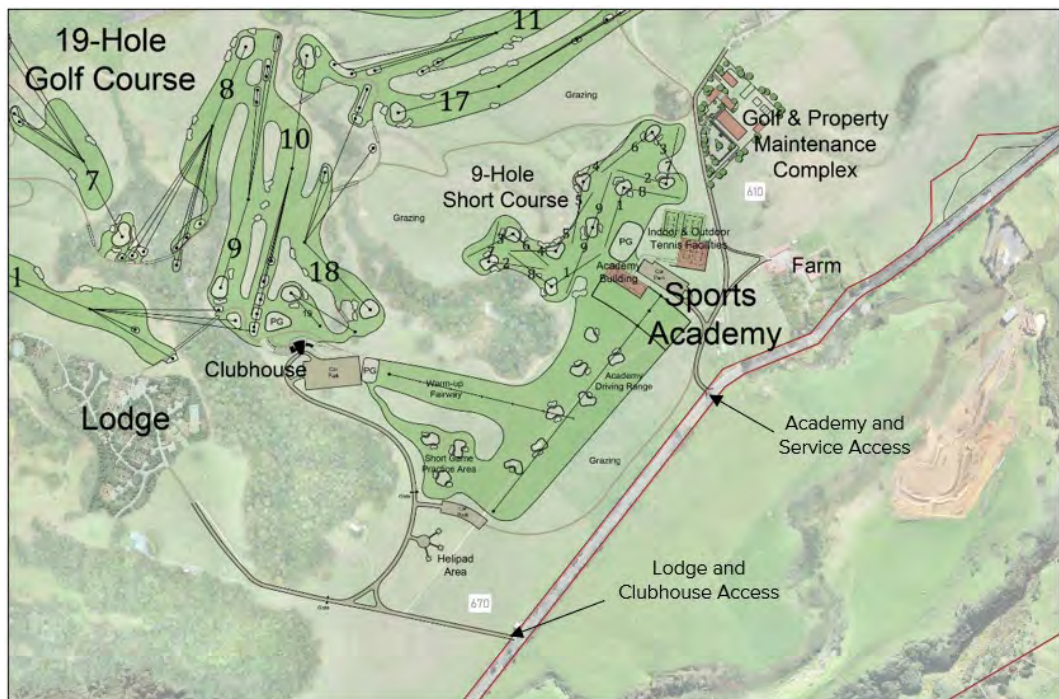


Figure 68: Plan showing locations of proposed vehicle crossings and internal roading

Preliminary design plans for these vehicle crossings are provided in the ITA (Appendix 16).

3.9.2 OnSite Roding

Preliminary layout and design of all internal Site roads is presented in the Combined Civil Drawings provided in Engineering Infrastructure Report (Appendix 5).

3.9.3 Car Parking

Visitor and staff car parks are proposed at the following locations:

- Clubhouse;
- Lodge;
- Sports Academy;
- GPMC; and
- Adjacent to the golf course short game practice area.

Preliminary layout and design of all car parks is presented in the Combined Civil Drawings provided in Engineering Infrastructure Report (Appendix 5).

3.10 ELECTRICITY SUPPLY

Electricity supplies to all buildings and electrically operated plant will be reticulated and installed in accordance with local lines company requirements.

3.11 OUTDOOR LIGHTING

Buildings will include some low lux outdoor lighting for general pedestrian and operational safety, and to enhance specific architectural features or landscape planting. Low lux lighting is also contemplated at ground level to illuminate interconnecting pedestrian pathways within the Lodge area and between the Clubhouse and the Lodge for safety reasons and aesthetics.

To enable some night-time usage of the academy range, low intensity lighting will be installed. However, traditional pole-lighting will not be used since there is no need to fully light the entire range. Figure 69 illustrates how this lighting concept could be adapted to the Sports Academy design.



Figure 69: Sports Academy lighting concept

The proposed outdoor clay tennis courts may also be lit for some night-time use.

- The lighting design will be informed by criteria provided by relevant technical, ecology and landscape experts;
- Comply with all relevant AUP performance standards; and
- Be prepared by an appropriately qualified and experienced illumination specialist as part of the detailed design stage of the Project.

3.12 SIGNAGE

Signage will be located near Muriwai Road at both Site vehicle crossings. The intention is for signage to be simple and understated in nature. Figure 70 provides an example of the aesthetic likely to be adopted for Site signs. Signage will be developed at the detailed design stage.



Figure 70: Form and Materiality Example for Site Signage

3.13 POU AND CULTURAL ART

Discussions undertaken to date with Mana Whenua have revealed a preference for the development to incorporate traditional art and motif where possible as part of the final design to enhance the design of key buildings and to highlight the cultural significance of the area.

3.14 HELICOPTER FLIGHTS

A designated helicopter landing and take-off area is proposed to be located alongside the golf course and Clubhouse access road as shown in Figure 40. It will comprise three separate helipads designed in accordance with civil aviation safety requirements.

Details of the helicopter movements are outlined in the Noise Report (Appendix 15). Typical helicopter flight paths in and out of the Site are illustrated in Figure 71 below.

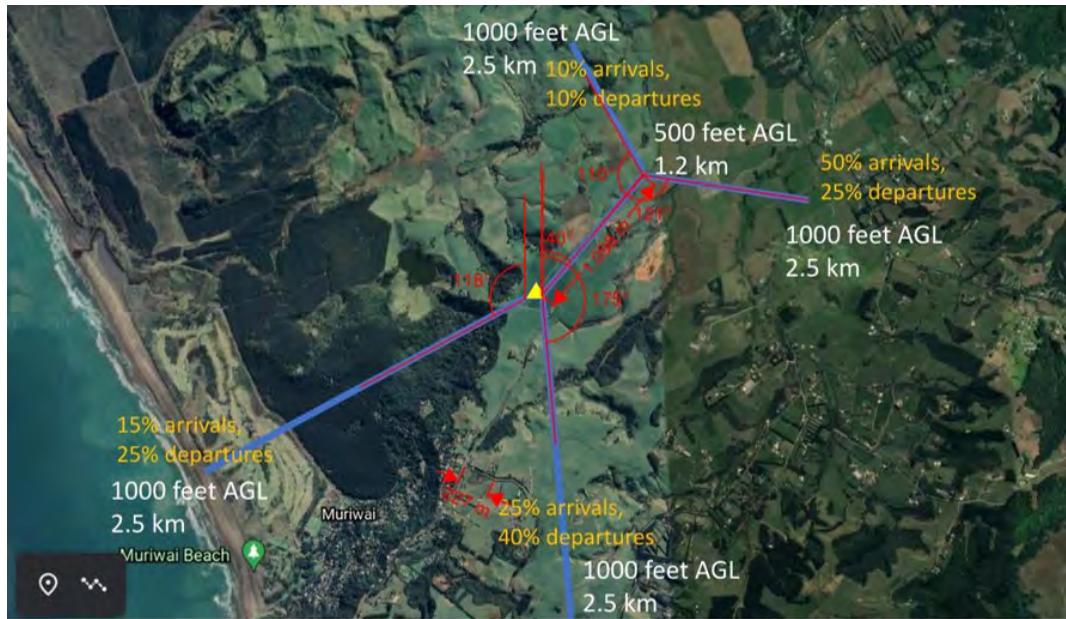


Figure 71: Typical helicopter flight paths and indicative usages.

3.15 LANDSCAPE PLANTING

In addition to the ecological restoration and enhancement planting proposed for the Project, other landscape planting will also be undertaken. Landscape concept and planting guidelines for the Site are described and presented in the Landscape Report (Appendix 13).

All landscape planting will be undertaken in accordance with a Landscape Planting Plan (“LPP”) for the Project. This plan will incorporate bespoke sets of landscape planting guidelines for each Site area. These guidelines are also described in the Landscape Report (Appendix 13).

3.16 CONSTRUCTION ACTIVITIES

3.16.1 General

The construction Project will involve the following key elements:

- Implementation of sediment and erosion control devices;
- Implementation of kauri die-back disease management protocols and plans;
- Construction of water reservoir and Site buildings;
- Golf course Site clearing, vegetation removal and trimming;

- Topsoil stripping and stockpiling;
- Bulk earthworks;
- Golf course shaping;
- Importation of sand gravel and other construction materials;
- Construction of tees, greens, and bunkers;
- Construction of bridges and stream culvert;
- Topsoil resspreading;
- Trenching and installation of golf course drainage and irrigation systems;
- Turf grow-in;
- Construction of buildings;
- Construction of roads, tracks and paths; and
- Landscape and ecological restoration planting activities.

3.16.2 Indicative Construction Schedule

It is anticipated the duration of the construction period will be approximately 36 months. It is also anticipated the construction of the water storage reservoir will be the initial priority from a construction programming perspective. This is to allow early collection and storage of water so that it is available for the first phase of grow-in for the golf course.

3.16.3 Site Clearing and Tree Removal

Based on the current golf course design, specific site clearing and vegetation removal plans have been prepared. These plans, along with methodology statements for site clearing, are presented in the Draft CEMP (Appendix 18).

The Arboriculture Report (Appendix 12) provides details on the trees and groups of trees requiring removal for the Project. Trees and groups of trees requiring removal and trees to be retained are illustrated in that report's appended Tree and Vegetation Plans. In total there are 29 trees, or groups of trees, that require tree removal or alteration resource consent within the Site. In addition, three groups of trees requiring removal from within the Muriwai Road Reserve also require tree removal resource consent.

Additional methodology details for tree removal, tree trimming and Kauri die-back management are provided in the Arboriculture Report (Appendix 12).

3.16.4 Bulk Earthworks

To determine the scale and extent of earthworks required to construct the golf course, contour plans for the designed course have been prepared and compared to existing ground contours to produce preliminary cut and fill plans. The cut depths proposed easily comply with the maximum allowable cut depth criteria developed to avoid adverse effects on wetlands sustained by perched groundwater.

The preliminary cut and fill plans have been used to develop preliminary construction erosion and sediment control plans (“**ESCP**”) showing how stormwater will be managed and treated while earthwork activities are occurring in each catchment.

Philosophies and procedures to be used for bulk earthwork activities, along with cut and fill plans and ESCPs are presented in the Draft CEMP (Appendix 18). The Draft CEMP sets out overall earthworks philosophies to minimise movement of soil and areas of exposed soil while maximising cut and fill balance within individual catchments. It also includes protocols to ensure appropriate care is taken to avoid, minimise or mitigate any actual or potential adverse effects on wetlands, surface water, indigenous vegetation and to minimise nuisance for neighbours.

3.16.5 Golf Course Construction Activities

Construction of the golf course fairways, tees, bunkers and irrigation and drainage systems involve a number of different phases and sub-activities. Associated methodologies are described in Golf Course Construction, Operation and Maintenance Report (Appendix 3) and the Draft CEMP (Appendix 18).

3.16.6 Grow-In phase

Once the irrigation systems have been installed and commissioned and the greens, tees and fairways have all been constructed and shaped to reflect the design intentions of the golf course in each zone, they will then be grassed then managed (fertiliser, water, topdressing) to establish a mature, dense turf cover. Typically, the grow-in process takes around 16 weeks for each area being grown in. Additional precautions and processes will be adopted where this occurs close to sensitive environments such as wetlands²¹.

²¹ Draft CEMP (Appendix 18)

3.16.7 Construction of Bridges and Stream Bed Culvert

Construction methodology statements for all proposed bridges and the stream bed culvert are provided in Draft CEMP.

3.16.8 Construction of Water Storage Reservoir

Earthwork methodologies to be used for the construction of the water storage reservoir are also provided in Draft CEMP.

3.17 SITE OPERATIONS

3.17.1 Golf Course and Clubhouse Operations

The Golf Course and Clubhouse use will be available for club members, their guests, guests of the Lodge, and for initiatives aimed at development and growth of the game of golf. The course will be membership based and have members from New Zealand and overseas.

Golfers are forecasted to play approximately 12,500 rounds of golf annually. The timeframe for reaching 12,500 rounds of golf will depend on the course opening date (and seasonality / time of year) and the situation with open borders and opportunities international travel to New Zealand.

The Clubhouse restaurant and bar will not be available for public use. Some minor retail will be provided at the Clubhouse (e.g. golf equipment etc) along with caddie services.

The Golf course should be in operation 365 days per year.

3.17.2 Sports Academy Operations

The Sports Academy will be open to the public and serve the needs of the golf club membership and Lodge guests, who are expected to take advantage of the learning and training opportunities on offer within this facility. It should be noted that the driving range element incorporated into the Sports Academy design will not be operated as a conventional driving range. That is, although members of the public will be able to use it, this use will be associated with golf training activities rather than for general entertainment.

Indoor and outdoor (grass and clay) will also be available to the public, golf club members and Lodge guests.

Offices within the Sports Academy building will be available for golf and other sporting representative organisations via standard lease or rental arrangements.

The Sports Academy café will be open to the public with a consistent food and beverage offering to academy guests and the local community.

Some retail will also be provided at the Sports Academy (e.g. golf and tennis equipment).

3.17.3 Golf and Property Maintenance Complex Operations

The GPMC will be an active part of the overall Site operation incorporating interrelated service functions. Most deliveries for the wider Site will be directed to the GPMC, reducing vehicle movements to the individual buildings (Clubhouse, Lodge and Sports Academy).

The GPMC will operate from 5:30AM to 8:00PM, seven days a week.

3.17.4 Lodge Operations

Luxury Lodges are different than a traditional hotel product. The main differentiating factor is the exceptional level of hospitality guests receive at a Lodge. Luxury Lodges also offer the very best of location, accommodation, dining, activity offerings and overall service.

The proposed Lodge will provide approximately 9,500 available unit-nights per annum. Although difficult to predict, it is assumed around 60% average occupancy is achievable. This equates to approximately 6,000 occupied unit-nights annually.

The Lodge will cater to golfers and non-golfers. It is expected that approximately 30% of guests will play golf. In terms of the lengths of individual stays, this is hard to predict (particularly in the current circumstances) and will vary. For indicative purposes, most luxury Lodges target an average length of stay throughout the year of approximately 2.5 nights. The domestic market typically delivers a lower length of stay, while the international market usually delivers a slightly higher length of stay.

The Lodge and associated accommodation units will be serviced by a team of on-Site staff.

Fine dining will be offered at the main Lodge building for guests, however, this will not be within a conventional “restaurant” setting. Instead, “casual dining” at different locations within the main Lodge building will be provided for. Depending on occupancy, the Lodge will also allow the public (non-Lodge guests) to pre-book lunch or dinner.

The main Lodge building will also provide for some minor retail (e.g. local art and/or gifts) as will the wellness centre (e.g. skin products).

The Lodge will operate at all times, 365 days of the year.

3.17.5 Special Events

Collectively, the proposed facilities will be capable of hosting events on a local, national, and international scale, including major events, especially in the golf space.

There are no temporary special events proposed as part of this application. Any temporary special events proposed in the future (e.g. golf tournaments) that are outside the normal operation of the Site will be subject to separate consenting processes.

3.17.6 Golf Course Nutrient Management

Nutrient management has been given careful consideration in this Project. Expected application rates are outlined in the Golf Course Construction, Operation and Maintenance Report provided in Table 11.

Table 11: Expected Golf Course Nutrient Application Regime

Scenario	Nominal Area (Hectares)	Nitrogen (kgs/Ha/Year)	Phosphorous (kgs/Ha/Year)	Potassium (kgs/Ha/Year)
Greens	2.9	93	4	67
Tees	3.8	105	18	110
Fairways and Primary Rough	37	58	58	52
Secondary Rough	28.6	25	12	2
Permitted Farming Activity Limit (sandy soil) ²²		150		
Permitted Farming Activity Limit (other soil) ²³		200		

3.17.7 Traffic Generation and Controlled Vehicle Access

Peak traffic generation associated with the Project is estimated at 92 vehicles per hour. For health and safety and security purposes, accessways to the golf Clubhouse and Lodge are planned to operate with an electronic security access gate set back from Muriwai Road.

²² AUP Standard E35.6.1.1 (3)(a)

²³ AUP Standard E35.6.1.1 (3)(b)

3.17.8 Hazardous Substances Storage and Handling

All hazardous substances will be stored in accordance with HSNO requirements and handled, used and disposed in accordance with manufacturer’s recommendations. The hazardous substances required for this Project do not exceed the limits in the AUP and accordingly no consents are required.

3.17.9 Solid Waste Management and Recycling

All solid refuse that is not composted or recycled will be collected and disposed into a licensed landfill.

3.17.10 Ongoing Farming Activities

Rural productive use of the Property will be maintained alongside the golf course with future rural uses have been integrated into the plan for the Property.

In particular, dry stock farming will continue on effective pastoral areas of the Property beyond the Site. If the golf Project proceeds, dairy farming on the Property will be retired. This will also result in the cessation of dairy effluent irrigation activities adjacent to Muriwai Road and require a new woolshed and cattle yards along with reorientation of related farming operations. The indicative location of the new woolshed and yards is shown in Figure 72.

The overall extent to which farming activities will continue is summarised in Table 12 and Figure 72. More details are provided in the Farm Operations Report (Appendix 9).

Table 12: Summary of Current and Post-Project Farming Production

Area	Production Zone	DM Production /HA		Total Pasture Production	Area Lost to Golf Project		Total Pasture Production
		Eff Ha	Tonnes		Project	Retained	
Dairy	1	72	9,768	703,296	6	66	644,688
Woolshed	2	136	8,370	1,138,320	29	107	895,255
Lake	3	89	6,439	573,071	68	21	135,219
Quarry	4	61	6,439	392,779	0	61	392,779
		358		2,807,466	103.04	255	2,067,941
Current Sheep and Beef		286	7,357	2,104,170			
Proposed Sheep and Beef		255	8,111	2,067,941			
Difference		31		36,229	-1.7%		

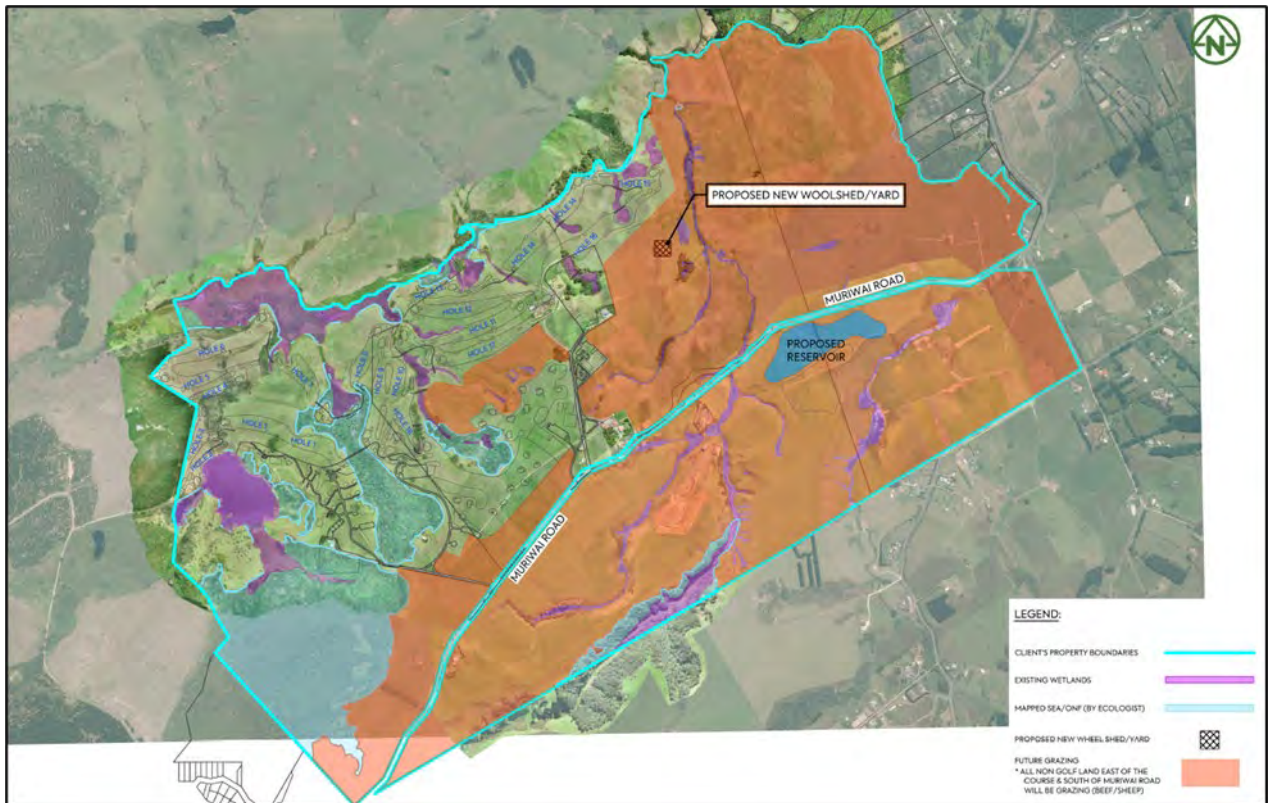


Figure 72: Future Pastoral Land Use (orange areas)

3.17.11 Ongoing Quarry Operations

Quarry operations will continue subject to relevant resource consent requirements.

3.18 MAINTENANCE ACTIVITIES

3.18.1 Buildings, Plant and Equipment

Maintenance of all Project buildings will be to a very high standard - typical of premium facilities. All plant, equipment, roads and other infrastructure established as part of the Project will be maintained in accordance with best practice and/or manufacturer's recommendations.

3.18.2 Turf and Turf Management

Descriptions of golf course maintenance activities, such as mowing, topdressing, turf renovation and pest control, are provided in the Golf Course Construction, Operation and Maintenance Report (Appendix 3).

3.18.3 Vegetation

To ensure golf can continue to be played as the design intends, there will be a need to trim vegetation in isolated locations where natural growth is compromising the golf playing experience.

In these instances, trimming will be undertaken by appropriately experienced arborists. Vegetation trimming methodology information is provided in the Arboriculture Report (Appendix 12).

3.19 THE PROJECT AT A GLANCE

Tables 13 – 14 summarise the key parameters of the Project description at a glance. All parameters presented in **bold** text within these tables are proposed maxima. All other parameters stated are anticipated or approximate values.

Table 13: Summary Table of Key Project Elements

Golf Areas	19 Hole Golf Course	Area	72 hectares
	Warm-up Fairway		
	Short Game Practice Area		
Clubhouse	Clubhouse Building	Maximum GFA	2,294 m²
	Envelope	Maximum rolling height Development Location Envelope	12 m 1.02 hectares (Refer Figure 73)
	Car Park	Area Parking Spaces	4150 m ² 104
Sports Academy Envelope	Academy Building	Maximum GFA Maximum Roof Area Maximum rolling height	890 m² 1580 m² 7 m
	Indoor Tennis Building	GFA Maximum height	2,025 m² 14 m
	Other Sports Academy Golf Areas	9 Hole Short Course Practice Green Academy Range	
	Car Park	Area Parking Spaces	2325 m ² 69
GPMC Envelope	Equipment Store and Workshop	GFA Maximum height	1000 m² 8.3 m
	Golf Course Maintenance Office Building	GFA Maximum height	250 m² 4.7 m
	Operations Building	GFA Maximum height	300 m² 4.7 m
	Bulk Store	GFA	300 m²

		Maximum height	6.4 m
	Washdown Area and Chemicals / Fertiliser Store	GFA Maximum height	250 m² 5.5 m
	Fuel Store	GFA Maximum height Maximum Diesel Storage Maximum Petrol Storage	220 m² 4.7 m < 5,000 kg 2,000 kg
	Combined Other Open-top Storage Bays: Greenwaste / Compost / Rubbish / Recycling Materials x 3	Area Height	270 m ² 3 m
	Car Parking	Area Parking Spaces	1951 m ² 50
Lodge Envelope / Design Criteria	Maximum total GFA - Lodge and accommodation buildings		8,150 m²
	Total Lodge Development Area		Up to 8.0 hectares
	Maximum floor area ratio (i.e. GFA / Total development area)		1,500m² / hectare
	Lodge buildings maximum rolling building height		11 m
	Accommodation buildings maximum rolling building height		6 m
	Wellness Centre maximum rolling building height		8 m
	Building setback from Lake Ōkaihau Escarpment		> 10 m
	Earthworks setback from identified archaeological Sites		> 10 m
	Total Occupancy	No. of people	89
	Lodge Building Car Parking	Area Parking Spaces	300 m ² 12
	Guest Car Parking	Area Parking Spaces	1278 m ² 48
	Staff Car Parking	Area Parking Spaces	850 m ² 35
	Wellness Centre Car Parking	Area Parking Spaces	160 5
Helipads		3	
Farming	Existing Farm	Dairy Unit	72 ha
		Dry Stock Unit	286 ha
		Total Farm	358 ha
	Future Farm	Dairy Unit	0 ha
		Dry Stock Unit	255 ha



		Total Farm	255 ha
Water Storage	Off-Stream Water Storage Reservoir	No. of Reservoirs Area Height Storage Volume	1 37,000 m ² < 4m 140,000 m ³
Vehicle Access	Muriwai Road	No. of new or upgraded vehicle crossings off Muriwai Rd	2
Domestic Wastewater	On-Site Treatment	No. of treatment plants No. of disposal fields	3 3

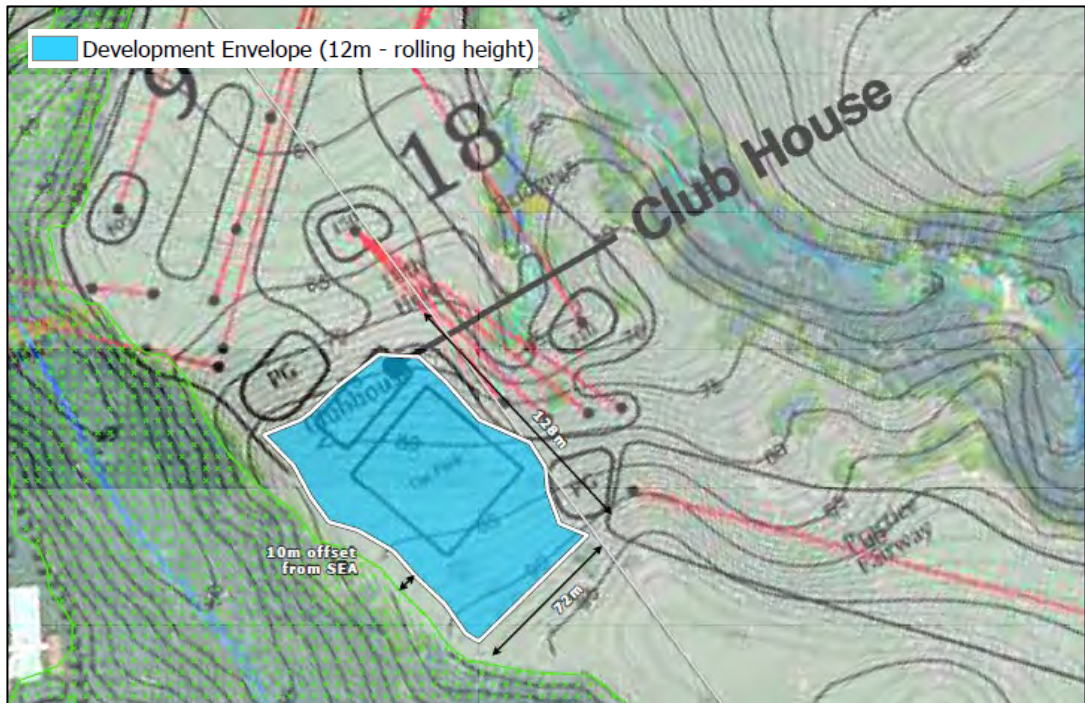


Figure 73: Clubhouse Development Envelope.

Table 14: Summary Table of Key Operational Elements

Patronage	Golf	No. of golf rounds	12,500 per annum (approx.)
	Lodge	Average Occupancy	6,351 unit-nights per annum ²⁴
Staff	Clubhouse	FTE	25.5 (seasonal)
	Golf Course	Caddies	40
	Sports Academy and Office Space	FTE	37
	Sports Academy Café	FTE	9
	Golf Maintenance	FTE	23
	Housekeeping and Laundry	FTE	23
	Shared Services	FTE	7
	Lodge	FTE	51
	Hours of Operation	Golf Course and Clubhouse	7:00PM - 10:00PM 7 days a week
Sports Academy		8:00AM - 8:00PM 7 days a week	
Sports Academy Range and Café		7:00AM - 10:00PM 7 days a week	
Golf and Property Maintenance Complex		5:30AM – 8:00PM 7 days a week	
Lodge		24 hours, 7 days a week	
Traffic	Estimated peak hour trip generation (Year 3)	Visitors	30
		Staff	62
		Total	92
Noise	Maximum estimated construction noise	At nearest receiver	50 dB LAeq
	Maximum estimated operational noise	At nearest receiver	Less than 50 dB LAeq
Helicopter Flights	Estimated Maximum Movements	Daily	6
		Weekly	30
Fresh Water Demand	Irrigation of golf and landscape planting areas.	Total Irrigable Area	55 Ha
		Maximum daily (Grow-In)	3,030 m ³ per day
Maximum Daily (Operational)		2,150 m ³ per day	
Average Seasonal		132,695 m ³	
	1 in 10-year Drought	237,110 m ³	
	Maximum seasonal	346,076 m ³	
	Potable		36.9m ³ /d

²⁴ Assumes 60% occupancy



Irrigation Water Supply	Raurataua Stream high-flow harvesting take limited to times of stream flows above median flow of 131 l/s.	Maximum instantaneous take rate	30 L/s
	Deep groundwater take from volcanic aquifer	Instantaneous take rate	20 L/s
		Maximum daily take rate	1,728 m³/d
		Average seasonal volume	50,000 m ³
		Max seasonal volume	180,000 m³
Potable / Domestic Water Supply	Deep groundwater	Annual	9,454 m ³
	Rain harvesting	Annual	4,015 m ³
Domestic Wastewater	Estimated Maximum Generation	Lodge, Clubhouse, Sports Academy & GPMC	33.15 m ³ /d
		Golf Course Toilets	0.5 m ³ /d
Fertiliser	Golf Course (72 hectares)	Nitrogen Phosphorus Potassium	49.1 (kg/ha/yr) 18.1 (kg/ha/yr) 35.9 (kg/ha/yr)

Table 15: Summary Table of Construction Related Elements

Construction Earthworks	Earthworks – Includes: Bulk earthworks; and Minor earthworks (e.g. fairway shaping, drainage installation, and turfing)	Total Area	99 hectares
		Max Unstabilised Area	50 hectares
		Total Cut	590,000 m ³
		Total Fill	589,000 m ³
	Earthwork Season Excluding Approved Exemptions		1st Oct – 30th April
	Soil Disturbance	Within a Natural Wetland	0 hectares
		Within 10m of a Natural Wetland	2.5 hectares
		Within an SEA (Council)	0.77 hectares
		Within a Kauri Die-Back Disease Restricted Area	2.50 hectares
		Within an ONF	43 m ² / 8 m ³ (ONF 72)



	Imported Construction Material Estimates	Sand Gravel	52,000 m ³ 20,700 m ³
Vegetation	Indigenous Vegetation	Area affected in an SEA Area affected in an ONF	1,400 m ² 0 m ²
	Other indigenous vegetation removed from outside an overlay	Contiguous Non-Contiguous	900 m ² 0 m ²
Stream and Lakebed Structures	Culverts	No. of stream culverts Total length of culverted and rip-rapped stream bed	1 175 m
	Bridges	No. of bridges Maximum span	13 90.2 m
	Surface water intake	No. of intakes	1
	Other structures attached to bridges	Communication and power cables Irrigation water pipelines	Various
Groundwater bores	Water supply	No. of new bores (excluding consented deep groundwater bore)	1
New impermeable surfaces	Excludes unsealed or gravel tracks and path		68,600 m ²
Construction General	Timeframe	Expected duration	36 months
	Construction Hours	Monday-Saturday	7:30AM-6:00PM



4. STATUS OF ACTIVITIES

4.1 INTRODUCTION

Rule Assessment and Statutory Requirements

This section identifies the RMA status of the proposed activities previously described and discusses the extent to which those activities need to be the subject of resource consent applications.

The proposed development sits within the jurisdiction of the Auckland Council. The relevant planning instrument for this council is the Auckland Unitary Plan (“**AUP**”). In this instance, it is also appropriate to consider relevant National Environmental Standards (“**NES**”) that might require additional consents.

The status of the proposed activities with respect to these instruments is presented below.

4.2 NATIONAL ENVIRONMENTAL STANDARDS

There are seven operative NESs that have come into effect as regulations to date. Of relevance in this case are;

- Resource Management (National Environmental Standards for Sources of Drinking Water) Regulations 2007 (“**NESDW**”);
- Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (“**NESCS**”); and
- Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (“**NESFW**”).

The NESDW does not prescribe any consenting requirements, therefore, the assessment to determine whether any NES consents are required is limited to the NESCS and the NESFW.

4.3 NATIONAL ENVIRONMENTAL STANDARDS FOR ASSESSING AND MANAGING CONTAMINANTS IN SOIL TO PROTECT HUMAN HEALTH 2011

The NESCS came into effect on 1 January 2012 and provides for territorial authority functions under s31 of the RMA with respect to contaminated land management. The NESCS aims to ensure that land affected by contaminants in soil is appropriately identified and assessed before it is developed, and if necessary, the land is remediated, or the contaminants contained to make the land safe for human use. Clause 5(1) of the NESCS states that it applies when:

“...a person wants to do an activity described in any of subclauses (2) to (6) on a piece of land described in subclause (7) or (8):”

Clause 5(7) of the NESCS states:

- (7) *The piece of land is a piece of land that is described by 1 of the following:*
- (a) *an activity or industry described in the HAIL is being undertaken on it;*
 - (b) *an activity or industry described in the HAIL has been undertaken on it;*
 - (c) *it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.*

PDP prepared a PSI Report (Appendix 6) which identifies that parts of the Site have historically been used as a kumara crop area, treated timber storage area, boarding house and sheep spray shower and woolshed, therefore falling within related HAIL categories. As a result, qualifying as (or falling within) a ‘piece of land’ under Regulation 5(7) of the NESCS. The PSI Report also recommended a DSI be undertaken on the identified potential contamination sources to determine the nature and extent of impacts to ground as a result of these current/historical activities.

The DSI was also completed by PDP (Appendix 6), which confirmed that the results of the historical review identified a number of potential and confirmed HAIL land uses at discrete areas across the Site. The DSI also determined the nature and extent of impacts of the contaminants of potential concern to ground (that is to be disturbed by the proposed development) as a result of the current or historical activities that have or have potentially been undertaken prior to completing any bulk soil disturbance activities on the Site.

4.3.1 Soil disturbance and land use change

Earthworks and remediation associated with the Project will require land disturbance activities exceeding the NESCS permitted thresholds of a volume of no more than 25 m³ per 500 m² being disturbed or, for all other purposes combined, a maximum volume of 5 m³ per 500 m² soil being removed from the Site.

Noting the volumes of disturbance, and contaminant concentrations measured onsite and recorded in the DSI report provided in Appendix 7, for those discrete areas of the Site where HAIL activities have occurred and COPC have been detected in soil samples at concentrations above the published background concentrations of non-volcanic soils in the Auckland region but below the NESCS SCSs/EGVs for recreational and commercial/industrial land use, PDP have confirmed that a **controlled activity** consent under Regulation 9 of the NESCS is required for the proposed soil disturbance and change in land use. This will require a Contaminated Soils Management Plan (“**CSMP**”) to be prepared prior to undertaking any earthworks at the following areas:

- Former Boarding House.

- Sheep Spray Shower & Woolshed.
- Treated Timber Storage.

The NESCS does not apply to the soil disturbance associated with the development of the Historical Kumara Crops area as the contaminant of potential concern that have been detected in the soil samples are at concentrations below the published background concentrations of non-volcanic soils in the Auckland region in compliance with Regulation 5(9) of the NESCS.

The NESCS also does not apply to the areas of the Site that are proposed to be developed (i.e. change in land use and/or soil disturbance) but no contamination/HAIL sources have been identified, or where production land continues to be used for these purposes as part of the operational farm.

Table 16: Consents Sought under the NES CS

Activity	Regulation	Status	Comment
Land disturbance activities on HAIL Sites	Reg 9(1)	Controlled	Earthworks and remediation associated with the Project will require land disturbance activities on HAIL Sites exceeding the NESCS permitted threshold for area of disturbance however, the DSI Report confirms that the soil contamination does not exceed the relevant standards of Regulation 7 of the NESCS and that a Site management plan is required.
Changing the use of a piece of land that does not comply with reg 8(4).	Reg 9(3)	Controlled	Change in use of the Site based on identified concentration levels at the HAIL Sites as identified within the DSI Report.

4.4 RESOURCE MANAGEMENT (NATIONAL ENVIRONMENTAL STANDARDS FOR FRESHWATER) REGULATIONS 2020

The NESFW came into effect from 3 September 2020 to regulate activities that pose risks to the health of freshwater and freshwater ecosystems and to uphold Te Mana o Te Wai.

To achieve its purpose, the NESFW prescribes national environmental standards for activities that pose risks to freshwater and freshwater ecosystems. If the NESFW specifies

an activity status, this overrides any activity status separately identified in a Regional Plan(s) for the respective activities.

- The NESFW applies to the following Project elements:
- Earthworks and vegetation clearance activities associated with the construction of the golf course and supporting infrastructure within the 10m setback of a natural wetland²⁵;
- The taking of surface water from the Raurataua Stream and the taking of groundwater at locations between the 100m and 10m setbacks from a natural wetland;
- The diverting and discharging of stormwater and golf course drainage water to land at locations between the 10m and 100m setbacks from a wetland;
- Reclamation of a section of the bed of a stream;
- The construction of wetland utility structures including boardwalks, walking tracks and bridges connecting them, within a 10 m setback from a wetland, including associated earthworks and vegetation clearance activities, and any associated take, diversion, damming or discharge of water; and
- Wetland restoration activities exceeding 500m².

These activities require consideration under Part 3, Subpart 1 (Natural Wetlands) and Subpart 3 (Passage of fish affected by structures) of the NESFW, as discussed below.

4.4.1 Fish passage

With regards to fish passage, the NESFW regulates structures in a river or connected area²⁶ that may impact fish passage, such as a culvert, weir, flap gate, dam or ford. The Project does not involve any weirs, flap gates, dams or fords in a river, stream or connected area, however, a stream culvert is required for the golf course to function at hole 14. This structure has the potential to impede fish passage. Accordingly, NESFW regulations for fish passage²⁷ are relevant for the proposed culvert.

²⁵ Natural wetland defined in the NPS FM - natural wetland means a wetland (as defined in the Act) that is not:
(a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or
(b) a geothermal wetland; or
(c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain-derived water pooling

²⁶River or connected area means— (a) a river; or (b) any part of the coastal marine area that is upstream from the mouth of a river.

²⁷NES FW Regulations 63-68.

4.4.2 Earthworks

The design approach adopted by the Project achieves avoidance of construction activities occurring within natural wetlands. The design also does not require any river or stream diversions or any river reclamations. Avoidance of earthworks occurring within a 10m setback of a wetland, however, was not achievable. As a result, vegetation clearance and earthworks associated with construction activities will occur within 10m of wetland areas within the golf course footprint. As golf course developments are not explicitly provided for under the NESFM, they fall for consideration under 'Other Activities', and as a result, the construction activities are deemed to be **Non-complying Activities** under Regulation 54(a) and (b).

4.4.3 Taking of surface water and groundwater

The Project involves the taking of surface water, via an intake structure from the Rautaua Stream. Although the intake will not be in a wetland, it is at a location within 10m – 100m upstream from riparian wetland areas downstream.

The Project also involves taking of deep groundwater via a bore at a location within a 10m – 100m setback from a wetland.

As these activities are not provided for elsewhere within the NES FM, they are considered **Non-complying Activities** under Regulation 54(c).

4.4.4 River Reclamation

The Project includes infilling of a small section (approximately 16m) of intermittent stream bed alongside hole 1 fairway. This is a **Discretionary Activity** under Regulation 43.

4.4.5 Diversions and discharges in the vicinity of a wetland

Once operational, the stormwater runoff and drainage water from some areas of the golf course will be discharged to land at locations within the 10m - 100m setback of a wetland.

As this activity is not provided for elsewhere within the NES FM, it is considered a **Non-complying Activity** under Regulation 54(c).

4.46 Wetland Utility Structures

Wetland utility structures²⁸ will form part of the golf course and wider development and will principally be in the form of boardwalks, bridges and tracks traversing over wetland areas or through areas within a 10m setback from a wetland.

²⁸ **wetland utility structure**— (a) means a structure placed in or adjacent to a wetland whose purpose, in relation to the wetland, is recreation, education, conservation, restoration, or monitoring; and
(b) for example, includes the following structures that are placed in or adjacent to a wetland for a purpose described in paragraph (a): (i) jetties;



The construction of these structures will involve vegetation clearance and land disturbance within a 10m setback from a wetland and have the potential to cause diversion and discharge of water within the 100m setback.

Given these structures support recreation activities being the golf course, as well as supporting education through the inclusion of signage and discrete information boards about the Site's natural features and habitats, the construction of these structures is provided for as a **Restricted Discretionary Activity** under Regulation 42.

It is expected that any necessary maintenance activity will comply with the **Permitted Activity** requirements of Regulation 43.

4.4.7 Restoration of Wetlands

The Project includes restoration activities within a number of wetland areas focused on the restoration and enhancement of existing wetland habitat.

Regulation 38 of the NES FW provides for vegetation clearance, earthworks, or land disturbance, and the taking, use, damming, diversion, or discharge of water within a natural wetland for the purpose of wetland restoration as a **Permitted activity**, subject to compliance with the permitted activity conditions.

Where the permitted activity conditions cannot be complied with, the activities would fall for **Restricted Discretionary** consideration under Regulation 39.

The proposed restoration activities have been developed and designed to comply with the relevant conditions of Regulation 38 (which include the requirement to comply with the relevant "General" conditions on natural wetland activities provided in Regulation 55) particularly through the required notification to Council and also through the provision of management plans and / or works plans for restoration works.

However, the vegetation clearance and earthworks / land disturbance associated with the wetland restoration activities will exceed the permitted limit of 500 m² for activities specified by Regulation 38(4)(b). As such, resource consent is sought for the activities associated with wetland restoration works as a **Restricted Discretionary Activity** under Regulation 39.

-
- (ii) boardwalks and bridges connecting them;
 - (iii) walking tracks and bridges connecting them;
 - (iv) signs;
 - (v) bird-watching hides;
 - (vi) monitoring devices;
 - (vii) maimai



A key requirement of Regulation 39 is the development and provision of a Wetland Restoration Plan (“WRP”) in accordance with the requirements of Schedule 2 to the NESFW. The WRP is provided in the Ecology Report (Appendix 11).

4.4.8 Wetland drainage

As set out in the Water Effects Summary Report (Appendix 10) and the Ecology Report (Appendix 11), and summarised later in Section 5 of this AEE, no works associated with the proposed development will result in ‘the complete or partial drainage of all or part of the wetland area’.

On that basis, Regulations 45(3)(b), 52 and 53 of the NES FW do not apply.

Table 17: Consents Sought under the NES FW

Activity	Regulation	Status	Comment
Vegetation clearance and earthworks outside of but within 10m of a natural wetland not resulting in complete or partial drainage.	Reg 54(a) & (b)	Non-complying	Golf course developments are not explicitly provided for under the NESFM. These clearance and earthworks activities therefore trigger the ‘Other Activities’ classification of the NESFM.
Taking, using, damming, diversion and discharging of water outside of but within 100m of a natural wetland.	Reg 54(c)	Non-complying	The Project also involves taking of deep groundwater via a bore at a location within a 100m setback from a wetland and taking of surface water in a location within 10m – 100m upstream of a wetland. The Project will also require the diversion of stormwater and drainage water from areas of the golf course at locations within a 100m setback of a natural wetland.
Reclamation of a section of the bed of a river.	Reg 43	Discretionary	The infilling of a small section (approximately 16m) of intermittent stream bed near its headwaters alongside hole 1 fairway is required to enable the functioning of the golf course as a Marquee Golf Course while

Activity	Regulation	Status	Comment
			avoiding high value Pohutukawa trees.
Vegetation clearance and earthworks or land disturbance outside of but within 10m of a natural wetland and taking, using, damming, diverting and discharging of water within 100m setback from a natural wetland for the construction of wetland utility structures.	Reg 42	Restricted Discretionary	Wetland utility structures will form part of the golf course and wider development and will principally be in the form of boardwalks, bridges and tracks traversing over wetland areas or through areas within a 10m setback from a wetland.
Vegetation clearance and earthworks or land disturbance outside but within 10m of a natural wetland and taking, using, damming, diverting and discharging of water outside but within 100m from a natural wetland for the restoration of natural wetlands.	Reg 39	Restricted Discretionary	The vegetation clearance and earthworks / land disturbance associated with the wetland restoration activities will exceed the permitted limit of 500 m ² for activities specified by Regulation 38(4)(b).

4.5 AUCKLAND UNITARY PLAN

The AUP (Operative in part) is the relevant statutory instrument regulating natural and physical resources within the Auckland Region by combining the regional policy statement, regional coastal plan, regional plans and district plans into one combined plan.

4.5.1 Zoning

Figure 5 in Section 2.7 of this AEE confirms the Site sits entirely within the Rural - Rural Production Zone.

4.5.2 Overlays

Section 2.3.2 of this AEE, and in particular Figure 6, summarises the various overlays that apply to the Muriwai Downs Property and local surrounds. The following sections provide more detail about these overlays.

Wetland Management Areas

The Wetland Management Areas Overlay identifies significant wetlands. The overlay provisions protect wetlands from the adverse effects of discharges, water takes, wetland drainage, invasive pest species and their physical disturbance. Wetlands are one of Auckland's rarest and most at-risk ecosystems, supporting valuable plant and animal communities. They naturally filter contaminants and regulate water flow (assisting in flood attenuation) and reduce contaminants in water. Wetlands also present important cultural, recreational and amenity values.

Lake Okaihau (470) and Okiritoto Wetland (464) fall within this overlay.

Significant Ecological Areas (Terrestrial)

Natural ecosystems and indigenous biological diversity contribute to the character and identity of Auckland and distinguish it from other regions of New Zealand. Healthy and functioning ecosystems contribute to improved water quality, soil conservation and carbon sinks, as well as providing opportunities for our recreation, economic, and cultural use. However, development has resulted in the loss of habitats and a reduction of biodiversity. Changes in rural land uses, and the ongoing degradation from pest species continue to threaten the maintenance of indigenous biodiversity. In order to protect and better provide for the management of areas that contribute significantly to Auckland's biodiversity it is important to spatially identify them as significant ecological areas.

There are large areas of the Site falling within this overlay. They generally align with the Okiritoto Stream channel, Lake Okaihau and other areas of indigenous vegetation bush / kauri forest at the western end of the Site and are identified as:

- SEA_T_5524 - Factors 1 (Representativeness), 2 (Threat Status and Rarity), 3 (Diversity), 4 (Stepping Stones, Migration Pathways and Buffers) and 5 (Uniqueness or Distinctiveness).
- SEA_T_5525 - Factors 1 (Representativeness), 2 (Threat Status and Rarity) and 3 (Diversity).
- SEA_T_6575 - Factors 1 (Representativeness), 2 (Threat Status and Rarity), 3 (Diversity) and 4 (Stepping Stones, Migration Pathways and Buffers).
- SEA_T_2763 - Factors 1 (Representativeness) and 2 (Threat Status and Rarity).



- SEA_T_5482 – Factors 3 (Diversity) and 4 (Stepping Stones, Migration Pathways and Buffers).

Natural Stream Management Areas

This overlay identifies river and stream reaches with high natural character and high ecological values. They generally have an unmodified river or stream bed with existing indigenous riparian vegetation on both sides. The presence of indigenous riparian vegetation indicates that the river or stream has high ecological values and water quality.

At the western end of the Muriwai Downs Property, a stream classified as a Natural Stream Management Area is present within natural bush (refer blue dotted area in Figure 6 in Section 2.3 2).

Natural Lake Management Areas

The Natural Lake Management Areas Overlay applies to natural lakes located in rural areas. The overlay identifies the total lake surface area and a 50m buffer surrounding the lake edge, measured landward from the mean annual water level. Water levels of natural lakes are dependent on groundwater hydrogeology, water uptake rates by vegetation and water takes. Natural lake management areas have high water quality, indigenous vegetation and wetlands and support significant biodiversity. Many natural lakes suffer from poor water quality due to nutrient and sediment runoff from surrounding land. The presence of invasive pest species also adversely affects these lakes.

Lake Okaihau (470) is a Natural Lake Management Area.

Outstanding Natural Features

Two outstanding natural features are located on the Site (Schedule 6 of the AUP). These include the Toroanui and Okiritoto Falls (225) and Lake Okaihau (72).

Quality Sensitive Aquifer Management Areas

The Quality-sensitive Aquifer Management Areas Overlay contains aquifers that are shallow and unconfined and therefore susceptible to pollution from surface sources such as excess fertiliser application or discharges of contaminants such as stormwater or sewage. The potential for contamination is highest in the volcanic aquifers where discharge to aquifers is most direct. These aquifers are important sources of water for rural and industrial purposes, as well as providing base flow to surface streams in some areas.

The Quality-sensitive Aquifer Management Area underlies much of the Site (refer area filled with light blue circles in in Figure 6 in Section 2.3 2).

Sites and Places of Significance to Mana Whenua

There are no Sites and Places of Significance to Mana Whenua (Schedule 12 of the AUP) located within the Site, however, other records show the Site does include some sites that are likely to be significant to Mana Whenua (refer Section 2.2.2 Figure 4)

Historic Heritage

There are also no registered Sites of Historic Heritage within Schedule 14.1 of the AUP, however, other records show the Site does include some recognised sites (refer Figure 37). These Sites are also discussed earlier in Section 2.10.



Figure 74: Site map showing locations of sites within the publicly available cultural heritage inventory. Red circles denote archaeological sites and blue squares denote historic structures

4.5.3 AUP Rule Framework

Rules within the AUP determine the status of a particular activity (i.e. Permitted through to Prohibited). The rule framework within the AUP is relatively complex and consists of the following:

- Definitions;
- General Rules;
- Overlay Rules;
- Auckland-wide Rules; and
- Zone Rules.

Activities provided for as permitted, controlled or restricted discretionary activities are normally subject to specific performance standards. These standards set limits on the extent to which an activity is permitted or may be assessed as a controlled or restricted discretionary activity. Exceedance of a standard normally results in the activity being considered as a more restrictive class of activity.

The application seeks all of the necessary resource consents to authorise the construction, development, use and ongoing maintenance of all activities associated with the Project. The relevant rules infringed, based on our interpretation, and with respect to the construction and operation stages of the Project, have been set out in the tables below.

Table 18: Consents Sought for Construction Activities under the AUP

Activity	Rule	Status	Comment
Chapter E15 - Vegetation Clearance			
Vegetation alteration or removal, including cumulative removal on the Site over a 10-year period of greater than 250m ² of indigenous vegetation.	E15.4.1 (A10)	Restricted Discretionary	The Project includes removal of more than 250m ² of indigenous vegetation within the Project and construction footprint.
Vegetation alteration or removal within 50m of the shore of a lake	E15.4.1 (A13)	Restricted Discretionary	The Project includes vegetation removal within 50m of the shore of Lake Okaihau, a Natural Lake

Activity	Rule	Status	Comment
within a Natural Lake Management Area			Management Area including a small stand of eucalypts.
Vegetation alteration or removal within 10m of a rural stream within the Rural-Rural Production Zone.	E15.4.1 (A17)	Restricted Discretionary	The Project includes vegetation removal within 10m of rural streams within the construction footprint.
Vegetation alteration or removal within 20m of a natural wetland and in the bed of a river or stream, or lake	E15.4.1 (A18)	Restricted Discretionary	The Project includes removal of vegetation within 20m of natural wetlands on the Site.
Vegetation alteration or removal within a SEA-T where activities in Table E15.4.2 do not comply with one or more of the standards in E15.6 and any vegetation alteration or removal not otherwise provided for.	E15.4.2 (A43)	Discretionary	The Project involves indigenous vegetation removal within an SEA-T.
Tree removal of any tree greater than 4m in height or greater than 400mm in girth	E17.4.2 (10)	Restricted Discretionary	Some vegetation is proposed for removal associated with Muriwai Road widening works necessary to provide safe vehicle access.
Chapters E3, E11 & E12 - Earthworks and Land Disturbance activities			
To undertake earthworks: (i) greater than 50,000m ² where land has a slope less than 10 degrees; and (ii) greater than 2,500m ² where the land has a	E11.4.1 (A5) & (A8)	Restricted Discretionary	The bulk earthworks associated with the Project will cover in excess of 50,000m ² of land of varying slopes.

Activity	Rule	Status	Comment
slope equal to or greater than 10 degrees.			
Land disturbance not otherwise provided for being to undertake earthworks in (i) an SEA greater than an area of 5m ² ; and (ii) a volume of 5m ³ .	E11.4.3 (A28) & (A30)	Restricted Discretionary	The bulk earthworks associated with the Project will involve the disturbance of approximately 1,400m ² of land within an SEA-T.
Land disturbance not otherwise provided for being to (i) undertake earthworks greater than 2500m ² ; and (ii) a volume greater than 1,000m ³ .	E12.4.1 (A6) & (A10)	Restricted Discretionary	The bulk earthworks associated with the Project consists of approximately 590,000m ³ of cut to fill activities over an area of approximately 99 hectares.
Land disturbance within Lake Okaihau ONF 72 classified as Site Type C within Schedule 6.	E12.4.3 (A39)	Restricted Discretionary	Land disturbance includes a 43 m ² area and an 8 m ³ volume of disturbance within (ONF 72)
Depositing clean fill, excluding litter, refuse, other waste and/or contaminated material, in an SEA-T, Wetland Management Area and Lake Management Area associated with the construction of a golf course and ancillary infrastructure both outside and within an overlay.	E3.4.1 (A6)	Non-complying	The earthworks activities will involve approximately 1,400m ² of disturbance of areas of an SEA-T, and minor areas of mapped Wetland Management and Lake Management Areas (including placement of fill, topsoil or turf) within the construction footprint.
Any activity not complying with the	E3.4.1 (A9)	Discretionary	The infilling of a small section (approximately



Activity	Rule	Status	Comment
general permitted activity standards in E3.6.1.1 or the specific activity standards in E3.6.1.2 and E3.6.1.3			16m) of intermittent stream bed near its headwaters alongside hole 1 fairway is required to enable the functioning of the golf course as a Marquee golf course while avoiding high value Pohutukawa trees.
Works below the natural ground level in an SEA	E11.4.3 (A23)	Restricted Discretionary	The Project is likely to include the construction of below ground irrigation and drainage infrastructure in small sections of SEA-T requiring trenching.
Chapter E3 - Structures in, on, under or over the bed of lakes, rivers, streams (including intermittent stream) and wetlands			
Structures associated with the enhancement and restoration of lakes, rivers, streams or wetlands not otherwise provided for.	E3.4.1 (A28)	Restricted Discretionary	Construct, use and maintain structures including boardwalks, walking tracks and bridges connecting them, associated with wetland enhancement and restoration of Lake Okaihau, Okiritoto Wetland, streams and other wetlands both outside and within a SEA-T, Wetland Management and Lake Management overlay.
Bridges or pipe bridges complying with the standards in E3.6.1.16	E3.4.1 (A29)	Discretionary	Construct, use and maintain bridges, including those also supporting pipes, within



Activity	Rule	Status	Comment
			an overlay which comply with the relevant standards in E3.6.1.16.
New cables or lines that cross over a river or stream which do not require support structures in the watercourse complying with the standards in E3.6.1.17	E3.4.1 (A31)	Restricted Discretionary	The Project includes the placement of communication and power cables and irrigation water lines that cross over a river or stream within a SEA-T overlay that will not require support structures in a waterway and will meet the standards in E3.6.1.17.
Culverts or fords more than 30m in length when measured parallel to the direction of water flow.	E3.4.1 (A33)	Discretionary	Construct, use and maintain a culvert, being more than 30m in length within unnamed tributary of the Okiritoto / Raurataua Stream.
Chapter E4 - Other discharges of contaminants			
Discharge of water or contaminants (including washwater) onto or into land and/or into water not complying with the relevant standards or not otherwise provided for by a rule in the Plan	E4.4.1 (A15)	Restricted Discretionary	To authorise discharges of incidental residual flocculant chemical (or similar agents) used as part of sediment control devices during earthworks.
Chapter E7 - Taking, using, damming and diversion of water and drilling			
Holes or bores not meeting the permitted activity standards or controlled activity	E7.4.1 (A42)	Restricted Discretionary	To construct and use a groundwater bore at or about NZTM 1729833mE,



Activity	Rule	Status	Comment
standards or not otherwise listed			5925837mN for the abstraction of groundwater for irrigation and potable / domestic water supply purposes.
To construct, use and maintain an off-stream water reservoir for the purpose of storing water for irrigation, Site maintenance and dust suppression activities that does not meet the permitted activity standards or controlled activity standards.	E7.4.1 (A35)	Discretionary	To construct an off-stream reservoir with a capacity of 140,000m ³ and a surface area of approximately 37,000m ² , for the purpose of storing surface and ground water for use within the gold course development and associated buildings for irrigation and potable supply.

Chapter E9 - Stormwater quality - High contaminant generating car parks and high use roads

Development of a new or redevelopment of an existing high contaminant generating car park.	E9.4.1 (A6)	Controlled	<p>The Project provides for the development of a total of 6 new high contaminant-generating car parks as follows:</p> <ul style="list-style-type: none"> ➤ Clubhouse x 2 – 4,153 m², approx. 104 car parks. ➤ Academy – 2,325 m², approx. 69 car parks. ➤ GPMC – 1,951 m², approx. 50 car parks. ➤ Lodge Guest Car Park – 1,278m²,
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Activity	Rule	Status	Comment
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approx. 48 car parks.

- Lodge Staff Car Park – 850 m², approx. 35 car parks.

Chapter E23 - Signage

Comprehensive Development Signage	E23.4.1 (A53)	Restricted Discretionary	Provision of signs on Muriwai Road.
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Chapter E27 - Transport

Parking, loading and access which is an accessory activity but which does not comply with the standards for parking, loading and access	E27.4.1 (A2)	Restricted Discretionary Activity	Preliminary design of visitor carparks for the proposed Wellness Centre and the GPMC (refer to McKenzie and Co engineering plans on Sheets 7 and 15 respectively) do not comply with the relevant permitted activity standard for manoeuvring.
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Construction or use of a vehicle crossing where a Vehicle Access Restriction applies under Standards E27.6.4.1(2) or E27.6.4.1(3)	E27.4.1 (A5)	Restricted Discretionary Activity	<p>Construction, upgrade and use of up to 2 vehicle crossings to the Site off Muriwai Road. Since Muriwai Road is an arterial road, these accessways do not comply with standard E27.6.4.1(3)(c).</p> <p>Additionally, the proposed northern vehicle crossing measures 9.7m wide and the proposed</p>
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Activity	Rule	Status	Comment
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southern vehicle crossing measures 10.1m wide. Therefore, both crossings exceed the standard for rural zones (E27.6.4.3.2 (T156)).

Chapter E30 - Contaminated Land

Discharges of contaminants into air, or into water, or onto or into land not meeting permitted activity Standard E30.6.1.1; E30.6.1.2; E30.6.1.3; E30.6.1.4; or E30.6.1.5	E30.4.1 (A6)	Controlled Activity	Discharges of contaminants into air, or into water, or onto or into land from disturbing soil on land containing elevated levels of contaminants (as identified in the DSI) (Appendix 7)).
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Table 19: Consents Sought for Ongoing / Operational Activities under the AUP

Activity	Rule	Status	Comment
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AUP - Ongoing / operational activities

Chapter H19 - Activities in Rural zones

Visitor Accommodation (Luxury Lodge) in a rural zone.	H19.8.1 (A34) & (A36)	Discretionary	To operate, use and maintain a luxury Lodge complex including; <ul style="list-style-type: none"> ➤ A main Lodge building; ➤ Accommodation units; ➤ A wellness centre; and
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Activity	Rule	Status	Comment
			<ul style="list-style-type: none"> <li>➤ All associated ancillary buildings and supporting infrastructure; <li>➤ within the Rural – Rural Production Zone.
Organised Sport and Recreation and Clubrooms in a rural zone	H19.8.1 (A52) and (A54)	Restricted Discretionary	<p>To operate, use and maintain organised sport and recreation facilities including;</p> <ul style="list-style-type: none"> <li>➤ A 19-hole golf course with warm-up fairway and short-game practice area; <li>➤ A Clubhouse (clubrooms); <li>➤ A Sports Academy including; an academy building, commercial office space, academy driving range, practice green, 9-hole short course, and indoor and outdoor tennis facilities; <li>➤ A golf and Property; maintenance complex; and

Activity	Rule	Status	Comment
			<ul style="list-style-type: none"> <li>➤ All associated ancillary buildings and supporting infrastructure; <li>➤ within the Rural – Rural Production Zone.
Commercial activities – Training Facility, Wellness Centre, Offices, Retail and ancillary commercial activities	C1.7	Discretionary	To operate and use: <ul style="list-style-type: none"> <li>➤ A Sports Academy and associated hireage / training services; <li>➤ A golf supplies retail store at the Clubhouse; <li>➤ A golf and tennis supplies retail store at the Sports Academy; <li>➤ Offices for golf and other sporting representative organisations; <li>➤ A wellness centre available for public bookings; <li>➤ Wellness product retail store in the wellness centre;

Activity	Rule	Status	Comment
			<ul style="list-style-type: none"> <li>➤ Art and gifts retail store in the main Lodge building; <li>➤ A yoga/meeting room in the main Lodge building available for public bookings; and <li>➤ All ancillary commercial activities; <li>➤ within the Rural – Rural Production Zone.
Restaurants and Cafes not otherwise provided for in a rural zone	H19.8.1 (A36)	Discretionary	<p>To operate, use and maintain:</p> <ul style="list-style-type: none"> <li>➤ Casual dining, bar/café facilities within the main Lodge building – available for public pre-bookings; <li>➤ Restaurant and bar within the Clubhouse; <li>➤ Café within the Sports Academy building - available to the public; <li>➤ all located within the Rural – Rural



Activity	Rule	Status	Comment
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Production Zone.

Chapter E15 - Vegetation Maintenance and Trimming

Vegetation alteration (trimming) including in an SEA-T overlay.	E15.4.2 (A43)	Discretionary	The operation of the Site will involve vegetation alteration (maintenance trimming) that may not comply with standard E15.6.9. including within an SEA-T.
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Chapter E7 – Water takes

Take and use of surface water, including dams not meeting the permitted activity, controlled activity or restricted discretionary activity standards or not otherwise listed	E7.4.1 (A9)	Discretionary	To take, store and use water from the Raurataua Stream during high-flows (above median flow), and at a rate that does not exceed 10% of flow, for the purpose of pasture irrigation, Site maintenance and dust suppression activities.
Take and use of groundwater not meeting the permitted activity or restricted discretionary activity standards or not otherwise listed.	E7.4.1 (A26)	Discretionary	To take groundwater from the volcanic aquifer (Waiatarua Formation) and use it for irrigation and potable / domestic water supply purposes.
Dams not otherwise listed or not meeting	E7.4.1 (A35)	Discretionary	The Project includes the damming of



Activity	Rule	Status	Comment
the permitted activity standards or controlled activity standards			approximately 140,000m ³ of groundwater and/or surface water within a storage reservoir with a surface area of approximately 37,000m ²

Chapter E5 – OnSite wastewater treatment and disposal

Discharge of treated domestic-type wastewater and wastewater (excluding trade waste) that does not meet the relevant standards or is not provided for by any other rule in the Plan.	E5.4.1 (A6)	Discretionary	The Project includes the provision of a combined on-Site domestic wastewater treatment plant, and associated discharge to land, at or about NZTM 1729380mE, 5925032mN for the Lodge, Clubhouse, Sports Academy and GPMC.
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Chapter E8 – Stormwater diversion and discharge

Diversion and discharge of stormwater runoff from additional impervious areas greater than 5,000m ² of road that complies with Standard E8.6.1 and Standard E8.6.4.1	E8.4.1 (A5)	Restricted Discretionary	The total impervious new road areas will be approximately 15,000 m ² .
Diversion and discharge of stormwater runoff from impervious	E8.4.1 (A10)	Discretionary	The total impervious areas of the Project are approximately 69,000 m ² . Stormwater will



Activity	Rule	Status	Comment
areas outside an urban area.			either be harvested from roof areas for potable supply, or managed / treated on Site prior to being discharged to land.

Chapter E4 – Discharges to water or into land and/or into water

Discharge of water and/or contaminants (including washwater) onto or into land and/or into water from any of the following: (a) cleaning, maintenance and preparation of surfaces of buildings, and associated structures.	E4.4.1 (A11)	Controlled	Bridge maintenance activities may include washing activities that may result in discharges of water and/or contaminants onto or into land and/or into water.
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Chapter E36 – Natural Hazards and Flooding

Diverting the entry or exit point, piping or reducing the capacity of any part of an overland flow path	E36.4.1 (42)	Restricted Discretionary Activity	Some stormwater management devices within the development involve diverting the entry or exit and/or piping parts of overland flow paths.
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4.6 PERMITTED ACTIVITIES

The table below identifies the permitted activities which are to be relied upon for various temporary and ongoing activities associated with the Project.



Table 20: Regulations for Permitted Activities under the National Environmental Standard for Freshwater

Activity	Regulation	Comment
Ongoing maintenance of wetland utility structures.	Reg 43	Ongoing maintenance of wetland utility structures (bridges and boardwalks) will comply with the specific conditions prescribed in regulation 43(4)

Table 21: AUP Permitted Activity Rules

Rule	Activity	Comment
Chapter E3 – Lakes, rivers, stream and wetlands		
E3.4.1 (A2)	Activities involving planting and the associated diversion of water - Conservation planting.	The proposed landscape and ecological enhancement planting within the waterbodies, including those within overlays, within the Site will be undertaken in a manner which complies with the relevant standards in E3.6.1 in particular, all plantings will be native species and non-invasive species in aquatic conditions.
E3.4.1 (A14)	Activities involving disturbance and associated sediment discharge – Pest plant removal	The Project landscaping and ecological enhancement works with the Site includes the removal of pest plants within watercourses on the Site. These activities will comply with the relevant standard of



Rule	Activity	Comment
		<p>E3.6.1.8 in particular, notification will be provided to Council prior to the commencement of works, the works will be undertaken in accordance with an Ecological Enhancement Plan (including pest management processes and methods), and the disturbance associated with the removal will not result in any on-going effects within the waterbodies including erosion, sedimentation or instability.</p>
E3.4.1 (A23)	<p>Works on structures lawfully existing on or before 30 September 2013 and the associated bed disturbance or depositing any substance, diversion of water and incidental temporary damming of water - Replacement, upgrading or extension of existing structures</p>	<p>The Project includes the upgrading of existing farm culverts.</p>
E3.4.1 (A31)	<p>New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of water - new cables or lines that cross over a river or stream which do</p>	<p>The Project includes the placement of power and water supply lines throughout the Site and in some places, these will be required to cross a waterbody. Where this occurs outside of an identified AUP overlay area, the works will</p>



Rule	Activity	Comment
	not require support structures in the watercourse	comply with the relevant E3.6.1.17 standards including the lines will not alter the bed of the watercourse, will be less than 30 m in length at each span and be raised above the flowing channel outside of the 1% AEP flow level, and are not located within waters which are navigable.
E3.4.1 (A41)	New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of water - Surface water intake structure.	A new surface water intake structure will be constructed adjacent to the Raurataua Stream. While subject to final design, the intake structure location will be outside of the identified AUP overlay areas and will comply with the relevant standards of E3.6.1 including the works not resulting in more than minor instability or erosion of the bed or bank, will not affect the flood levels within the stream, will not affect access along the stream, disturbance of the bed and bank will be minimised, the intake will be screened to avoid capturing fish, the structure will not affect fish passage within the stream and will not impact public access along the stream.



Rule	Activity	Comment
E3.4.1 (A43)	New structures and the associated bed disturbance or depositing any substance, reclamation, diversion of water and incidental temporary damming of water - Flow monitoring devices.	Non-invasive flow monitoring equipment will be installed to sit over the bed of the Raurataua Stream near the point of stream take to measure stream water levels used to calculate continuous stream flow information required for the proposed high flow take regime. This device may result in temporary and incidental bed disturbances. The activity does not result in any permanent structure within the stream bed.
E3.4.1 (A53)	Activities in ephemeral streams - Any activity that is undertaken in, on, over or within the bed of an ephemeral river and streams.	As described elsewhere, the Project includes the construction of tracks and supporting structures throughout the Site both within and outside of the identified AUP overlay areas. Where these activities are undertaken in ephemeral streams, they will comply with the relevant standards of E3.6.1 including the works not resulting in more than minor instability or erosion of the bed or bank, will not affect the flood levels within the stream, will not affect access along the stream, disturbance of the bed and bank will be minimised and there will



Rule	Activity	Comment
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be no ongoing effects following the completion of construction.

Chapter E4 – Other discharges of contaminants

E4.4.1 (A1)	Discharge of water and/or contaminants (including washwater) onto or into land and/or into water from various constructions activities including concrete and asphalt laying, drilling, washing vehicles and machinery and road construction.	Noting that the discharges from the large scale earthworks and construction activities are provided for as a consented activity, the Project will also include numerous minor discharge activities which will comply with the relevant permitted activity standards in E4.6.1 including; the discharges will not alter any receiving environments, they will not cause erosion or scour, and the discharge will be undertaken in accordance with best management practice.
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E4.4.1 (A2)	Discharge of water onto or into land and/or into water from testing pipeline, tanks or bunds; swimming pools; bore developments, testing or purging; and temporary or permanent discharge of diverted uncontaminated groundwater	As stated previously, the Project will also include numerous minor discharge activities which will comply with the relevant permitted activity standards in E4.6.1 and the additional specific standards in E4.6.2 including; the discharges will meet the relevant discharge limits where applicable.
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Rule	Activity	Comment
E4.4.1 (A3)	Discharge of swimming pool filter backwash onto or into land and/or into water in a manner that does not result in runoff into surface water	The Lodge design includes the provision for swimming and ornamental pools. The discharges from the pool filters will be to land as there is no reticulated network available. These discharges will comply with the relevant standard in E4.6.1 and E4.6.2 including the discharges not entering surface water and not resulting in erosion or scour.

E4.4.1 (A5)	Discharge onto or into land and/or into water for the purpose of dewatering trenches or other excavations.	Where groundwater is encountered during excavations, these areas may need to be dewatered and discharged to land in a manner which will comply with the relevant standard in E4.6.1 and E4.6.2 including the discharges will not alter any receiving environments, they will not cause erosion or scour, and the discharge will be undertaken in accordance with best management practice.
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Chapter E5 – OnSite wastewater treatment and disposal

E5.4.1 (A6)	Discharge of treated domestic type wastewater onto or into land via one or up to three land application disposal systems within a Site, in	The Project includes the provision of two on-Site domestic wastewater treatment systems, and associated discharges to
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Rule	Activity	Comment
	circumstances where the systems cannot be reasonably combined.	land, for the two on-course toilet facilities. The discharges will not exceed 2m ³ per day and will comply with all relevant E5.6 standards.

Chapter E7 – Taking, using, damming and diversion of water and drilling

E7.4.1 (A3)	Take and use water from a lawfully established off-stream dam.	The Project includes provision of irrigation and potable supply water from an existing reservoir on the wider Site. The water takes to fill the reservoir are consented activities.
E7.4.1 (A17)	Take and use of groundwater - Dewatering or groundwater level control associated with a groundwater diversion permitted under the Unitary Plan.	Where excavation encounter groundwater these areas may need to be dewatered in a manner which will comply with the relevant standard in E7.6.1 and E7.6.1.6 including the dewatering will only occur during construction and it will not occur at each excavation location for more than 30 days.
E7.4.1 (A27)	Diversion of groundwater - Diversion of groundwater caused by any excavation (including trench) or tunnel	Where excavation encounter groundwater these areas may need to be dewatered and some diversion may occur. Any such diversion will occur in a manner which will comply with the relevant standards in E7.6.1 and E7.6.1.10 including the



Rule	Activity	Comment
		<p>extent of excavations below the natural groundwater level will not be greater than 1 ha and are not expected to be more than 6m below the natural ground level.</p> <p>It is noted that diversion of groundwater associated pipes, cables and tunnels up to 1.2 m in diameter which are drilled or thrust, and piles up to 1.5m in diameter, are exempt from complying with the E7.6.1.10(2)-(6) standards.</p>
E7.4.1 (A36) and (A38)	Drilling and use of holes and bores - Holes or bores for geotechnical investigation; and bores for groundwater monitoring	<p>As part of the detailed design phase, additional geotechnical bores may be constructed to inform the final design. Additionally, further monitoring and investigation bores may be constructed to provide further detail on the groundwater resource. Where these activities are required they will occur in a manner which will comply with the relevant standards in E7.6.1.16 and E7.6.1.17 including avoidance of locating holes in the Wetland Management Area Overlay, any groundwater taken would only be for</p>



Rule	Activity	Comment
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sampling purposes, and works will be undertaken in accordance with the comply with section 1 and 2 of New Zealand Standard on the Environmental Standard for Drilling of Soil and Rock (NZS 4411:2001).

Chapter E11 – Land disturbance – Regional

E11.4.2 (A14)	Ancillary activities to erosion and sediment control - The temporary diversion and damming of surface water and the discharge of treated sediment laden water from any land disturbance allowed by a land use consent	The earthworks will result in the discharge of sediment laden water from the erosion and sediment control devices throughout the Site. These discharges will occur in a manner which will comply with the relevant standards in E11.6.2 including the discharges not altering any receiving waters after reasonable mixing, the controls will be designed in accordance with GD05, and the earthworks footprint will be minimised to the extent possible across the Site.
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Chapter E14 – Air quality

E14.4.1 (A1)	Discharge of contaminants into air from activities not provided for in other rules in this table - Activities meeting the	The bulk earthworks have the potential to cause the discharge of dust. These dust generating activities be primarily managed
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Rule	Activity	Comment
	<p>permitted activity standards and not provided for by any other rule</p>	<p>through the proposed CEMP and associated Dust Management Plan and will occur in a manner consistent with the relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the Property and the discharge will not result in visible, offensive or objectionable emissions.</p> <p>In addition, the ongoing operation and management of the golf course will require the application of fertiliser and other turf maintenance and management products. The storage and application of these is managed by the greens keeping staff and will be applied in accordance with the relevant he relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the Property and the discharge will not result in visible, offensive or objectionable emissions. There will also be no spray drift to neighbouring properties.</p>



Rule	Activity	Comment
E14.4.1 (A48)	Discharge of contaminants into air from combustion activities - Emergency generators used for the purpose of generating electricity for premises during mains power unavailability (includes operation for the purpose of generator testing and maintenance)	Once operational, the Site will include provision for emergency generators to provide power during shortages. The operation of these will occur in a manner consistent with the relevant standards in E14.6.1 including any discharges will not cause any adverse health or environmental effects beyond the boundary of the Property and the discharge will not result in visible, offensive or objectionable emissions.

Chapter E15 – Vegetation management and biodiversity

E15.4.1 (A2) & (A6)	Dead wood and pest plant removal outside of riparian and coastal areas	It is proposed that some dead wood and pest plant removal will occur outside of the AUP identified overlays and riparian zones. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the disposal of all removed material in an appropriate disposal location.
E15.4.1 (A7)	Conservation planting outside of riparian and coastal areas	The Project includes conservation / enhancement planting across the Site, some of which will occur outside of the AUP identified



Rule	Activity	Comment
		overlays and riparian zones. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the purpose of the planting being for ecological and landscape enhancement purposes.
E15.4.1 (A8)	Vegetation alteration or removal for routine maintenance within 3m of existing buildings	All maintenance related tree trimming will comply with standard E.15.6.9
E15.4.1 (A9)	Vegetation alteration or removal for routine operation, maintenance and repair of existing tracks, lawns, gardens, fences, shelterbelts and other lawfully established activities	All maintenance related tree trimming will comply with standard E.15.6.9
E15.4.2 (A32) & (A36)	Dead wood and pest plant removal within an identified AUP overlay	As part of beautifying the Site, dead wood and pest plant removal may occur within the AUP identified overlays (SEA-T and ONF) and riparian zones within the Site. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the disposal of all removed material in an appropriate disposal location.



Rule	Activity	Comment
E15.4.2 (A37)	Conservation planting within an identified AUP overlay	The Project includes conservation / enhancement planting across the Site, some of which will occur within the AUP identified overlays (SEA-T and ONF) and riparian zones within the Site. These works will occur in a manner consistent with the relevant standards in E15.6.1 including the purpose of the planting being for ecological and landscape enhancement purposes.
E15.4.2 (A41)	Tree trimming in an SEA-T	Tree trimming will comply with standard E.15.6.9
Chapter E24 – Lighting		
E24.4.1 (A1)	Lighting activities that comply with all the relevant permitted activity standards	Throughout the Site lighting will be provided in many different forms all of which are design to meet the requirements of the service they support. All lighting for the Site will be designed to be consistent with the relevant standards in E24.6.1 including meeting the pre-curfew and curfew illuminance and luminous intensity limits, placement of exterior lighting will be done so to ensure glare does not exceed the pre-curfew or curfew limits, and lighting



Rule	Activity	Comment
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limits will be measured and assessed in accordance with Standard AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting.

Chapter E25 – Noise and vibration

E25.4.1 (A1)	Noise and vibration activities that comply with all the relevant permitted activity standards	<p>Construction activities – construction activities will result in the generation of noise and vibration for the duration of the works period. These activities will be undertaken in a manner consistent with the relevant standards in E25.6.1 including the not exceeding the defined construction noise and vibration limits in E25.6.27 and E25.6.30, and the noise from any construction work activity must be measured and assessed in accordance with the requirements of New Zealand Standard NZS6803:1999 Acoustics – Construction noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.</p> <p>Operational activities – Once open, the golf course and associated Lodge and performance centre will generate a</p>
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Rule	Activity	Comment
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low level of noise and all activities onSite will be undertaken in a manner consistent with the relevant standards in E25.6.1 including complying with the maximum noise limits in rural zones set out in Table E25.6.3.1.

Helicopter noise – The development will provide for a helipad for helicopters to access the Site with a collection of helipads provided for close to the main entrance on Muriwai Road. Marshall Day concluded that the helicopters servicing the Site will comply with standard E25.6.32 being that the take-off or landing of a helicopter on any Site except for emergency services must not exceed Ldn 50 dB or 85 dB LAF max measured within the boundary or the notional boundary of any adjacent Site containing activities sensitive to noise and Ldn 60 dBA within the boundary of any other Site.

Chapter E26 – Infrastructure

Rule	Activity	Comment
E26.4.1 (A3)	Network utilities and electricity generation – Service connections.	The Project will require the construction and operation of new service connections in the form of connections to power and telecommunications services. The connections will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A4)	Network utilities and electricity generation – Minor utility structures.	The Project will require the construction and operation of new minor utility structures across the Site to provide for the conveyance of power, water and telecommunications services. The provision of these structures will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A9)	Network utilities and electricity generation – Pipe and cable bridges for the conveyance of	The Project will require the construction and operation of new conveyance systems for



Rule	Activity	Comment
	water, wastewater, stormwater, electricity, gas and telecommunications.	water, wastewater, electricity and telecommunications. The connections will be undertaken in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A10)	Network utilities and electricity generation – Air quality and meteorological monitoring structures and devices	The operational golf course will include up to 2 meteorological monitoring stations to provide live weather information for users and the grounds staff. These stations constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A13)	Network utilities and electricity generation – Diesel or petrol electricity generators used for the emergency backup of any activities in Table E26.2.3.1 Activity Table	The Project includes the provision of emergency diesel / petrol generator located across the Site. These generators will be located and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground

Rule	Activity	Comment
		building area and height for structures are not greater than 30 m ² .
E26.4.1 (A22)	Electricity transmission and distribution – Underground electricity lines	There will be some underground electricity lines provided across the Site. These lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.
E26.4.1 (A25)	Electricity transmission and distribution – Overhead electricity lines up to and including 110kV	There may be some additional overhead electricity lines provided across the Site. If so, these lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including provision that the lines emit electric and magnetic field emissions which comply with the International Commission on Non-ionising Radiation Protection Guidelines for limiting exposure to time varying electric and magnetic fields (1Hz – 100kHz) (Health Physics, 2010, 99(6); 818-836) and



Rule	Activity	Comment
		<p>recommendations from the World Health Organisation monograph Environmental Health Criteria (No 238, June 2007), and that the maximum height for support structures for electricity lines is no greater than 25 m.</p>
E26.4.1 (A38)	Telecommunications – Telecommunications shelters and cabinets	<p>The Project is likely to include the provision of telecommunication shelters and/or cabinets connecting the Site to the telecommunications network. These shelters and cabinets will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m² and 3 m.</p>
E26.4.1 (A40)	Telecommunications – Underground telecommunications lines and facilities	<p>The Project will include underground telecommunications lines and facilities. These lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not</p>



Rule	Activity	Comment
		greater than 30 m ² and 2.5 m.
E26.4.1 (A41)	Telecommunications – Overhead telecommunications lines	The Project may include overhead telecommunications lines. If so, these lines will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including ensuring the maximum height for support structures for telecommunication lines is no greater than 25 m.
E26.4.1 (A49)	Water, wastewater and stormwater structures - Underground pipelines and ancillary structures for the conveyance of water, wastewater and stormwater (including above ground ancillary structures associated with underground pipelines)	The Project includes a purpose built three waters infrastructure conveyance system across the Site. The underground pipework and ancillary structures associated with this conveyance system will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including any aboveground section of underground pipelines for the conveyance will not exceed a 25 m continuous length of pipe in any one section; and be greater than 300 mm in diameter.



Rule	Activity	Comment
E26.4.1 (A58)	Water, wastewater and stormwater structures - Stormwater treatment devices; erosion protection; culverts; measuring devices (flows structures)	Stormwater treatment devices and erosion protection structures will form part of the final detailed design of the wider development. Where these structures are provided for, they will be constructed and operated in a manner consistent with the relevant standards in E26.2.5 including the maximum aboveground building area and height for structures are not greater than 30 m ² and 2.5 m.

Chapter E27 – Transport

E27.4.1 (A1)	Parking, loading and access which is an accessory activity	<p>The Project provides for extensive parking, loading and access across the Site, all of which have been designed to meet the relevant standards of E27.6 including:</p> <p>Parking – The Project provides for the following parking spaces (T51, 74, 75 79) and all parking has been designed to comply with the size and location of spaces in E27.6.3.1</p> <p>Bicycle parking – T103</p> <p>Loading – There is no minimum requirements (T116) for provision of</p>
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Rule	Activity	Comment
		<p>loading zones within the rural zone however the Site provides adequate loading areas at all main buildings. All loading spaces have been designed to comply with the size and location of spaces in E27.6.3.2</p>
		<p>Access – All access points on Site have been designed to comply with the relevant standards in E27.6.4</p>
		<p>Additionally, the peak vehicle generation for the Site once operational is below the 100 vph threshold in standard E27.6.1.</p>

Chapter E30 – Contaminated Land

E30.4.1 (A4)	<p>Discharges of contaminants into air, or into water, or onto or into land from land not used for rural production activities</p>	<p>The Project includes some land disturbance activities on HAIL Sites located with the development footprint. These works will be undertaken in a manner consistent with the relevant standards in E30.6.1.4 including the contaminant concentrates in the in-situ soil does not exceed the criteria in Table E30.6.1.4.1 soil contamination or the relevant guidelines if not in the table and any</p>
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Rule	Activity	Comment
		discharges from land containing elevated levels of contaminants will not contain separate phase liquid contaminants.

Chapter E31 – Hazardous Substances

E31.4.3 (A58)	Hazardous facilities that store or use the listed hazardous substances – Flammable Liquids Class 3, Sub-class 3.1A	Up to 1,000 L of petrol will be stored on Site at any one time. The storage area for the fuel will be designed and managed in accordance with the relevant standards in E31.6 including the siting of the storage area will be a way from sensitive uses and watercourses, fuels will be stored and used in a way to prevent unintended spills, a spill management plan and spill kits will be provided, storage areas will be bunded with impervious materials and the drainage system within the storage areas will be formed to contain the full volume of substances stored and enabling spills to be pumped out.
E31.4.3 (A60)	Hazardous facilities that store or use the listed hazardous substances – Flammable Liquids Class 3, Sub-class 3.1D	Up to 3,000 L of diesel will be stored on Site at any one time. The storage area for the fuel will be designed and managed in accordance



Rule	Activity	Comment
		<p>with the relevant standards in E31.6 including the siting of the storage area will be a way from sensitive uses and watercourses, fuels will be stored and used in a way to prevent unintended spills, a spill management plan and spill kits will be provided, storage areas will be bunded with impervious materials and the drainage system within the storage areas will be formed to contain the full volume of substances stored and enabling spills to be pumped out.</p>

Chapter E34 – Agrichemicals and vertebrate toxic agents

E34.4.1	<p>The discharge from non-domestic applications of agrichemicals onto or into land and the discharge of chemicals and pre-feed agents for the purpose of killing vertebrate pests.</p>	<p>All chemicals used for the management of turf and vegetation health, and all toxic chemicals used to control vertebrate pests will be applied in accordance with best practices and manufacturer recommendations</p>
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Chapter E36 – Natural Hazards and Flooding

E36.4.1 (43)	<p>Buildings and structures on land which may be subject to land instability</p>	<p>Parts of some buildings associated with the Lodge will be in locations relatively close to the steep escarpment to the east of Lake Okaihau.</p>
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Rule	Activity	Comment
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Special design requirements will be needed to address associated land stability risks. These are detailed in Appendix 4 (Geotechnical appraisals). These buildings will be constructed in accordance with permitted standards contained in E36.6.1.11.

Chapter H19 – Rural Zones

H19.8.1 (A15)	Use and development – Conservation planting	As previously detailed, conservation and enhancement planting will be undertaken as part of the Project. These activities within a rural zone are permitted and do not have any specific standards that need to be complied with.
H19.8.1 (A58)	Development – Demolition of buildings	There are some existing buildings on Site that may be demolished and / or removed as part of the Project. These activities within a rural zone are permitted and do not have any specific standards that need to be complied with.

4.7 ADDITIONAL CONSENTING REQUIREMENTS

While the tables above set out the resource consent requirements based on the concept design for the Project, additional consenting requirements may also be relevant. These may include:

- **Temporary Activities** – as the golf course will be designed to a ‘marquee’ standard, it is envisaged that it will be used for top tier national and international tournaments. As no details as to what these would be or when they would occur, no consents have been sought for such activities at this stage.
- **Boundary adjustment meeting Standard E39.6.3.2** - A subdivision consent to adjust the boundary line between Lot 4 DP 187060 and Lot 5 DP 187061 to enable a proposed water storage reservoir to be located wholly on one land allotment will be sought at a later date following the final design and installation of the reservoir. This enables accurate survey data and as-built plans to be included in the application.

While the above have not been included in this application, it is considered that the types of activities for which consent will be sought are standard operational activities where the actual and potential effects are well understood and can be effectively avoided, remedied or mitigated through management and control measures.

4.8 SUMMARY OF ACTIVITY STATUS

4.8.1 District and Regional Plans

Overall, under the AUP documents, the Project will require a range of resource consents for **Controlled, Restricted Discretionary, Discretionary** and **Non-Complying Activities**.

4.8.2 NESCS

Resource consent is required under the NESCS as

- **Controlled Activities** for:
 - Disturbance of soil under Regulation 9(1); and
 - The change of land use on parts of the Site under Regulation 9(3).

4.8.3 NESFW

In addition to the district and regional consenting requirements for activities affecting wetlands and freshwater, resource consents will be required under the NESFW for:

- **Non-complying Activities**, including:
 - Earthworks and vegetation clearance occurring within the 10m setback of a wetland;

- The taking of surface water from the Raurataua Stream and the taking of groundwater – both at locations between the 100m and 10m setbacks from a wetland; and
- The diversion and discharge of stormwater and golf course drainage water to land at locations between the 100m and 10m setbacks from a wetland;
- A **Discretionary Activity** for the reclamation of part of a river; and
- **Restricted Discretionary Activities**, including:
 - The construction of wetland utility structures; and
 - Restoration activities in a natural wetland.

4.8.4 Overall Activity Status

When applying the ‘bundled’ approach for consenting purposes, the Project requires resource consent as a **Non-complying Activity**.

5. ASSESSMENT OF ENVIRONMENTAL EFFECTS

This section summarises the actual and potential effects associated with the construction, operation and maintenance of the Project. The summaries presented are drawn from relevant technical reports listed in Section 1 of this AEE. These technical reports should be referred to for further details regarding the effects assessments summarised below.

The actual or potential effects identified and discussed with respect to the Project include:

- Positive effects;
- Cultural effects;
- Specific construction related effects;
- Ecological effects;
- Arboricultural effects;
- Effects on surface water;
- Groundwater effects;
- Effects on Lake Ōkaihau;
- Effects on natural wetlands;
- Effects on soils;
- Potential land instability;
- Landscape, visual amenity and natural character effects;
- Operational traffic and roading effects;
- Noise effects; and
- Effects on archaeological and heritage values.

Summary descriptions of the effects listed above are presented within the following sections. In addition, and where relevant, various proposed measures to avoid, remedy or mitigate adverse effects are also discussed. Various management plans proposed as part of the Project are also summarised.

5.1 PERMITTED BASELINE

Section 104(2) of the RMA provides that when forming an opinion about the actual or potential effects of the activity, the consent authority may disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect. This is often referred to as the "permitted baseline" and calls for a discretionary decision to be

exercised by the consent authority as to whether or not to discount such permitted adverse effects.

In terms of the various activities proposed as part of this Project, it is considered the effects associated with the following activities should be discounted from the effects assessment in accordance with Section 104(2):

Relevant activities permitted in the Rural Production Zone as specified in H19.8.1 of the AUP for use and development, include:

- Farming, inclusive of permitted fertiliser application²⁹;
- Rural airstrips;
- Greenhouse structures;
- Intensive farming related activities and associated permitted buildings³⁰;
- Intensive poultry farming activities and associated permitted buildings³¹;
- Free-range poultry farming activities and associated permitted buildings;
- Quarries – farm or forestry;
- In terms of assessing the effects associated with managing stormwater, up to 5,000m² of impervious area per Site (not including unsealed or gravelled areas/tacks)³²; and
- In terms of assessing the effects of buildings, the construction of up to 11 additional dwellings on the Property north of Muriwai Road that meet the permitted standards (including maximum height ³³).

5.2 POSITIVE EFFECTS

Overall, there are a wide range of actual and potential positive effects associated with this Project. In summary, these include:

- Various environmental improvements associated with the discontinuation of farming activities on parts of the Property as identified and discussed in the Water Effects Summary Report (Appendix 10) and Ecology Report (Appendix 11) as summarised below in Sections 5.2.1 and 5.2.2 respectively;

²⁹ AUP Rule E35.4(A1)

³⁰ Standard H19.10.4.

³¹ Standard H19.10.5.

³² Rule E8.4.1(A9).

³³ Standards H19.10.2 Building height.

- Significant positive direct and indirect effects associated with the concept Ecological Restoration and Enhancement Planting as discussed in numerous technical reports appended to this AEE, but most notably, the Ecology Report (Appendix 11) and Landscape Report (Appendix 13);
- Some positive cultural effects and cultural related opportunities for kaitiaki as identified and discussed in the CVA (Appendix 21) and as summarised in Section 5.2.3 below;
- Various benefits associated with golf and golf courses including numerous and sizable direct and indirect positive economic and social impacts as identified and analysed in the Economics Report (Appendix 17) and summarised in Sections 5.2.4 and 5.2.5 below; and
- An improvement to the quality and productive capacity of some soils within the Site as set out in the Soils Report (Appendix 8) and as summarised below in Section 5.2.6 below.

These various positive effects are summarised below.

5.2.1 Water Quality Improvements

As summarised in the Water Effects Summary Report (Appendix 10), catchment modelling undertaken estimates the change in surface water quality within the Ōkiritoto catchment will likely result in a 5% reduction in both the TN concentration and peak TSS concentrations within the Ōkiritoto Stream

In addition, it is noted that the combined effects associated with the removal of stock from the Site and the implementation of the concept ecological restoration and enhancement planting are also likely to result in a marked improvements in the quality of water within the Lake Ōkaihau and other unnamed tributary stream flowing through the Site.

5.2.2 Ecological Benefits

As detailed in the Ecology Report (Appendix 11), the Project includes extensive Ecological Restoration and Planting programme including protection of some areas in perpetuity.

The Ecology Report confirms that the development can be expected to result in a significant net-benefit to indigenous fauna, forests, streams, and wetland values and functions across the Property.

In addition, the Arboriculture Report (Appendix 12), highlights that the consequential removal of stock associated with the Project will result in an improvement to the health of indigenous trees on the Site currently not protected from grazing animals.

5.2.3 Cultural Benefits

Identification of actual and potential cultural effects associated with this Project is documented in the Cultural Values Assessment (CIA) prepared by Te Kawerau ā Maki (Appendix 21). The CIA identifies large beneficial positive effects on the health and wellbeing of the Ōkiritoto Stream (Waimanu Awa), Muriwai (Ōkiritoto) Wetland and Lake Ōkaihau associated with stock removal from the Site, combined with the restoration and enhancement planting proposed as part of the Project.

Cultural effects are discussed in more detail below in Section 5.3, however, it is noted that, overall, the CIA concludes the Project will likely deliver net cultural improvements compared to the current situation.

5.2.4 Benefits of Golf

The benefits of golf and golf courses, as experienced elsewhere, are described in the report titled “Golf in New Zealand and Associated Benefits” – an Appendix to the Economics Report (Appendix 17). This report identifies a range of positive impacts resulting from operational golf courses and golf focussed activities, highlighting the various ways they contribute towards a community’s health and wellbeing, economic performance and environment. Positive impacts identified in this report considered relevant to this Project, include:

- The protection and enhancement of local biodiversity and improvements to Muriwai’s natural environment through the creation and maintenance of greenspace;
- A range of direct and indirect positive local, regional and national economic effects (discussed further below);
- The establishment of a focal point to achieve additional charitable outcomes for the Muriwai community;
- The Project’s general promotion of tangible health benefits achieved by keeping active through sport; and
- The prospect of the proposed Sports Academy facilities producing champion athletes who provide profile for New Zealand Sport and inspire the younger generation.

5.2.5 Economic Effects

Economic effects are analysed and discussed in detail within the Economics Report (Appendix 17). Overall, this report confirms the Project will have significant positive economic impacts across its various development and operational stages. The most notable of these are highlighted below.

It is noted that extensive work is required to prepare the land for development, and then construct the golf courses and the various buildings that comprise the Project.

At the land development and construction phases, the number of people directly and indirectly employed at each stage of the Project's development will entail:

- In 2021-2022, 24 direct Full Time Equivalent (“**FTE**”) jobs will be created in the planning, design and consent stages, with a further 10 FTE jobs created indirectly in sectors that support these processes;
- In 2022-2025, 173 direct FTE jobs will be created in the infrastructure, land development and building construction stages, with a further 364 FTE jobs created indirectly within sectors that support infrastructure and land development; and
- In 2025-2026, 16 direct FTE jobs will be created in the pre-opening capital expenditure stage, with a further 6 FTE jobs created indirectly in sectors that support this expenditure.

The Project will also have induced impacts, where people employed by the Project spend wages / salaries locally and cause additional effects, these are considered less tangible than the direct and indirect effects noted above.

In terms of economic impacts associated with the Site's operation, the Project's various components will provide ongoing incomes and employment for workers of varying skills and experience levels, thereby sustaining economic activity. Calculations show the Project's operation will employ approximately 140 people full time and pay total wages and salaries of around \$11.7 million per annum. This translates to an average wage or salary of approximately \$83,000 per full-time worker. Overall, the Project will have significant ongoing direct economic impacts, including employment for more than 280 people, annual wages and salaries of \$16.6 million, and more than \$25 million of regional Gross Domestic Product (“**GDP**”) annually.

In addition to the above, future (high net worth) visitors to the Property will create additional impacts as a result of off-Site spending at nearby facilities, such as wineries, tourism operators, and artisan craft shops. Calculations identify that this future spending will generate around \$2.4 million per annum in direct GDP, create direct employment for 48 people, and create \$1.4 million in direct wages or salaries. While there are additional economic impacts arising from flow-on effects the Economics Report focuses primarily on direct effects. Notwithstanding this, it is sufficient to note that off-Site spending will provide significant ongoing financial support for a wide range of local tourism businesses in the region.

It is also anticipated the proposal will increase direct regional employment by nearly 200 FTEs, generate an extra \$10 million in direct annual wages or salaries, and boost regional GDP directly by \$17 million per annum.

Regarding impacts on rural production, the Project has been designed so that it will only occupy a fraction of the Property and therefore most of the existing rural production activities can continue to occur. It is noted that only dairy farming operations will cease.

This would reduce total farm employment by only 1.5 FTEs, with an additional 0.5 FTEs required to assist with ongoing pastoral farming. As a result, loss of the dairy unit would cause a reduction in total farm employment of only 1 FTE. This small reduction in farm employment is more than offset by the adoption of very conservative assumptions elsewhere in the Economics Report and can therefore be safely ignored. The Farming Operations Report (Appendix 9) confirms the future farm will be profitable.

It is also anticipated the Project will increase direct regional employment by nearly 200 FTEs, generate an extra \$10 million in direct annual wages or salaries, and boost regional GDP directly by \$17 million per annum.

5.2.6 Positive Effects on Site Soils

The following positive effects on Site soils are identified in the Soil Report (Appendix 8):

- Land contouring associated with creation of fairways and rough will result in a lowering of slope steepness in some places. This is estimated to result in an additional 16 hectares of soil on the Site that can be classified as 'Prime Soil' through improved land contours;
- The construction of the golf course will result in improvements to soil drainage. This will result in improved soil quality and health over time as compared to the current state; and
- As a consequence of improved land contours, better drainage, improved internal Site access, establishment of irrigation infrastructure and availability of irrigation water - all occurring as integral parts of the golf course development, the Project broadens the range of agricultural or horticultural activities that could be carried out successfully on the Site in future.

Overall, the Soil Report concludes that the Project will result in improved soil quality, over much of the golf course, including both prime and non-prime soils.

5.2.7 Positive Effects Summary

Overall, given the diverse range and magnitude of positive effects associated with the Project, this Project collectively represents a somewhat rare opportunity where a privately funded development results in such significant benefits for the local environment, local community, Auckland region and the country. It follows that, such benefits will be missed in the event this Project does not proceed.

5.3 CULTURAL EFFECTS

5.3.1 Cultural Impact Assessment

Identification of actual and potential cultural effects associated with this Project has been informed through the Applicant's consultation with Mana Whenua and as documented in the CIA prepared by Te Kawerau ā Maki (Appendix 21). Te Kawerau ā Maki's CIA is particularly helpful in this respect. Accordingly, the summary of cultural effects presented below focusses on the content of this document.

As summarised previously in Section 3 of this AEE, a range of cultural values associated with the Site and its surrounds are identified and contextualised in the CIA. The Project's potential direct, indirect and cumulative effects on these values are summarised in Table 3 of the CIA. Table 3 also provides an indication of the potential magnitude of each effect, both prior to and following relevant mitigation proposed by the Applicant. The need, or otherwise, for off-setting any residual adverse effects, and any positive effects, are also identified. Key observations from Table 3 are highlighted below.

The CIA identifies the following potential adverse cultural impacts associated with the Project:

- Regarding local soils (Whenua), any adverse construction related effects;
- Regarding streams (Waimanu awa), wetlands and Lake Ōkaihau;
 - Adverse construction related effects, including sediment discharges;
 - Adverse operational impacts associated with ongoing stormwater discharges;
 - Adverse impacts associated with any proposed surface water take;
- Regarding groundwater;
 - Drilling into the earth and abstracting underground water;
 - Abstraction in excess of recharge rates;
- Regarding the Ōkiritoto and Toroānui Falls;
 - All those effects listed above in relation to streams, wetlands and Lake Ōkaihau; and
 - Human activities that detract from the values of these features;
- Regarding areas of native forest (Ngahere) and indigenous fauna;
 - Adverse construction related effects and associated vegetation removal including any related direct or indirect ecological effects;
 - Operational and cumulative impacts from light pollution;



- Risk of Kauri die-back spreading;
- Regarding cultural sites including any unrecorded archaeological features or artefacts:
 - Adverse construction related effects; and
 - Potential to remove physical signature of these sites from the landscape.

The assessment then examined what impact the various mitigation measures proposed by the Applicant (summarised below) will have on the severity of these adverse effects (assuming the mitigation occurs fully). Following this exercise, the following outcomes were noted:

- There would be three positive cultural effects – relating to health and well-being improvements to streams, wetlands and Lake Ōkaihau;
- There would be five neutral effects;
- A range of minor and or moderate adverse effects; and
- Three significant effects.

Significant potential residual effects related to potential damage or loss of the following cultural Sites:

- Ramapukatea kainga – located adjacent to hole 14 and 15 of the golf course. This is an old kāinga near the head of Waimanu awa.
- Te Muriwai kāinga – located adjacent to hole 13. This is a kāinga located at the head of Muriwai (Ōkiritoto) wetland and named after it. It was occupied for generations up until it was alienated in 1904. The nearby midden feature (Q11_70, CHI 9235) is likely associated with the edge of this kāinga.
- Ōkaihau kāinga – located adjacent hole 2 and 3. This is a kāinga occupied in conjunction with Tūkatū pā and utilised the resources of lake Ōkaihau and lake Waitewhau. It was also associated in particular with māra kai (kūmara gardens). Te Kawerau ā Maki chief Tamihana Tieke is buried nearby. The kāinga was occupied periodically into the early 20th century until it was taken by the Crown in 1934.

The CIA notes that the adverse impacts identified can be avoided, or significantly reduced, through design and mitigation interventions if Te Kawerau ā Maki remain involved in and inform the process. Off-setting and/or additional mitigation suggested in the CIA include:

- Identification of an area for reinterment within the Site and to covenant this to enable kaitiaki access;
- Scheduling of cultural Sites within the Property onto the Auckland Council schedule of Sites of Significance to Mana Whenua;
- The adoption of culturally sensitive design aspects such as:

- water sensitive design;
- environmental restoration;
- provisions to enable cultural interpretation and cultural artwork as part of the Project's design; and
- Providing access to cultural Sites.

5.3.2 CIA Recommendations

In addition to the assessment of effects, and suggested off-setting and mitigation actions, the CIA also provides a number of recommendations for the Applicant's consideration. In this respect, the Applicant anticipates that, through ongoing engagement and discussion, appropriate action plans will be agreed with Te Kawerau ā Maki to achieve these recommendations. As evidenced by the following examples, good progress has already been made:

- In consultation with Te Kawerau ā Maki, the Applicant will be proffering a number of draft conditions of consent that, in the event consents are granted, will require the Applicant to:
 - Establish a Kaitiaki Committee for the Project;
 - Prepare and implement a Mātauranga Māori Environmental Monitoring Plan ("MMEMP") in consultation with the Kaitiaki Committee; and
 - In association with the Kaitiaki Committee, respond to the historic context of the Site and its features by installing appropriate interpretive signage, wayfinding devices, pouwhenua and/or artworks in suitable locations to reference the historic and cultural relationship and values of the Site; and
- As will be discussed further in Section 7 of this AEE, cultural design engagement between the Applicant and Te Kawerau ā Maki has been occurring as part of the Project's design to this point. As part of this process, Te Kawerau ā Maki has prepared a "cultural design narrative" for the purpose of guiding cultural design elements to be considered by the Project. A copy of this cultural design narrative is appended to the CIA. The Applicant and the Applicant's architects will utilise this resource to help inform final Project design.
- Regarding groundwater abstraction, although not available at the time of finalising the CIA, the Water Effects Summary Report (Appendix 10) confirms the proposed abstraction is well within relevant allocation limits and natural recharge rates. The Applicant will also monitor groundwater abstraction volumes and groundwater levels and share this information with Mana Whenua.

5.3.3 CIA Conclusions

Overall, the CIA concludes that the Project will likely deliver net cultural improvements compared to the current situation.

This conclusion is premised on a suite of appropriate mitigation actions, such as those suggested in the CIA, being progressed and implemented - as is being currently undertaken collaboratively between Te Kawerau ā Maki and the Applicant.

This conclusion also acknowledges that:

- as part of the Project, the Applicant has already committed to enhancing wetland and terrestrial habitat within the Property, maintaining Te Kawerau ā Maki's involvement in cultural design elements and securing Te Kawerau ā Maki access to cultural heritage Sites on the Property; and
- if the Project proceeds, stock will be removed from the Site and dairy farming will be discontinued on the Property.

5.4 CONSTRUCTION RELATED EFFECTS

Although construction is a temporary or short-term activity, it is also a phase of any development where general activity on the Site is heightened. As a consequence, environmental risks during the construction phase are often elevated, requiring special management.

Various construction effects relevant to this Project are addressed in the following sections.

5.4.1 Construction Effects Management

Construction related effects associated with this Project are discussed, as relevant, in a number of technical reports appended to this AEE. The primary document addressing these impacts is the Draft Construction and Environmental Management Plan (“**CEMP**”) (Appendix 18) proposed as part of this Project. Contained within the Draft CEMP, and its ancillary management plans, are various initiatives, protocols and procedures the Applicant will undertake to ensure construction activities are suitably managed to minimise impacts on the environment and reduce nuisance for the community during the construction phase. Key construction related matters covered in the Draft CEMP include:

- Erosion of soil and discharge of sediment from disturbed and exposed earth;
- Potential discharge of dust from unestablished earthwork areas including areas where soils possess elevated levels of contamination;
- Construction traffic;

- Construction noise;
- Vegetation clearance and tree removal;
- Kauri die-back management;
- Indigenous fauna management;
- Litter and waste management;
- Potential to cause damage to, or loss of, known or unknown archaeological features or Sites;
- Accidental discovery of taonga, koiwi or other cultural or archaeological Sites.
- Spill control and incident response; and
- Contingency plans.

The implementation of a CEMP for large construction Projects is common practice. Provided the CEMP's processes and procedures are well considered, suited to the specifics of the Site and Project activities, and implemented and enforced, the effects during construction can be appropriately managed for the duration of the construction phase.

Further details of specific aspects of the CEMP are set out below.

5.4.2 Earthworks and Stormwater, Erosion and Sediment Control

As described in the Golf Course Construction, Operation and Maintenance Report (Appendix 3), the unique methodologies used for creating golf courses means that earthworks are a critical and significant element of their construction. In this instance, although the design philosophy has been to utilise the existing natural land contours as much as possible, the golf course construction will involve the disturbance of a reasonably large volume of soil (approximately 590,000 m³ of cut material), and at times, relatively large areas of unstabilised soil will be exposed. Accordingly, one of the key construction priorities for this Project will be ensuring stormwater within and outside earthwork areas is appropriately managed and soil erosion and sediment runoff is appropriately minimised. Various methodologies proposed to achieve this include;

- The development of clear construction objectives, roles, responsibilities, monitoring processes and earthwork design philosophies as part of the CEMP;
- The adoption of the specific earthwork design philosophies such as;
 - Minimising cut to fill and imported fill volumes;
 - Logically compartmentalising earthwork areas to minimise cartage of onsite cut to fill distances;

- Where practical, limiting earthworks in sensitive locations (e.g. near streams or wetlands, outside periods when wetter weather is more likely; and
- Staging construction earthworks to minimise the area of unstabilised soils at any one time;
- Ensuring the CEMP is a “live” document that may evolve to address unforeseen events or ground conditions;
- Updating and finalising the draft vegetation clearing plans, cut and fill plans and earthworks plans appended to the Engineering and Infrastructure Report (Appendix 5) following final Project design;
- Preparation of ESCPs in accordance with Auckland Council GD005³⁴. Draft erosion and sediment control plans are provided in the Engineering and Infrastructure Report (Appendix 5) and final versions will confirm locations, calculations and design information for the following:
 - Sediment Erosion Ponds;
 - Decanting Earth Bunds;
 - Flocculation equipment;
 - Contour drains;
 - Clean and dirty water diversion bunds;
 - Silt fences;
 - Stabilisation methods;
 - Stabilised haul roads;
 - Stockpile areas;
 - Laydown areas: and
 - Access points;
- A pre-construction meeting with regulatory monitoring representatives in attendance;
- Disciplined monitoring, inspection and adaptation; and
- Contingency planning.

In addition to the initiatives listed above, the Draft CEMP will also detail other bespoke methodologies that will be used in special circumstances. As an example, earthworks in golf course transition areas (e.g. areas very close to wetlands) will be undertaken in

³⁴ Auckland Council Guideline Document GD05 – Erosion and Sediment Control for Land Disturbing Activities in the Auckland Region

accordance with the following procedures specifically designed to manage the unique risks associated with these more sensitive locations:

- Farm pasture close to wetland areas will be replaced with mature Fescue Turf (i.e. ready-turf).
- This will be done manually, by first manually removing, or “opening up” in small sections, the existing pasture within a buffer zone of approximately two metres from the wetland or stream bed.
- Pasture removal in these areas would not be undertaken in wet weather or on days where rain is expected.
- The Fescue Turf would then be installed and secured with biodegradable stakes.
- All areas “opened up” would be turfed before the end of that same day.
- The Fescue Turf would not be mown for a period of at least 6 months.
- Seeding up-gradient of the Fescue Turf would be hydroseeded (including a tackifier) to secure the seed/seed bed in situ.

Similarly detailed methodologies will be developed and implemented to manage stormwater and minimise sediment runoff during bridge construction, culvert installation or undertaking earthworks in other high-risk areas such as close to Kauri trees.

5.4.3 Construction Effects on Surface Water Quality

In terms of construction related sediment discharges to surface water, the Water Effects Summary Report (Appendix 10) notes that ESCPs for the Project will be designed in accordance with the Auckland Council’s GD05. It also acknowledges the adoption of other best practice earthworks processes such as, rain activated flocculation systems, and where practical, ensuring any works being undertaken in close proximity to streams and wetlands occur between the months October and April – when rain events and runoff are lowest. Overall, the Water Effects Summary Report concludes that, provided final ESCPs are designed and implemented in accordance with the best practice guidelines, water quality impacts during construction will be no more than minor.

It is also noted that further mitigation of adverse construction related water quality impacts will be achieved by:

- Adoption of water treatment systems (flocculation) on stormwater retention devices;
- Other initiatives to be included in the CEMP to minimise risk of sediment loss and avoidance of spills; and
- The short-term nature of construction earthworks and careful management during construction phases.

5.4.4 Discharge of Dust

Adverse ecological and nuisance dust effects during construction will be minimised through the implementation of a Dust Management Plan (“**DMP**”). The DMP will form part of the CEMP and will include various standard management practices and protocols to reduce dust. These include:

- Planning the Site layout so that high dust generating activities are located as far way from sensitive receiving environments and people as possible;
- Staging earthworks and stabilising soils as quickly as possible to minimise areas of exposed earthworks;
- Appropriate training for onsite staff;
- Maintaining stabilised Site entrance and exit points;
- Enforcing appropriate onsite speed limits for plant and vehicles in localised areas;
- Enforcing Site vehicles to use stabilised surfaces such as haul roads where possible;
- Restricting access to un-stabilised and exposed areas;
- Ensuring any paved surfaces are kept clean from any tracking of transported dust;
- Grassing or covering of stockpiles;
- Monitoring Site conditions (e.g., weather / soil conditions) to anticipate and prevent dust emission effects;
- Limiting activities of high dust generation potential during periods of high winds;
- Use of wind break fences if practical;
- Retention of existing vegetation as shelter belts; and
- Use of watercart and approved dust suppressant sprays to keep surfaces damp in areas where sensitive receptors can be impacted.

Provided appropriate Site management methods such as those set out above are implemented and maintained for the duration of construction, it is unlikely the Project will cause dust emissions that result in an objectionable effect beyond the Site boundary.

5.4.5 Contaminated Soil Management

In response to the occurrence of HAIL activities within the Property (Refer Section 2.13) and noting that the extent of Project earthworks overlaps some of these HAIL areas, a DSI Report has been prepared (Appendix 6). The DSI Report shows that the soil disturbance, and change of land use associated with the Project, is not considered to pose an unacceptable risk to human health (in the context of commercial / industrial and recreational land use) nor the environment. As such, the Property is considered suitable for the Project, subject to the implementation of limited controls to manage risks to human

health. Specific risks identified in the DSI Report requiring control are associated with the Project's disturbance of discrete areas of soils with slightly elevated levels of arsenic, chromium, copper, lead and / or zinc.

As recommended in the DSI, a Contaminated Soil Management Plan (“**CSMP**”) will be prepared and implemented in these areas during construction works. The CSMP will be prepared by an appropriately qualified and experienced contaminated land specialist and will include, as a minimum, details on appropriate soil handling and disposal measures commensurate with the concentrations of contaminants observed at these areas. The CSMP will also include specific management methods designed to appropriately manage potential dust being discharged from these areas and specific processes to manage any unexpected discovery of previously unidentified contamination.

The CSMP will form part of the CEMP.

5.4.6 Vegetation Clearance and Tree Removal

Individual tree specimens and various groups of trees require removal as part of the vegetation clearing and earthworks phase of construction. Some trees proposed to be removed are located in SEA areas. The Arboriculture Report (Appendix 12) sets out in detail the scope of tree removal proposed in this phase. In accordance with best arboricultural practice, Visual Tree Assessments (“**VTA**”) were undertaken on all trees directly and potentially impacted by construction.

The Arboriculture Report recommends, and the Applicant accepts, the implementation of a Tree Management Plan (“**TMP**”) for the Project. A Draft TMP is appended to the Arboriculture Report and includes specific tree removal and tree health related procedures to be adopted prior to and during all construction activities.

Provided the tree protection methodologies set out in the Draft TMP are followed, the Arboriculture Report confirms that for the variety of earthworks, vegetation removal and other construction related activities taking place within the root zones of trees to be retained can be managed in such a way that any adverse effect on the health and stability of any protected tree or stand/grouping of vegetation will be less than minor.

The Applicant proposes that the Draft TMP forms part of the final CEMP.

5.4.7 Kauri Die-Back Management

As noted in Section 2 of the AEE, the Site includes a number of Kauri trees showing a range of Kauri die-back symptoms. Kauri die-back is a soil-borne disease that spreads through the movement of contaminated soil and infected Kauri tree material. Human activities are a primary cause of its spread. Heavy machinery used around or near Kauri can pick up contaminated soil so it is important appropriate hygiene practices are adopted. In addition, relocation or disposal of infected Kauri tree material off Site or up-



catchment from healthy Kauri can it to spread. As such, to minimise the spread of the disease during this Project, all Kauri within the Site will be treated as if they are infected and, therefore, managed in accordance with current biosecurity guidelines and protocols provided by the Ministry of Primary Industry and Auckland Council. Copies of these are appended to the the Arboriculture Report. They include precautionary measures such as:

- General machinery hygiene;
- Designating machinery wash-down Sites;
- Specific equipment wash-down procedures;
- Careful inventory monitoring of potentially contaminated material movements both within the Site and to and from the Site; and
- Designating disposal Sites for all potentially contaminated wood material and/or soils within the “Kauri Contamination Zone” (i.e. any surplus soils located from within a radius equal to 3 x dripline distance); and
- Where relevant, these guidelines and protocols will form part of the CEMP as will relevant Kauri die-back Site earthworks plans. An example Kauri die-back Site earthwork plan is provided in Figure 75 showing designated Kauri Contamination Zones (pink) and contaminated soil and tree material stockpile locations (purple).

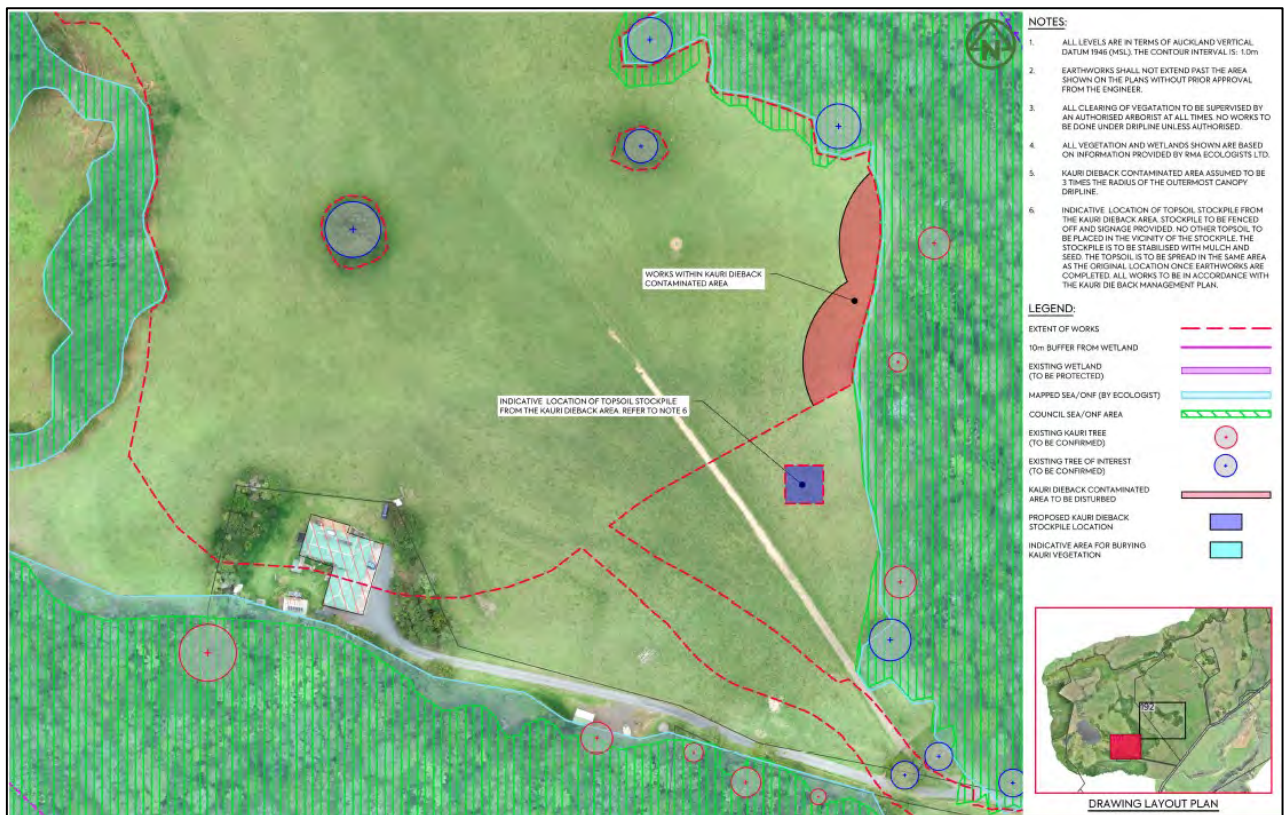


Figure 75: Example DRAFT Kauri Die Back Management Site Plan

The Arboriculture Report concludes that, provided all Kauri tree removal and works within the driplines of remaining Kauri are managed in accordance with relevant protocols, it is considered any effects on those Kauri tree remaining within the Project area as part of the initial earthworks would be less than minor.

5.4.8 Construction Related Soil Effects

An assessment of the Project's potential effects on Site soils is provided in the Soil Report (Appendix 8). This report includes examinations on the likely soil effects associated with construction activities.

The Soil Report notes that, due to topsoil stripping, topsoil stockpiling, topsoil replacement, and potential compaction of subsoils by heavy machinery during golf course construction, some level of damage to existing soil structure is inevitable during this phase. Despite this, the Soil Report also confirms this damage can be reduced by:

- Using appropriate types and sizes of earthworks machinery;
- Adopting good on-Site traffic management methods (such as ensuring machinery uses nominated haul roads); and
- Focussing earthwork activities during period when the soil is dry.

The Soil Report also notes that:

- Construction related soil structure damage can be remediated through compaction relief of subsoils (e.g. deep ripping, etc) prior to topsoil replacement and sowing.
- On-going turf management (including soil compaction relief treatments) will help to restore soil structure; and
- Overall, any adverse effects on soil health from the golf course construction will be minor and, in most cases, temporary in nature.

These adverse effects are further mitigated on the basis that earthworks will be predominantly located on lower production capacity soils.

5.4.9 Construction Traffic

An assessment of construction traffic forms part of the ITA (Appendix 16). The ITA recommends the preparation and implementation of a Construction Traffic Management Plan (“**CTMP**”) as part of the CEMP. The CTMP will include:

- Construction dates and hours of operation including any specific non-working hours for traffic congestion / noise etc, aligned with normally accepted construction hours in the Auckland Region;
- Truck route diagrams between the Site and external road network;



- Temporary traffic management signage / details for both pedestrians and vehicles, to manage the interaction of these road users with heavy construction traffic; and
- Details of Site access / egress over the entire construction period and any limitations to truck movements.

The ITA concludes that based on experience with similar Projects, and considering the capacity within the existing road network, with an appropriately detailed CTMP in place for the duration of the construction phase, all related construction traffic activities can be managed to ensure any generated traffic effects are appropriately mitigated.

The Applicant proposes that a CTMP should form part of the final CEMP.

5.4.10 Construction Noise

An assessment of the potential noise effects related to the construction of the Project is provided in the Noise Report (Appendix 15).

The Noise Report notes that machinery used for the construction will include various kinds of earthmoving equipment. It also notes the indicative golf course bulk earthworks construction programme has a duration of approximately two years and bulk earthworks for the water storage reservoir will occur for a concurrent period of approximately six months. The Noise Report also confirms that the proposed construction works will be located at relatively large distances from nearby receivers (between approximately 350 – 1000 m). Additionally, the character of the construction noise is considered typical of normal rural farm machinery (i.e., tractors and harvesting machinery).

Construction noise levels of approximately 50 dB L_{Aeq} are predicted at the closest receiver (being 68 Muriwai Valley Road, located 350 m from the water storage reservoir). This level of noise comfortably complies with the 75 dB L_{Aeq} noise limit set out in AUP Rule E25.6.27³⁵.

Whilst construction noise may be audible at times, this will be at low levels, and overall, any associated adverse effects on nearby receivers are considered less than minor. Accordingly, a Construction Noise Management Plan is not considered necessary for this Project.

5.4.11 Effects on Archaeological and Heritage Values

If inadequate precautions are in place, construction activities, particularly earthworks activities, can result in damage or destruction of archaeological Sites. In these instances, cultural, archaeological and heritage values can be adversely affected, and in some cases these effects are irreversible. It follows that, prior to construction, it is important to have a

³⁵ AUP construction noise limits are based on the limits in NZS 6803:1999

good understanding of the presence and location of any known archaeological Sites or features within or near the construction area. It is also important to understand the historical context of a Site in order to inform the likelihood of finding unrecorded Sites during construction.

In the case of the Muriwai Downs Property, known archaeological and heritage Sites on the Site have been confirmed. These are summarised in Section 2 of this AEE (also see the Archaeology Report at Appendix 14). An assessment of the potential for the Project to cause damage or destruction of these Sites, and other unknown Sites that may exist, during construction is provided in the Archaeology Report (Appendix 14). The report confirms that the Project avoids most known Sites, and specifically notes the Project's self-imposed design constraint to avoid pit Sites Q11/67 and Q11/68 by establishing a 10 m earthwork buffer around these features.

The Project, however, is not able to avoid the dilapidated early 20th century cottage (Q11/614). In addition, it could also uncover subsurface evidence of a 20th century outbuilding associated with Ingram's boarding house (Q11/616). Given the historical context of the general area, there also remains a possibility that unrecorded pre-European Māori Sites could be uncovered during construction works.

In order to monitor the potential discovery of both recorded and unrecorded archaeological / heritage Sites, and to avoid or mitigate the potential for adverse effects, the Applicant proposes the following management and mitigation measures for the construction phase as recommended in the recommendations set out in the Archaeology Report:

- The preparation and implementation of an Archaeological Management Plan (“AMP”) to be incorporated into the CEMP. The AMP will detail where an archaeologist must be present for earthworks, contractor briefings, responsibilities of parties and contact details;
- Prior to the commencement of any bulk earthworks, obtaining an authority to modify or destroy unrecorded archaeological features on the Property from Heritage New Zealand Pouhere Taonga (“HNZPT”) under Section 44 of the Heritage New Zealand Pouhere Taonga Act 2014;
- Appropriate tikanga protocols will be followed prior to and during all construction works as will be determined in consultation with the Kaitiaki Committee; and
- In the event that human remains are uncovered during construction works, work will cease immediately and Mana Whenua will be contacted in accordance with appropriate protocols.

Overall, the Archaeology Report concludes that potential construction effects on both recorded and unrecorded archaeological Sites will be minimal, and with appropriate construction measures in place (e.g. construction is to be undertaken in accordance with

the conditions of any archaeological authority issued), these effects will be appropriately avoided, minimised or mitigated.

The Applicant proposes that the AMP and any archaeological authorisations issued by HNZPT be incorporated into the final CEMP.

5.4.12 Temporary Visual and Amenity Effects During Construction

Temporary adverse visual and amenity effects during the Project's construction phase are described and assessed as a component of the Landscape Report (Appendix 13). These effects are adequately mitigated by the following observations noted in The Landscape Report:

- The presence of construction activities within the Property will be staged and temporary;
- Once shaping has been completed topsoil will be spread across these areas with grass established (suitable for playing golf) with many other areas of the Property undergoing restorative or enhancement planting;
- For the Project's identified viewing audiences, most are either located in distant locations (i.e. Hamilton and Cable Road), or transitory (i.e. Muriwai Road); and
- Rural landscapes are inherently dynamic, particularly field areas, where much of the earthworks will be undertaken.

5.4.13 Cultural Effects from Construction

Potential construction effects on cultural values and Sites are set out and addressed in the CIA (Appendix 21) as summarised in Sections 5.3 above. Provided appropriate management methods are adopted on Site as set out in the Draft CEMP, and noting the various other cultural protection and enhancement initiatives underway with Te Kawerau ā Maki and the Applicant (as previously discussed), these effects are likely to be no more than minor.

5.4.14 Ecological Effects from Construction

Ecological effects related to the construction phase of the Project are discussed in the Ecology Report (Appendix 11).

Overall, the Ecology Report concludes that potential adverse ecological effects during construction earthworks will be acceptable for the following key reasons:

- Final ESCPs will be designed and implemented in accordance with best practice guidelines of GD05,
- The Project is implementing specific precautionary procedures for earthworks occurring in close proximity to wetlands (as summarised on Section 3 of this AEE) and

- For all stream works, having specific methodologies prepared by the contractor for each location and type, and having these approved and signed off by the Site Engineer and Regulatory Monitoring Representative.

5.4.15 Construction Effects Summary

Potential adverse construction related effects will either be avoided, minimised or mitigated by the proposed design (which avoids sensitive areas) and a wide range of proposed design and management initiatives. In the main, these comprise the preparation and implementation of a comprehensive CEMP that will include best practice construction management processes and procedures including:

- Earthwork, ESCPs prepared in accordance with Auckland Council GD005;
- A CTMP;
- A DMP;
- A CSMP;
- A TMP;
- An AMP and an authority from the HNZPT;
- Relevant accepted protocols and plans to manage the spread of Kauri Die-back disease; and
- Appropriate accidental discovery protocols.

Overall, it is considered that the measures contained in the CEMP and ancillary management plans will ensure that any adverse effect associated with the construction phase of the Project will be no more than minor.

5.5 OPERATIONAL EFFECTS

5.5.1 Effects on Freshwater

A summary of the potential and actual effects on freshwater resources within and near the Site are presented in the Water Effects Summary Report (Appendix 11). The Water Effects Summary Report draws on key outcomes from a number of separate technical freshwater studies and effects assessments. These assessments are outlined in separate reports appended to the Water Effects Summary Report comprising:

- A Baseline Environmental Monitoring Report;
- A Surface Water Effects Assessment Report;
- A Site Water Balance and Water Strategy;
- A Basalt Extent of Electrical Resistivity Tomography Survey Report;

- An Assessment of Proposed Groundwater Supply and Associated Hydrological Effects Report; and
- A Lake Ōkaihau Water Balance Assessment Report.

Collectively, the scope of information used to inform the assessment of freshwater effects in the case of this Project is substantial. In the interests of brevity, the information presented in this AEE represents a high-level account of the various freshwater studies undertaken and respective outcomes drawn.

5.5.1.1 Effects on Local Streams and Surface Water

The full assessment of the Project’s potential effects on local streams is provided in the Surface Water Effects Assessment Report which forms Appendix B of the Water Effects Summary Report (Appendix 10). A summary of the key methodologies and findings is presented below.

Water Quantity and Allocation Matters Including Effects on Downstream Users

The AUP includes special provisions³⁶ that apply to taking and using water to manage any effects on in-stream ecology and water quality and the ability of other consented users downstream from utilising their full entitlement to water. In the case of surface water, these provisions refer to the abstraction of water under normal flow conditions as “core allocation”, and places limits on the abstraction of core allocation to no more than 30% of the Mean Annual Low Flow (“MALF”). High-flow conditions, are when the stream flow is above median flow. Abstraction limits during these high-flow conditions is up to 10% of the stream’s instantaneous flow.

The proposal in this instance is for a high-flow take from the Raurataua Stream. That is, water will only be abstracted when conditions for this stream are above its median flow – calculated at 131 l/s.

As noted in Section 2 of this AEE, the Muriwai Links Golf Course is the only consented surface water take downstream of the Property. This is a take of core allocation water. In addition, there may be permitted surface water takes for drinking water and stock use downstream. Importantly, however, there are no other high-flow takes consented in the catchment. Therefore, given the full high-flow allocation in the Ōkiritoto catchment (as defined in the AUP) is fully available, the Project will have no adverse effects from a water allocation perspective.

In any event, water quantity and allocation related effects are mitigated further due to the following factors:

³⁶ Chapter 2 of the AUP

- The existing Muriwai Links Golf Course water take is approximately 5 kilometres further downstream of the proposed take Site. A number of tributaries join the stream in between these points, thereby further increasing the flow prior to the point of the Muriwai Links Golf Course abstraction.
- Since the high-flow take will only operate during periods of high-flow during and / or following high rainfall, irrigation for the downstream Muriwai Links Golf Club is unlikely to be required on the days the proposed high-flow take is operating; and
- Given the take is under high flow conditions, surface water would remain available for both existing and potential new permitted activity takes downstream of the Site.

Overall, the proposed high-flow surface water take is considered to have no more than minor actual effects on downstream water users.

Potential Changes to Surface Water Hydrology

The Water Effects Summary Report notes that:

- Given the surface water take will not operate when flows are below the median, there will be no impact on stream flow from the proposed take. It follows that, the proposed stream take is not likely to result in any observable visual and amenity effects on the Ōkiritoto and Toruanui waterfalls; and
- The additional impermeable surfaces represent approximately 1.6 % of the total Property area, and less than 0.25% of the total Ōkiritoto Stream Catchment upstream of the downstream extent of the Property. Therefore, the impact of this increase on existing surface water hydrological regime, and overall catchment flow, is considered to be indistinguishable from present. Additionally, the proposed inclusion of Auckland Council's sensitive stormwater management design principles mean the small change in impermeable surfaces coverage on the Property, are likely to cause no more than minor increases to flood flows in the Ōkiritoto Stream.

Overall, any changes to stream hydrology are expected to be no more than minor. It follows that any related adverse effects are also considered no more than minor.

Surface Water Quality Effects

Potential sediment discharges to water during earthworks are discussed and assessed above in Section 5.4 as being no more than minor.

Assessment of surface water effects associated with land use change and carparks are outlined in turn below.

Land Use Change

The methodology used to assess potential water quality effects resulting from the proposed change in land use is outlined in the Surface Water Effects Assessment. This

report forms Appendix B of the Water Summary Effects Report (Appendix 10). The assessment methodology involved the development of a water quality model for the Site. This model was used to simulate Total Nitrogen (“TN”) and Total Suspended Solids (“TSS”) discharges from the Property. Discharges simulated for the current land use (i.e. the pre-development, farming baseline) were compared with simulated TN and TSS discharges from the proposed future land use over the Property - inclusive of an operating golf course. Modelling results show a reduction in both the TN concentration and peak TSS concentrations within the Ōkiritoto Stream of approximately 5%. This represents an environmental improvement.

To contextualise this modelled result, it is also noted that:

- The model used is a “whole of catchment” model, therefore, it considers all Ōkiritoto Stream catchment inputs – not just those from the Property. To that extent the modelling does not quantify the degree of improvement likely to be achieved to discharges generated from within the Property itself. Given the area to be retired from dry stock and dairy cows is only around 7% of the total Ōkiritoto Stream catchment, the modelled 5% improvement for the whole of the catchment indicates water quality improvements to those surface water bodies located within the Property are likely to be considerably higher than this;
- Additional modelling conservatism should be noted since the modelling was undertaken prior to the lodge, academy, maintenance facility, and water reservoir locations and extents being finalised. As a result, these areas were not included in the post-development modelling scenario. These areas of land were instead assumed by the model to be used for dry-stock grazing. In reality, these areas will not be grazed and thus will have a significantly lower N leaching profile than represented; and
- In addition, the concept ecological restoration and enhancement planting was not modelled. This will also provide added improvements to water quality.

Overall, the Water Effects Summary Report concludes that, as a result of the removal of stock from the Site, the discontinuation of dairy farming activities elsewhere on the Property, and the implementation of proposed golf activities, the Project is likely to have a measurable positive effect on the quality within the Ōkiritoto Stream at locations downstream of the Site. Similarly, the Project is likely to have an even greater level of positive effect on water quality within other surface water bodies located on the Property.

Furthermore, fertiliser application will follow best practice management procedures to prevent excess runoff and leaching. These procedures will be documented in a Nutrient Application Management Plan (**NAMP**).

High Contaminant Generating Car Parks and Other High Use Impermeable Surfaces

As set out in the Engineering Report, and associated preliminary design drawings, stormwater from these areas will be reticulated, treated and discharged via devices that adhere to Auckland Council's GD01 guidelines³⁷. The preparation and implementation of a Draft Stormwater Management Plan ("SWMP") will also be developed and implemented to ensure stormwater from these high activity impermeable areas will be managed using best practice guidelines that minimise discharge of contaminants off Site.

While acknowledging these stormwater management methods will be used, the Water Effects Summary Report concludes that any adverse effects on surface water quality associated with the Site's high contaminant generating car parks are likely to be no more than minor.

5.5.1.2 Groundwater Effects

Information regarding the methods used to assess the potential groundwater effects, and the results of the assessments, are detailed in the Basalt Extent of Electrical Resistivity Tomography Survey report and the Assessment of Proposed Groundwater Supply and Associated Hydrological Effects report. These reports form Appendices C and D of the Water Effects Summary Report (Appendix 10) respectively.

An overview of the assessments undertaken and results are provided below.

Groundwater levels

A groundwater model was used to assess the drawdown effects of the proposed groundwater take. Both the base case (i.e., historic climate conditions and no groundwater abstraction) and proposed groundwater abstraction scenarios were simulated and aquifer drawdown results analysed. The results showed that;

- The maximum simulated drawdown within the productive basalt aquifer layer (Layer 3) is 20.4 m for a "worst case" scenario that combined drought conditions with low pre-season water storage reservoir levels;
- Aquifer drawdown will be significantly less in the upper aquifer layers, never exceeding 0.3 m in Layer 1 or 2.6 m in Layer 2;
- Hydraulic disconnection between the shallow and deep aquifer layers minimises drawdown effect in the shallow aquifer;
- During non-irrigation winter seasons, the water level usually recovers to within 1 m of baseline scenario water levels, though up to 1.6 m of residual drawdown is predicted in heavy pumping drought seasons. In these instances, it typically takes two months for groundwater levels to recover; and

³⁷ Auckland Council's Stormwater Management Devices in the Auckland Region GD01 guidelines

- In seasons with low or moderate abstraction, recovery is more rapid with groundwater levels typically recovering to within 2 to 4 m within one month and continuing to recover more gradually over the following months until pumping resumes.

Overall, these results indicate that groundwater abstraction in a typical season is likely to produce groundwater level declines around the production bore in the deep aquifer. Also, groundwater levels in the shallow aquifer will show little effect from the same pumping.

Drawdown Effects on Other Bores

Forty-three bores were found to be within a 3 km radius of the abstraction Site, ranging from an estimated 40 to 458 m deep. Analysis of the potential drawdown at these locations found that the maximum simulation drawdown never exceeded 9% of the available drawdown for any of the bores. On this basis, drawdown effects on neighbouring groundwater users are anticipated to be less than minor.

Saltwater Intrusion

It is calculated that the potential saline interface will be nearly 700 m below the production bore at the time of maximum drawdown. It is noted that this assessment is highly conservative because it is based on the maximum drawdown being achieved year-around, whereas the full potential for saline intrusion will not manifest in the timeframe where drawdown occurs and the subsequent groundwater level recovery after pumping season will reverse any landward migration of the salt-wedge. In summary, the proposed groundwater abstraction will not cause saline intrusion to occur in any way where it will be detectable.

Land Subsidence

The predicted land subsidence as a result of the proposed groundwater abstraction was primarily under 0.1 m, with a maximum of 0.17 m, and limited to the areas near the abstraction Site. The potential effects associated with land subsidence of this magnitude will be less than minor.

Groundwater – Surface Water Interactions

Stream Flow Depletion

Calculations show that a maximum baseflow reduction of 3.4% is theoretically possible at near to the pumping bore, with less reductions calculated for other location further away. It also notable that the median calculated baseflow reduction was under 0.5% of the flow which, in practice, would be unmeasurable.

These potential stream depletion effects are significantly mitigated due to the absence of any strong hydraulic connection between the deep basalt aquifer being used to supply



water and overlying aquifers. Overall, effects on stream base flows associated with the proposed groundwater pumping are considered to be less than minor.

Wetland Water Level Reduction

Similar to potential groundwater abstraction effects on stream flow, wetlands will not be impacted by the proposed groundwater take because of the disconnection between shallow and deep groundwater and due to the large thickness of low-permeability material across the Property.

Groundwater inputs to local wetlands are primarily disconnected from the deep aquifer where abstraction will occur. It follows that this disconnection also mitigates any wetland water level drop associated with groundwater pumping. Furthermore, the water level change that will manifest in a wetland is governed by the porosity of the aquifer material. For example, if an aquifer with a porosity of 10% (typical for wetlands such as those on the Muriwai Downs Property) experiences a 0.2 m reduction in water level, the corresponding reduction in a standing water body that is connected would be 0.02 m.

On the whole, the Water Effects Summary Report confirms effects on wetlands from groundwater abstraction will be inconsequential.

Lake Ōkaihau

Lake Ōkaihau is fed by surface water inputs from a stream that is separated from the production bore by a catchment boundary, therefore, it will not be affected by proposed groundwater take. The calculated lake level effect on the lake water balance will be negligible, with predicted leakage increasing by less than 0.2% (under 0.5 m³/day) over the simulation period.

Overall, the proposed groundwater take will not result in any adverse effects on Lake Ōkaihau water levels.

Groundwater Quality Effects

Potential adverse effects associated with the proposed discharge of treated wastewater to ground from the Site's main treatment plant are mitigated by the following key factors:

- The high level of treatment proposed prior to disposal;
- The commitment to design and operate the treatment plant and disposal field in accordance with Auckland Council guidelines;
- By incorporating conservative assumptions as part of the treatment and disposal design; and
- By locating the disposal field at a topographical high point on the Site, where depths to groundwater are likely to be comparatively high and at a location that is setback from sensitive environments well in excess of recommended minimums.

Overall, any adverse groundwater quality effect resulting from wastewater discharges to ground are considered to be no more than minor.

Adverse effects on groundwater quality from the soakage of stormwater generated from carparking areas will be mitigated primarily through the adoption of sensitive design elements such as bioretention devices and rain gardens. Rain gardens help remove pollutants by filtering the stormwater before it either soaks to ground or is discharged to surface receiving environments. Overall, it is concluded that, provided the 2017 Auckland Council guideline GD01 (or any subsequent update) is used in the design for all high-contaminant generating carpark stormwater devices, no adverse effects on groundwater quality are anticipated.

5.5.1.3 Effects on Lake Ōkaihau

Potential Lake Hydrology Changes

With regard to changes in inflows to the lake, the largest surface water inflow to the lake occurs from the south, with only minor components entering along the western, northern and eastern margins. No earthworks or development are proposed within the surface water catchment to the south, therefore no changes to inflows from the lake's main contributing catchment will occur.

Whilst earthworks are proposed as part of hole 2 of the golf course that runs along the lake's northern edge, these earthworks are relatively minor and will consist largely of topsoil stripping, minor recontouring and topsoil replacement. The final landform in this area will also retain its current profile, including its existing gentle slope towards the lake. Consequently, minor surface water runoff into the lake from the north will still occur as it does currently. On this basis, it is concluded that any changes to the inflows to the lake will be no more than minor.

In terms of the changes in lake outflows, there is no defined overland flow from the lake. Water is lost from the lake predominantly through groundwater seepage in a north-westerly direction towards the Ōkiritoto Stream, and to a lesser extent via evaporation direct from the lake's surface. Although minor recontouring is proposed along the northern margin of the lake, and flattening of the natural land surface approximately 200 m further north, there will be no deep excavations that could feasibly result in the development of tomos or preferential drainage flow paths from the lake. Accordingly, it is concluded that the Project will not cause or exacerbate seepage loss from Lake Ōkaihau.

Lake Water Quality

With respect to changes in water quality resulting from fertiliser runoff, a narrow margin of land along the lake's north-western margins gently slopes down towards the lake. As a result, the lake will be subject to small contributions of surface runoff from this area during high intensity rainfall events. Provided best practice fertiliser application and management

processes are followed, as described in the Golf Course Construction, Operation and Maintenance Report (Appendix 3), the potential for fertiliser leaching or runoff causing lake eutrophication is considered to be low.

In addition, it is noted that the combined effects associated with the removal of stock from the lake's catchment and the implementation of the concept ecological restoration and enhancement planting are likely to result in a marked improvement in the currently degraded quality of water within the Lake Ōkaihou.

5.5.14 Potential Changes to Hydrological Functioning of Natural Wetlands

Disruption of subsurface impermeable layers

With regard to any disruption of subsurface impermeable layers, as described in Section 3 of this AEE, the imposition of maximum allowable cut depths for all earthworks was a key design criterion for the Project. The design's adherence to this criterion should avoid any changes to the hydraulic functioning of wetlands from a groundwater input perspective. Accordingly, the Water Effects Summary Report concludes that the potential for negative effects on Type 4 wetlands resulting from the disruption of impermeable layers will be less than minor.

Changes to Wetland Contributing Catchment Areas

With respect to changes in the catchment boundary, the Water Effects Summary Report (Appendix 10) identified that all four classifications of wetland, and in particular Type 1 wetlands, would be affected if the extent of their upstream catchment were significantly reduced. With the use of pre and post development catchment maps to produce changes in sub catchment areas for all wetlands within the Site, the following observations are made:

- The largest change in wetland catchment area post development resulting from earthworks and contouring would be -5.5%.
- The average reduction in wetland catchment area is less than 1% and six of the twenty-three wetland subcatchments increased in extent by between 1 to 5%.

Water Effects Summary Report confirms that these small reductions in upstream catchment area, and thus contributing surface water flow, are not expected to have a measurable difference in wetland standing water level or extent.

5.5.15 Water Use Efficiency Effects

As previously highlighted, the reliable supply of water is critical to the success of the Project and the golf course in particular. It follows that, water use efficiency is inherently incentivised. The incentive to maximise efficiency of water usage is evidenced by the following:

- Surface and groundwater take monitoring and controls;
- The adoption of state-of-the-art irrigation technology, monitoring and control systems to ensure water application on all turf surfaces will be optimised and overuse is avoided.
- The inclusion of rain harvesting infrastructure on the Sports Academy and GPMC buildings for potable and domestic supply; and
- The preparation and implementation of standard operating procedures for managing irrigation and water on the site.

Overall, it is considered that water usage will be efficient and sustainable.

5.5.1.6 Freshwater Monitoring

Once operational, the Site will implement an appropriate water monitoring plan and maintain associated monitoring records. A preliminary freshwater monitoring plan is provided in Table 22.

The Applicant proposes to include a water monitoring plan, generally in accordance with Table 22, within a Site Operations and Maintenance Plan (**SOMP**).

This monitoring will enable any impacts on freshwater resources associated with the proposed surface and groundwater abstractions to be quantified. Records of the monitoring plan will be provided to Mana Whenua and will be available to include in any future operational reporting requirements.

Table 22: Preliminary Freshwater Monitoring Plan (Site Operations)

Monitoring Location	Parameter	Monitoring Frequency	
		Irrigation Season	Non-Irrigation Season
Surface Water Take	Rate (L/s)	Continuous	Continuous
	Volume (m ³)	Daily	Daily
Flow Site 1 - Raurataua Stream	Flow (L/s)	Continuous	Continuous
Combined Groundwater Take	Rate (L/s)	Continuous	Continuous
	Volume (m ³)	Daily	Daily

Monitoring Location	Parameter	Monitoring Frequency	
		Irrigation Season	Non-Irrigation Season
Groundwater Abstraction Bores	Level (m amsl)	N/A	Quarterly
W1 (Adjacent to Pilot bore)	Level (m amsl)	Daily	Quarterly
MW2 (Adjacent to Pilot bore)	Level (m amsl)	Daily	Quarterly
MW3 (300 m NE of Pilot bore)	Level (m amsl)	Daily	Quarterly
MW4 (500 m SE of Pilot bore)	Level (m amsl)	Weekly	Quarterly
MW5 (600 m SE of Pilot bore)	Level (m amsl)	Weekly	Quarterly
MW6 (400 m SE of Pilot bore)	Level (m amsl)	Weekly	Quarterly
Lake Ōkaihau North (MW7)	Level (m amsl)	Weekly	Monthly
Lake Ōkaihau North (MW8)	Level (m amsl)	Weekly	Monthly

5.5.2 Ecological Effects

An assessment of the Project's potential effects on ecology and ecological values is provided in the Ecology Report (Appendix 11). Methods and key findings detailed in the Ecology Report are summarised below.

5.5.2.1 Methods Adopted

The methods used in preparing the Ecology Report included:

- Eight Site surveys to identify and assess the extent and general condition of ecological features, in particular vegetation, watercourses, wetlands, and habitat of indigenous wildlife. Targeted surveys of indigenous freshwater fish, lizards and avifauna were also undertaken; and
- Specific investigation of the following ecological or environmental aspects:
 - Wetlands and streams;
 - Lake Ōkaihau;

- Native lizards;
- Indigenous vegetation;
- Threatened and rare (At Risk) species;
- Kauri;
- Native fish;
- Birdlife of forests, open country and wetlands (and seabirds that fly over the Site); and
- Bats – by information review and habitat assessment.

5.5.2.2 Actual or Potential Adverse Ecological Effects

5.5.2.3 Context

The Ecology Report notes that the Project largely avoids actual and potential adverse effects to ecological values on the Property to the greatest extent practicable. In this respect the following key observations are highlighted:

- All 21 wetlands, totalling approximately 31 ha on the Property, have been avoided, and works within 10 m of wetlands have been minimised where practicable;
- A total of 12,948 m of streams within the Property will be avoided. Only 184 m of streams will be affected by the Project, constituting approximately 1.4 % of the streams within the Property, and estimated at < 0.01 % of the overall Ōkiritoto Stream catchment; and
- A total of 773,421 m² of forest within the Property meeting the AUP's SEA criteria will be avoided. Approximately 1,396 m² of vegetation on the margins of SEA_T_5525 will be affected by the Project, which constitutes ca. 1.3 % of the total area of SEA_T_5525 or 0.18 % of the total area of SEA forest within the Property.

5.5.2.4 Effects on Natural Wetlands

Potential loss of wetland extent

As previously noted, all 21 wetlands on the Property will be avoided by the Project. As a result, there will be no loss of wetland extent.

Discharge of contaminants to wetlands

Also as previously noted, due to the design philosophy of maintaining natural flow paths, minimising catchment area changes, and adopting best practice erosion sediment controls, including bespoke procedures developed specifically for work in close proximity to wetland margins, will effectively address the risk of sediment discharges into wetlands.

The implementation of appropriate management methods for fertiliser application and documenting these as part of the SOMP, will address any potential nutrient runoff into wetlands.

Changes to the Hydrological Functioning of wetlands

In respect of any adverse impacts linked with potential changes to the hydrological functioning of wetlands, the Ecology Report concludes, based on the Water Effects Summary Report, that:

- On the whole, the adverse effects on wetlands from groundwater abstraction will be less than minor;
- Since the proposed earthworks and Site contouring do not exceed the recommended maximum cut contours, the potential for negative effects on Type 4 wetland hydrology resulting from the disruption of impermeable layers is considered negligible;
- Given the minor changes to wetland catchment areas associated with Site development earthworks and contouring, potential changes in wetland hydrological function are considered to be well within what would be considered natural variation in flow volume. Given the ‘colonising’ nature of the wetland plant species within each wetland, and the resilience of these species to environmental changes (such as cattle browse, pugging, stock-generated nutrient saturation), these very small changes to flow that may arise are easily within the natural tolerances of the plant species present within the wetlands.

Overall, the actual or potential adverse ecological effects to the current or potential state of wetlands on the Property will be nil or negligible. In addition, there is unlikely to be a measurable change in wetland extent, and therefore complete or partial drainage of each wetlands is highly unlikely to occur.

5.5.2.5 Effects on Terrestrial Vegetation and SEAs

There are 13 locations on the Property which require indigenous vegetation clearance. This includes the clearance of young and mature trees outside of SEAs with no formal protections, and approximately 1,396 m² of vegetation on the margins of SEA_T_5525. The clearance of vegetation within SEA_T_5525 constitutes approximately 1.3% of the total area of SEA_T_5525 and 0.18% of the total area of SEA forest within the Property. In addition to clearance within SEA_T_5525, nine mature native trees within pasture areas are proposed for clearance, including totara, pohutukawa, ti kouka, kahikatea and kanuka.

Vegetation clearance will mostly be of common native species. While some of the trees proposed to be cleared are classified as “Threatened”, these are common native species, and their presence on the Property should be regarded in the context of their ecological value, rather than their precautionary conservation listing (Ecology Report, Appendix 11).

All significant trees within the proposed fairway and green areas have been retained, where practicable. Any works within the Protected Root Zone (“PRZ”) are proposed to be minor and will involve the augmenting of the existing ground for the preparation of new turf or rough grass areas. As with the Arboriculture Report (Appendix 12), the Ecology Report also notes that these trees are located in areas which are heavily grazed, with evidence of stock compaction and browsing. Therefore, the removal of stock from the unfenced areas of the Property as a result of the Project will greatly improve the long-term prospects for these trees on the Property.

The Ecology Report notes there are options for minimising effects of vegetation clearance and tree removal on the surrounding forest and mature indigenous trees. These include:

- Root protection protocols to avoid major root systems, and minimise effects on roots during excavations;
- Storage of excavated materials outside of the forest areas; and
- Pruning and / or crown lifting overhanging branches to facilitate keeping mature trees while maintain a safe distance between trees and earthworks.

These protocols will be incorporated into the TMP.

Overall, the Ecology Report concludes that the actual and potential adverse effects associated with indigenous vegetation clearance is negligible, and that a clear overall net-gain ecological outcome will result from the mitigation planting (discussed later).

5.5.2.6 Kauri Management

The Project will include the removal of two mature Kauri trees within grazed pasture areas, as well as the removal of dead, standing Kauri trees. Given the presence of Kauri Dieback Disease has been identified within the Property, all Kauri within the Project area will be treated as affected by disease and managed in accordance with the current biosecurity guidelines provided by the MPI and Auckland Council.

The management of Kauri Dieback within the Project area will include the management of soil and vegetative material during construction as discussed above, and during any post-development earthworks. Any soil potentially infected by Kauri dieback will be stockpiled separately and only used in areas on the Property that avoid the potential infection of Kauri trees that are currently free from infection. All woody / vegetated material proposed for removal will be disposed of appropriately.

The Ecology Report considers that, provided effects on Kauri are managed in accordance with Council standards, the actual and potential adverse effects to the population locally and regionally will be very low.

5.5.2.7 Effects on Aquatic Ecology

Stream Modification – Stream P3 Culvert

As With respect to the proposed culverting of Stream P3, the Ecology Report presents the actual and potential adverse ecological effects of the five key biophysical components as follows:

- Water quality – There will be no discernible change in water quality factors as almost all flow originates from the upstream wetland catchment, which will continue to be managed in its current form (no change);
- Water quantity – There will be no discernible change in water quantity factors as the upstream catchment will be unchanged;
- Habitat – There will be a significant degradation in connectivity to the stream bed, margins and riparian vegetation across stream P3 as the culvert will sever the (poor) connections present;
- Aquatic life – There will be a significant localised degradation of macrophytes, invertebrates and fish across Stream P3 as the culvert will significantly reduce (but not eliminate) bed habitat and the ability to support these communities; and
- Ecological processes – There will be a significant degradation in all localised ecological processes across Stream P3 as the processes within this reach of the stream will be severed or reduced to simple pathways.

Given the above, and not taking into account the proposed ecological mitigation (discussed later), the modification of Stream P3 will result in a moderate, permanent, ecological effects on the localised Stream P3 environment. Taking into consideration the highly degraded state and poor potential future state of Stream P3, the placement of the 168 m culvert and associated riprap, totalling a reach of 175 m reach of Stream P3, will have a low adverse ecological effect on the wider Ōkiritoto Stream catchment due to the small magnitude of the effect (<0.01% of the total catchment), and a relatively small change in ecological value and functions between its current and proposed state.

Stream Modification – Stream I9 Infilling (reclamation)

Stream I9 is a small intermittent stream, with the lower reach within a native forest catchment and does not have suitable habitat to support fish. The Ecology Report presents the actual and potential adverse ecological effects assessment of the five key biophysical components as follows:

- Water quality – There will be no discernible change in water quality factors within Stream I9;
- Water quantity – There will be no discernible change in water quantity factors within Stream I9;

- Habitat – There will be no discernible change in habitat factors within Stream I9;
- Aquatic life – There will be no discernible change in aquatic life within Stream I9; and
- Ecological processes – There will be no discernible change in ecological processes within Stream I9.

Given the above, the infilling of 16 m of Stream I9 will have a very small magnitude of effect on the current and potential future state of the stream, and as such, will result in a low level of permanent ecological effects on the localised environment of the stream. Additionally, there will be a negligible adverse ecological effect on the wider Ōkiritoto Stream catchment due to the small magnitude of the effect (< 0.01% of the total catchment).

Overall, the infilling of 16 m of Stream I9 will have a very small magnitude of effect on its current and potential future state and, therefore will result in a low level of permanent ecological effect to the localised stream environment.

In addition, there will be a negligible adverse ecological effect to the wider Ōkiritoto Stream catchment due to the small magnitude of the effect (< 0.01 % of the total catchment).

The level of loss of ecological value and functions arising from the combined culverting of Stream P3 and infilling of Stream I9 will be negligible at the scale of the Ōkiritoto Stream catchment.

With appropriate mitigation, potential effects on loss of fish and barriers to fish passage can be addressed (discussed later).

Lake Ōkaihau

The key conclusions from the Water Effects Summary Report which are relevant to the potential effects on Lake Ōkaihau' ecology are:

- Changes to inflows to the lake associated with Site grading and contouring are considered to be no more than minor;
- The proposed earthworks will not cause or exacerbate seepage loss from Lake Ōkaihau; and
- Provided best practice fertiliser application and management processes are followed, the potential for further fertiliser leaching or runoff to the lake is considered low.

As a result of these findings, the Ecology Report concludes the Project is unlikely to result in loss of Lake Ōkaihau aquatic habitat or values.

Surface Water Take and Water Storage Reservoir

The following observations are made in the Ecology Report in respect of potential effects on aquatic habitat and ecology from the proposed surface water take and operation of a water storage reservoir:

- The reservoir and associated pipe infrastructure are located to the east of the quarry within areas of grazed pasture grassland and have been located to avoid ecologically sensitive areas, including wetlands, streams, indigenous vegetation and habitats for indigenous fauna as well with a 10 m minimum setback from these features;
- The proposed high flow surface water take will have no negative impact on stream habitats or fauna, as the take regime represents a low proportion of the flood flow and will only occur at times of high (flood) flow;
- The water intake structure will be designed, constructed, operated and maintained to avoid adverse effects on biota, including the entrapment of fish;
- The take point is located 220 m downstream from the nearest wetland; and
- When completed, the reservoir, like many other created waterbodies of this scale, will provide additional feeding and roosting habitat for native Avifauna and fish (eels).

Overall, the Ecology Report concludes that the actual and potential adverse ecological effects associated with surface water take and water storage Project will be low and that an overall net-gain ecological outcome will result from the creation of this reservoir as it will provide additional habitat for native avifauna and fish (eels).

5.5.2.8 Effects on Terrestrial Fauna

Lizard Management

While the quality and extent of habitat for native lizards on Site will not be significantly altered from its existing state, vegetation clearance does pose a direct risk to 'At Risk' native lizard species including copper skink, ornate skink, elegant gecko and forest gecko if they are present.

To minimise the potential for adverse effects on native lizards, lizard-sensitive land clearance protocols will be adopted. In terms of the Property, this will mean ensuring that pasture grassland is progressively grazed down to a low-level by stock and allowing any potential resident skink to naturally disperse into surrounding habitats. If this is not achieved prior to the commencement of earthworks, a pre-clearance lizard survey will be undertaken by a herpetologist permitted by the Department of Conservation ("DOC") to determine if any native lizards are present on the Site.

In areas of contiguous indigenous vegetation (e.g., clearance within SEA_T_5525), lizard-sensitive clearance protocols will include ensuring that any tree crowns or branches felled are left on the ground for at least two weeks prior to mulching or their removal to a final destination. This will ensure that if lizards are present within foliage or branch / trunk

sections that they can leave of their own volition and seek refuge in live vegetation nearby.

The survey and salvage of native lizards, where necessary, from areas of potential habitat will be undertaken in accordance with a Lizard Management Plan (“**LMP**”). A LMP is proposed to form part of the CEMP.

Overall, the Ecology Report concludes that provided effects on lizards are managed to DOC standards, the actual and potential adverse effects to lizard populations locally and at catchment or district level will be negligible.

Avifauna Management

The Ecology Report notes that, except for Black Shag, birds recorded on the Property are all widely distributed throughout the Auckland region, and in most cases, the rural environment.

Notwithstanding this, a precautionary approach is being adopted to avoid any potential adverse effects to ‘Threatened’ or ‘At Risk’ nesting birds associated with the proposed vegetation clearance. In this regard, the construction methodology for the Project will seek to undertake tree clearance outside of the key breeding period for native forest birds (September to January inclusive). Where tree clearance cannot avoid the key bird breeding period, all areas proposed for vegetation clearance will be assessed by a suitably qualified and experienced ecologist to ensure that ‘Threatened’ or ‘At Risk’ species are not breeding within those areas.

Overall, the Ecology Report concludes that provided effects to avifauna are managed in accordance with the above protocols, the actual and potential adverse effects to populations locally and regionally is likely to be very low.

Long-tailed Bat Management

The Ecology Report indicates there is a high likelihood of bats being present within the Property (although none have been observed on the Property to date. Accordingly, a survey in the stands of mature trees to be cleared will be undertaken to confirm presence/absence. The survey will be undertaken in general accordance with industry best practice outlined both the Bat Management Framework set out by Waka Kotahi New Zealand Transport Agency³⁸ and DOC’s best practice manual of conservation techniques³⁹.

³⁸ Smith, D., Borkin, K., Jones, C., Lindberg, S., Davies, F., & Eccles, G. (2017). Effects of land transport activities on New Zealand’s endemic bat populations: review of ecological and regulatory literature. NZ Transport Agency research report 623.

³⁹ Sedgeley, J., O’Donnell, C., Lyall, J., Edmonds, H., Simpson, W., Carpenter, J., Hoare, J., McInnes, K. 2012. DOC best practice manual of conservation techniques for bats. Inventory and monitoring toolbox: bats DOCDM-131465. Department of Conservation, Wellington.

The protocols aim to provide clear procedures that are to be followed prior to the removal of all trees in the proposed area of vegetation clearance, with the goal of avoiding mortality or injury to long-tailed bats during clearance activities.

Trees that have potential to be used as a maternity roost will not be removed during the bat maternity period of November – February, and all relevant vegetation clearance work will be in accordance with Wildlife Act permit(s) issued by DOC.

Provided effects to long-tailed bats are managed to DOC standards, the actual and potential adverse effect to the population(s) is likely to be very low.

Lighting Effects

Additional lighting at night has the potential to adversely impact long-tailed bats and seabirds transiting through the Muriwai local area. In this respect, the Ecology Report notes the following points:

- The magnitude of these adverse effects is difficult to assess, however, it is assumed that the sensitivity of animals to lighting is moderate, based on previous exposure to light disturbance from streetlights in Muriwai village and the wider peri-urban environment; and
- Even when obvious light effects on wildlife have been observed (i.e., changes in behaviour), it isn't possible to conclude these effects are detrimental to the population, without being able to link them to long-term changes in breeding success, mortality, population size or fitness.

The proposed lighting for the Property will adopt the following design features to reduce ambient light spilling into forest and wetland habitats, as well as wider pasture areas:

- A lighting design that requires light shields / buffers on pathway or internal road lights or downlights to minimise light spillage;
- Downlights included in buildings and paths to be down-facing only;
- No flood lights within areas facing forest vegetation; and
- All lighting will also comply with AUP permitted activity standards.

While some flood light will be used on the Sports Academy range, the design, direction and location of this lighting will be well away from forest areas and distant from any habitats that are likely to attract bats as foraging Sites.

With respect to nocturnally active seabirds using the North Auckland Flyway, the above lighting design features will also minimise the risk that seabirds will be attracted or distracted from their natural flight path. Further, it is noted that the North Auckland Flyway includes substantial areas of Auckland city, townships, villages and rural lifestyle areas that

contain a wide range of lighting types and have extensive lighting. As such, the Ecology Report considers the additional proposed lighting will not significantly add to this baseline.

Overall, it is concluded that, while the potential effects of lighting on wildlife is unknown, the design criteria and careful placement of major sources of lighting will appropriately minimise light spillage and any potential to change the behaviour of these species.

5.5.2.9 Effects of Golf Balls in the Environment

In respect of golf balls straying from playing surfaces into sensitive receiving environments such as native forest remnants, wetlands, streams and Lake Ōkaihau, the Ecology Report notes the following:

- The design of the golf course includes wide fairways and wide areas on the opposite side of any hole where wetlands run alongside that will result in fewer golf balls being hit into sensitive receiving environments.
- Based on the hole positions, most golf balls that may be hit into sensitive receiving environments will most often be rolling in, rather than being hit deep within a wetland or within Lake Ōkaihau. As such, these golf balls are expected to be easily recoverable with limited disturbance to the local environment; and
- To minimise potential adverse effects associated with golf balls being hit into sensitive receiving environments, a standard operating procedure for the retrieval of golf balls from these areas has been prepared (Golf Course Construction and Maintenance Report (Appendix 3)). This includes:
 - Signage to advise golfers to KEEP OUT of sensitive environments;
 - Retrieving golf balls visible from the Lake Ōkaihau shoreline or wetland margins using a telescopic ball scoop;
 - Monthly checks of native forest, streams, wetland margins and Lake Ōkaihau margin to retrieve all golf balls within the 3 – 5 m edge without entering the water; and
 - An annual retrieval (late summer) of all golf balls within wetland centres, Lake Ōkaihau and forest areas. This timing will avoid the key breeding season for avifauna and is when wetlands are expected to be at their driest point and at least risk of being disturbed by human foot traffic.

Also, the number of golf balls rolling into these sensitive environments will be reduced as a result of wetland riparian margins being planted with native rushes and shrubs. .

Overall, the Ecology Report concludes that the overall number of golf balls entering and / or remaining in sensitive environments and associated actual and potential adverse effects is considered to be low.

5.5.2.10 Summary of Potential and Actual Adverse Ecological Effects

The overall assessment of potential and actual ecological effects is summarised in Table 13 of the Ecology Report (Appendix 11).

5.5.2.11 Significance of Adverse Ecological Effects

The Ecology Report provides an effects assessment following the steps in the effects management hierarchy. These steps identify the expected residual level of adverse effects on ecological features following the Applicant’s proposals to avoid, minimise and remedy the Project’s adverse effects. If following this exercise, residual adverse effects are considered more than minor, the steps also require identification of whether these residual effects can be redressed through a biodiversity offset, and if not, whether ecological compensation is required.

The Ecology Report’s assessment also considered only the potential adverse effects of the Project, not the potential benefits that may occur from extensive ecological enhancement proposed as part of the Project away from areas where effects may occur.

The tool used to do this is the matrix approach as described by the Environment Institute of Australia and New Zealand (EIANZ). The EIANZ guidelines, and the impact assessment matrix in particular, provides a robust, concise and consistent approach to effects assessment, whilst ensuring that individual expert evaluation and opinion is preserved. The authors of the Ecology Report have applied this method to their assessment. The results are reproduced in Table 23 below. This table includes information on the level of adverse effect determined after applying the effects of mitigation proposed across the Site.

Table 23: Assessment of significance of ecological effects using the EIANZ matrix method⁴⁰.

Factor	Value of resource ^a	Magnitude of effect ^b	Level of effect ^c after mitigation
Lake Ōkaihou	High	Negligible	Very low
Wetlands	High	Negligible	Very low
Okirirtoto catchment	High	Negligible	Very low

⁴⁰ As contained within the EIANZ EciA guidelines. Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. 2018. Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition

Factor	Value of resource ^a	Magnitude of effect ^b	Level of effect ^c after mitigation
Stream I9	Moderate	Minor	Low
Stream P3	Low	High	Moderate
Indigenous fish	High	Minor	Low
Significant Ecological Areas (SEA)	High	Negligible	Very low
Kauri trees	High	Minor	Low
Other indigenous vegetation & mature native trees	High	Minor	Low
Indigenous lizards	High	Minor	Low
Avifauna	High	Minor	Low
Longtail bat	High	Minor	Low
Pasture and treeland habitat for indigenous birds and lizards	Low	Negligible	Very low

^a EIANZ matrix tables 5 and 6.

^b EIANZ matrix table 8; measured in the context of the catchment (streams) or District (terrestrial values).

^c EIANZ matrix table 10.

In respect of the magnitude of effects, the Ecology Reports highlights that:

- Overall, the actual or potential adverse effects on ecological values that may result from construction activities will be generally less than minor or negligible;
- For potential effects that are (ecologically) minor or less than minor, no response through a biodiversity offset or ecological compensation is necessary.

- When the ecological benefits of the extensive planting programme for forests, wetlands and streams is taken into account, a clear net-benefit for ecological values across the Property will result.
- For potential effects that are considered to be more than minor, such as for the culverting of Stream P3, ecological enhancements and protections are proposed as an offset package to address residual adverse effects.
- In summary, apart from the adverse effect associated with the infilling and culverting of two stream sections, all other potential adverse effects will be nil or less than minor.
- The extensive programme of ecological enhancement proposed as additional enhancements provides assurance that a clear net-benefit for stream, lake, wetland and forest communities and the Property's ecological system will result as part of this Project.

The Ecology Report states that the enhancements proposed can be divided into several categories – primarily those that are required to remedy or mitigate effects and ecological management that has been volunteered by the Applicant as part of the Project.

Ecological works required to address adverse effects that cannot be avoided will include:

- Mitigation – planting of forest margins for SEA_T_5525 to replace native vegetation clearance within SEA_T_5525.
- Offset – Stream daylighting and enhancement works to provide ecological redress for culverting P3.

Concept ecological restoration and enhancement volunteered by the Applicant includes:

- Extensive ecological restoration works within streams, Lake Ōkaihau and forest areas to protect and enhancement ecological values; and
- Restoration for wetlands within the Project area (not all of the Property).

5.5.2.12 Off-Setting

Following the standard Environmental Compensation Ratio analysis, and applying the residual loss of culverting and placing riprap over a total of 175 m of permanent stream and infilling 16 m of intermittent stream, the length of stream restoration required to achieve no-net-loss of stream length and ecological functions is estimated to be 357 m. This includes:

- Enhancements to 326 m of existing degraded permanent stream P2, and
- Re-creation of 31 m of intermittent stream I2 (through daylighting⁴¹).

Locations for the proposed stream offset/restoration are shown in Figure 76.

⁴¹ This term relates to the re-opening of a stream that has been previously covered over with tiles.

Restoration includes stock removal, planting of 20 m wide riparian margins, weed control, fencing, and in perpetuity protection for part of Stream P2. In addition, a 16 m reach of Stream I2 will be 'daylighted' (i.e. the removal of historic piping of a portion of the headwater) to ensure there is no net loss of stream extent associated with the development.

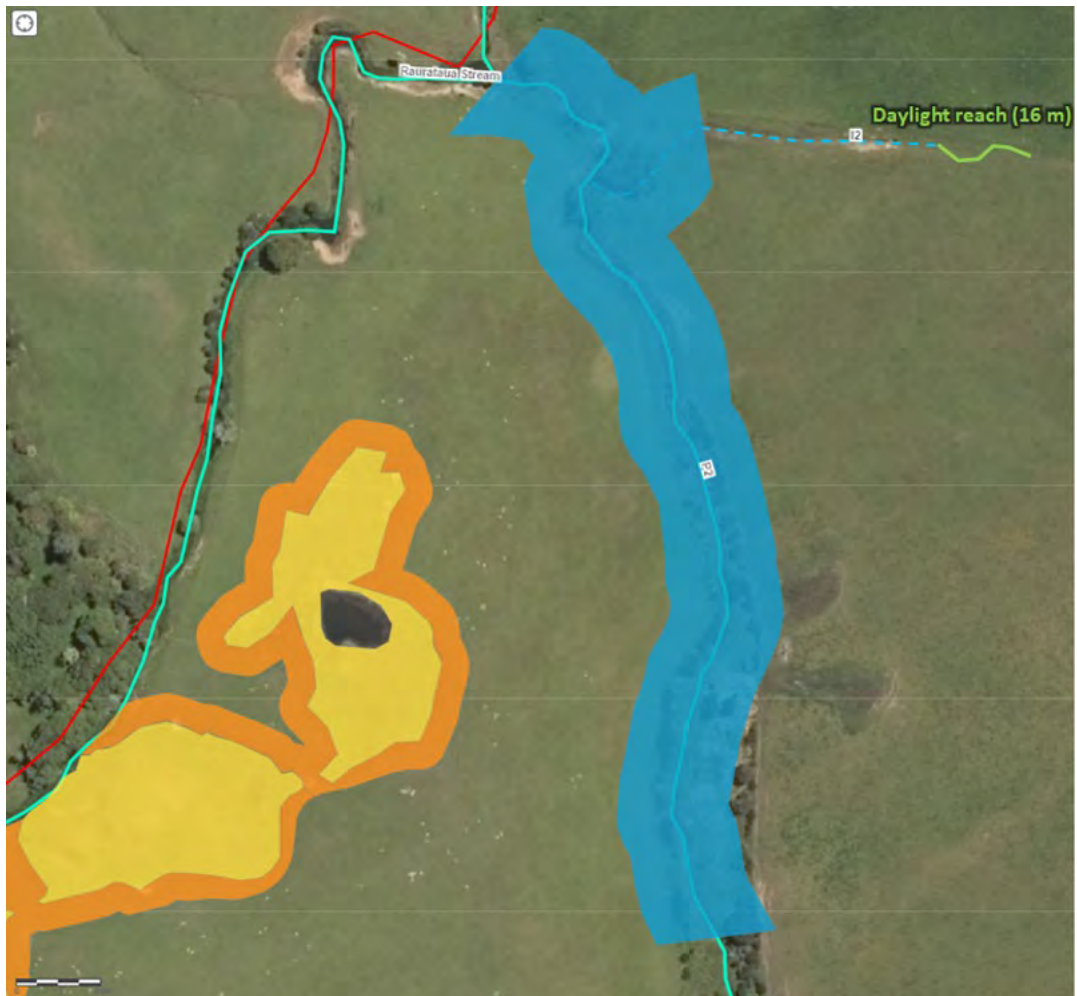


Figure 76: The approximate extent of ecological offsetting (blue area) proposed for enhancement at stream P2 and I2, and the approximate extent of daylighting at Stream I2 (green line). Permanent stream (solid blue line), intermittent stream (dashed line), Property boundary (red line). Yellow and orange areas are nearby wetland and restoration buffer planting – these are not included in this stream ecological offsetting programme.

5.5.2.13 Key Ecological Effects Conclusions

The following key conclusions are drawn from the Ecology Report;

- There will be no loss of wetland extent or values;

- There will be no drainage or partial drainage of a wetland or any part of a wetland;
- Apart from the localised adverse effects associated with the culverting of stream P3, provided good practice mitigation measures such as construction management, wildlife salvage, management and relocation are undertaken, all other potential adverse effects will be nil or less than minor; and
- The extensive enhancements and restoration proposed can be expected to result in a significant net-benefit to indigenous fauna, forests, streams, and wetland values and functions across the Site.

The Applicant will adopt the Ecology Report recommendations and will prepare and implement the following management plans:

- Ecological Management Plan - that addresses all restoration, enhancement and offset works required to address ecological effects from the Project; and
- A Restoration Planting Plan - which addresses all the volunteered restoration and enhancement works proposed by the Applicant.

5.5.2.14 Ongoing Arboricultural Effects

As mentioned earlier, the Arboriculture Report includes a comprehensive account of the scope of tree and vegetation removal required to construct the Project. The Arboriculture Report also identifies effects on trees and groups of trees likely to endure post-construction. In summary these include:

- Adverse effects on trees associated with maintenance pruning required to retain golf play lines of sight; and
- Adverse edge effects on remaining trees adjacent to trees to be removed.

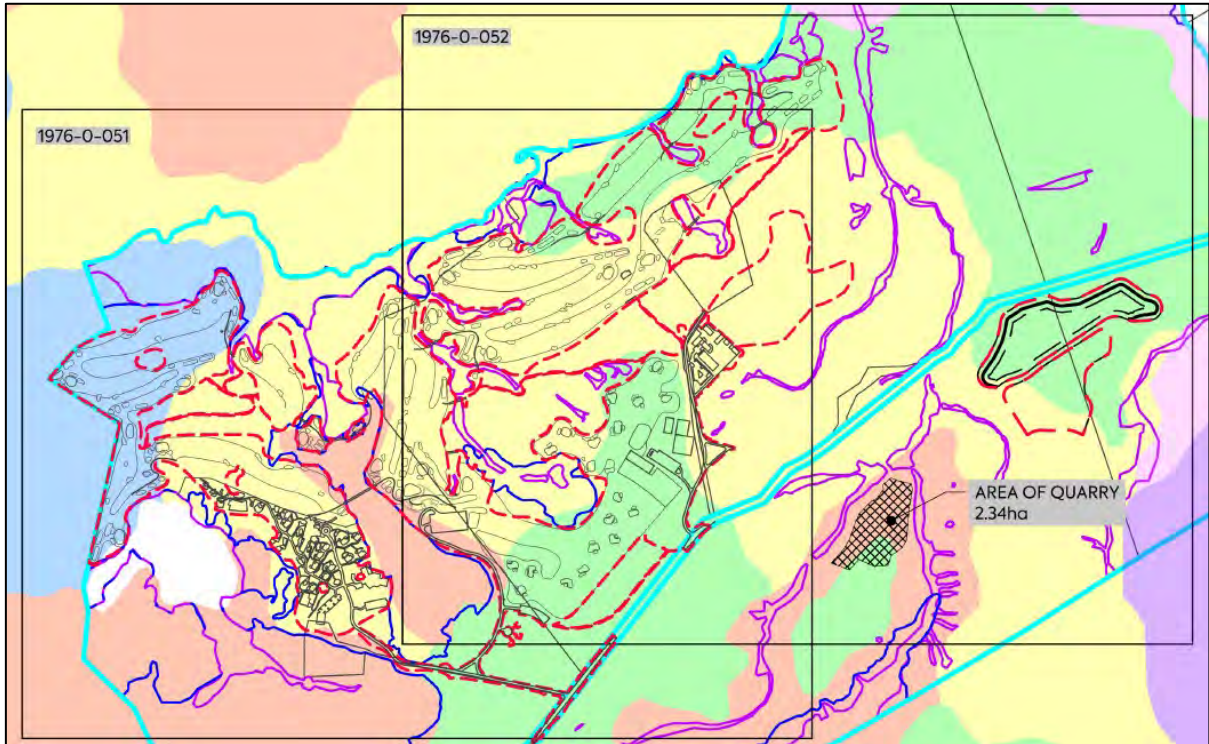
With respect to ongoing pruning, advice set out in the Arboriculture Report confirms this can be undertaken in accordance with relevant permitted activity rules and will meet all relevant performance standards. It is noted that potential edge effects are a function of tree removal. To this extent, such tree health effects were considered as part of the Arboriculture Report's assessment of construction effects. This concluded that these effects were acceptable from an arboriculture perspective.

In terms of other longer term adverse arboriculture effects, the Applicant proposes to retain the TMP for the duration of the development. Although the TMP will be primarily used for the construction phase of the Project, it will be equally relevant to protect the ongoing health of trees during the Site operations phase. To this extent, the TMP will be reviewed after the construction phase and included as part of the SOM. The objectives and procedures to be set out in the post-construction TMP will focus on tree maintenance activities such as pruning and trimming along with any other specific maintenance processes relating to indigenous trees or groups of indigenous trees on Site.











Overall, it is considered that any ongoing arboriculture effects will be less than minor.

5.5.3 Effects on Soils

Figure 1 from the Soil Report (Appendix 8) shows the Site footprint and its relation to various soils on the Property (reproduced below Figure 77).



LEGEND:

EXTENT OF WORKS	
CLIENT'S PROPERTY BOUNDARIES	
EXISTING WETLANDS	
MAPPED SEA/ONF (BY ECOLOGIST)	
TYPIC SANDY RECENT SOIL (RST), PINAKI SOIL, LUC 6e15	
TYPIC IMPEDED ALLOPHANIC SOIL (LIT), LUC 2e2	
ACIDIC ORTHIC GRANULAR SOIL (NOA), RED HILL SOIL, LUC 6e16	
ACIDIC ORTHIC GRANULAR SOIL (NOA), RED HILL SOIL, LUC 4e3	
ACIDIC ORTHIC GRANULAR SOIL (NOA), RED HILL SOIL, LUC 2e2	
TYPIC ORTHIC GRANULAR SOIL (NOT), WAITAKERE CLAY, 4e3	

CALCULATION OF AREAS (HECTARES)

TOTAL AREA OF CLIENT'S PROPERTY	506.29
AREA OF PRIME SOILS (LUC2e2) AT CLIENT PROPERTY	153.0
AREA OF OTHER SOILS ON THE SITE AT CLIENT'S PROPERTY	353.29
TOTAL AREA OF EARTHWORKS (GOLF COURSE+LODGE+CLUBHOUSE+ACADEMY AREA)	98.17
AREA OF EARTHWORKS LOCATED ON PRIME SOIL (LUC2e2)	28.41
AREA OF EARTHWORKS LOCATED ON (LUC4e9)	55.5
AREA OF EARTHWORKS LOCATED ON OTHER SOILS	14.26
TOTAL AREA OF EARTHWORKS (WATER RESERVOIR)	8.38
AREA OF WATER RESERVOIR LOCATED ON (LUC2e2)	6.61
AREA OF WATER RESERVOIR LOCATED ON (LUC4e9)	1.77
TOTAL AREA OF GOLF COURSE	44.91
AREA OF GOLF COURSE LOCATED ON PRIME SOIL (LUC2e2)	15.33
AREA OF GOLF COURSE LOCATED ON (LUC4e9)	22.12
AREA OF GOLF COURSE LOCATED ON OTHER SOILS	7.46
TOTAL AREA OF BUILDING STRUCTURE	1.54
AREA OF BUILDING STRUCTURE LOCATED ON PRIME SOIL (LUC2e2)	0.44

Figure 77: Property Map Showing Existing Soil Classification, Project Footprint and Summary of Soil Affected Areas (hectares)

Key conclusions in respect of the Project's impact on soils are:

- The Property does not contain any 'Elite Soils' as defined by the AUP.
- The Property does include some soils considered to be 'Prime Soils' as defined in the AUP (refer green coloured areas in Figure 77);
- Of the Prime Soils identified on-Site, although they conform with that classification, field investigations revealed that their rooting depth potential and drainage performance both sit towards the lower end of the expected range for Prime Soils;
- Prime Soils comprise a relatively small proportion of the Property (30.2%) and of the Site (24%);
- Prime Soils comprise a very small proportion (4.4%) of land occupied by proposed permanent built structures;
- As previously mentioned, any adverse effects on soil health from the golf course construction will be minor and, in most cases, temporary in nature;
- No soils will be removed from the Site as part of the construction process. Any surplus soil from the golf course construction process will be retained and used on Site;
- It is likely the construction of the golf course will increase (by an estimated 16 ha) the total area of soil on the Site that can be classified as 'Prime Soil' through improved land contours;
- The majority (85.6%) of the Property's Prime Soils will continue to be available for rural production activities;
- Much of the golf course Site will experience improved soil quality and health due to improved drainage and improved soil structure achieved as a consequence of golf course construction and ongoing turf maintenance activities;
- Other than in locations where permanent built structures are proposed (including the water reservoir), the Project in no way limits the ability of the Site to be used for other agricultural or horticultural uses dependent on the quality and productivity of the soil, in the future; and
- Further to that, as a consequence of improved land contours, better drainage, better access plus the availability of water for irrigation - all occurring as integral parts of the golf course development, the construction of the golf course would actually broaden the range of agricultural or horticultural activities that could be carried out successfully on the Site in future.



5.5.4 Land Stability

The potential land instability risks associated with the lodge and the clubhouse have been assessed in the “Geotechnical Investigation Report for Buildings” (Appendix 4).

The potential land stability risks associated with water storage reservoir are presented in the “Geotechnical Investigation Report for the Proposed Reservoir” (Appendix 4).

Key conclusions from these respective assessments are presented below.

5.5.4.1 Potential Land Instability at the Lodge and Clubhouse Building Sites

The slope stability analyses undertaken found that the sections analysed do not meet minimum factors of safety for global slope stability. In response, a building line restriction has been placed at the ‘safe setback’ position (i.e., beyond the point at which slip circles below the minimum factors of safety intercept ground level). It is concluded that for all buildings encroaching over the building line restriction and into the specific design zone, engineering remediation measures will be required to meet minimum acceptable factors of safety against slope instability. For buildings and earthworks not extending beyond the building line restriction (i.e., within the non-specific design zone), no engineering measures are required to maintain slope stability.

The current layout plans for the lodge and the clubhouse show that parts of these buildings extend beyond the ‘safe setback’ positions.

Due to the nature of the slopes (i.e., heavily vegetated in native bush), palisade pile walls were modelled by Lander Geotechnical as a method of engineering mitigation. Other options such as soil nails may also be viable subject to constraints posed by existing vegetation on the slopes. The engineering solution will be confirmed at the detailed design phase and / or building consent stage.

In terms of foundations for buildings, a geotechnical ultimate bearing capacity of 300 kPa should generally be available for all shallow strip and pad foundations constructed on certified filling and on the natural ground. However, as mentioned above, where buildings extend beyond the building line restriction and into specific design zones, engineering measures will be required in order to maintain stability. This should not affect bearing capacity for shallow foundations that can be located behind palisade piles walls.

The Property sits on slightly expansive soils which do have a tendency to shrink and swell, particularly with seasonal fluctuations of near surface water contents. The Geotechnical Investigation Report for Buildings (Appendix 4) notes that foundations on such soils will therefore require specific design to establish appropriate embedment depths and/or concrete reinforcement configurations.

Additionally, if on-grade floor slab construction takes place during a long dry summer, exposed building platform soils may dry out and become highly desiccated. Over time the

rehydration of the soils below the floor slab can cause swelling and floor slab uplift. Floor slab uplift can cause distress on brittle building elements where cracks are more apparent.

The Geotechnical Investigation Report for Buildings (Appendix 4) does not anticipate that any significant problems would arise in relation to road and pavement construction. However, due to a significant proportion of roading being placed in either cut or filled ground, it is recommended that a programme of penetration resistance testing is carried out to confirm ground conditions.

Overall, engineering design solutions are available to feasibly address any land instability matters associated with the built environment proposed as part of the Project. These will follow at detailed design or building consent stage.

5.5.4.2 Potential Water Storage Reservoir Instability

With regard to the location of the water storage reservoir, assessments of liquefaction potential and slope stability were undertaken. Key findings from the study are outlined below:

- The assessments for liquefaction potential confirmed that while potentially liquefiable materials were identified, the ages of the depositions, soil compositions, and seismic dilatometer data indicate that the soil is not susceptible to liquefaction. On this basis, liquefaction is not considered to present a significant risk to the reservoir;
- The assessments for slope stability have indicated that while not all of the minimum factor of safety targets are met, deformation is predicted to be small (less than 5 mm), which is considered acceptably low. As such, slope instability on the reservoir margins is expected to be minor in nature and unlikely to represent a hazard for the dam, pond slopes and stockpiles;
- The maintenance of grass and vegetative cover in the slopes above reservoir level is recommended to further minimise the potential for shallow slumping or erosion; and
- Perched groundwater in the upper soil horizons, (i.e., above the hardpan where present) may lead to localised surficial saturation. Although not considered to pose an obvious risk to instability at a recommended batter of 3H:1V, the incorporation of regularly spaced counterfort drains extending 5m back from the face to a depth of 3m is considered prudent and will minimise the risk of this occurring and consequential effects on the lining system.

Overall, by adopting the recommendations from the geotechnical assessment reports summarised above, any land stability or liquefaction risks will be appropriately addressed.

It is noted that these aspects will be rigorously assessed through the developed and final design stages, and as part of any related building consent process.

5.5.5 Landscape, Visual Amenity and Natural Character Effects

An assessment of the potential effects of the Project on the landscape, visual amenity, and natural character values of the surrounding environment is provided in the Landscape Report (Appendix 13).

An overview of this assessment is provided in the sections below. For the purpose of maintaining consistency throughout this AEE, the Landscape Report effects descriptions (in accordance with the New Zealand Institute of Landscape Architects Te Tangi a te Manu – Aotearoa New Zealand Landscape Assessment Guidelines, 5 May 2021) have been converted to align with the effects terminology used elsewhere in this AEE, as summarised in Table 24.

Table 24: Landscape Related Effects Description Conversion Table

<u>Less than Minor</u>		<u>Minor</u>	<u>More than Minor</u>			
Very Low	Low	Moderate – Low	Moderate	Moderate-High	High	Very High
					Significant	

5.5.5.1 Landscape Effects

The Landscape Report identifies the effects on landscape attributes and values for both the Golf Site⁴² and Reservoir Site⁴³.

A summary of these assessments is provided in the sub-sections below.

Golf Site

In relation to Golf Site landscape effects, the Landscape Report makes the following observations;

- Landform effects will result from golf course earthworks and shaping;
- The golf course has been designed to work with the existing undulating land contours.
- No earthworks occur within identified wetlands, and only 184 m of the approximately 13,000 m of streams within the Property will be physically affected. Notwithstanding

⁴² Golf Site, in respect of the Landscape Report, comprises areas of the Site north of Muriwai Road including the Golf Course, Lodge, Clubhouse and Sports Academy.

⁴³ Reservoir Site, in respect of the Landscape Report, comprises areas of the Site south of Muriwai Road including the water storage reservoir.

the above potential effects, as indicated in the Ecology Report, will be fully mitigated and/or offset;

- A very small portion of the Lake Ōkaihou ONF (“**ONF 72**”) totalling 43 m² will be impacted by earthworks near the back-tee location for Hole 3 (Figure 78). Given the very small area affected, associated adverse effects on the key characteristics and values of ONF 72 are minimal;



Figure 78: Extent of ONF boundary in green hatch. Area Affected by Earthworks Denoted by Orange Area)

- The single span design of bridges means earthworks are not required in any stream beds and are limited to riparian margins;
- Supporting infrastructure such as internal roads will require a limited amount of earthworks and will avoid the need for retaining walls, thereby, enabling these areas to be appropriately grassed and landscaped.
- The Clubhouse and Lodge buildings will be located on gentle north facing slopes in the north-western portion of the Property. This is a location that is visually separated from Muriwai Road. Higher quality trees in this area will be retained and incorporated into the landscaping. The Sports Academy and GPMC buildings will be Sited on a broad and more elevated landform near the centre of the Property with partial views from Muriwai Road;

- The built form of the main lodge building, wellness centre and accommodation units will ensure these buildings will broadly follow the sloping characteristics of the landform and remain set back from Lake Ōkaihau and the vegetated gully to the east;
- Any vegetation removal or alteration within SEAs is limited to discreet areas associated with the golf course and related bridge crossings, crown lifting to achieve sight lines, Muriwai Road widening at the western entrance and other road access works at the eastern entrance. The removal of two Kauri located outside of the SEAs and the removal of dead, standing Kauri trees is also proposed;
- While the removal of vegetation is proposed, it is noted that a key aspect to the golf experience will be the indigenous areas of vegetation and that restorative and enhancement planting is proposed. This will provide both beneficial ecological outcomes and a stronger vegetative framework within the Property;
- Separate indigenous planting will be undertaken on the Property to support and visually ground the Site's facilities. Planting around the Clubhouse and Lodge, whilst mainly for amenity purposes, will incorporate an indigenous planting palette to ensure the natural values of the existing vegetative framework remain clearly expressed; and
- Given the above mitigation measures, it is concluded that the adverse effects on the vegetation within the Property during and immediately following the construction period will initially be minor.

The Landscape Report notes that, whilst the Project will involve a level of modification to the existing landform characteristics of the Golf Site, the underlying topography remains clearly expressed and, overall, concludes that the effects on the landform attributes and values of the Golf Site will be less than minor. Additionally, any vegetation removal effects will initially be minor immediately following construction, but will be appropriately mitigated through weed management, restorative and enhancement planting which ultimately improves the Property's vegetative values.

Reservoir Site

Regarding landscape effects at the Reservoir Site, the Landscape Report makes the following observations;

- The vegetation values and attributes of a pastoral area are considered minor. Further, the Ecological Report notes that the ecological effects associated with the water storage reservoir are minor and that there will be an overall positive ecological outcome due to the 3.7 ha waterbody this reservoir creates.
- Additionally, planting has been recommended to integrate the water storage reservoir bunding, providing an element of indigenous vegetation currently absent from this portion of the Reservoir Site.

- SEA (SEA_T_5482) within the southern portion of the Reservoir Site will not be affected by the works.

Overall, it is concluded that the effects on the landform attributes and values of the Reservoir Site will be less than minor.

Landscape Character Effects

Golf Site

The assessment of landscape character effects of the proposed Golf Site is summarised as follows:

- While the Project will change the land use of portions of the Golf Site, golf courses are not inappropriate within rural landscapes because they inherently have large areas of open space. Furthermore, ancillary buildings and supporting facilities will contribute to the complex fabric of activities and built forms associated with rural and production landscapes;
- Additionally, many of New Zealand's lodges and other accommodation and hospitality facilities are located within similar rural landscapes - taking advantage of the natural scenery and open space qualities. These rural activities often result in a wide range of enhanced landscape outcomes, including a more appropriate landscape character pattern;
- The Project will retain the Property's natural features and the farm environment. (Refer future grazing plan Figure 72 in Section 3.17). Importantly, the Project retains most of the Property as unfettered pastoral land. Also, an approximately 100m wide buffer of pastoral land will be retained along the southern boundary of the Golf Site, adjacent to Muriwai Road. As a result, the wider Property will continue to operate as a working farm, ensuring that rural activities will continue to characterise the Property;
- The Lodge, accommodation and Clubhouse components will be integrated within the Property and set back, deep within its internal areas. These components will be further grounded into the landscape through subtle landform manipulation and a planting palette led by indigenous species representative of the existing local context;
- The Sports Academy and GPMC buildings, whilst visible from public (and private) locations, will have a typically 'honest' appearance consisting of simple rural style building forms and materials. In addition, their building forms will sit within a large-scale landscape and will remain broadly representative of the familiar architectural appearance of rural buildings such as barns and woolsheds that characterise the area. These more visible buildings will be finished in colours sympathetic to the rural environment and carefully considered landscape design and planting is proposed around their curtilage areas to visually ground the building forms within the landscape.

- Furthermore, internal access roads will be finished in a non-urban character (i.e., no vertical kerbs and channels) with appropriate widths associated with slow speed environments and finished in recessive aggregate, concrete, or asphalt surfaces; and
- The Project has also been designed so that several of the existing farm buildings will be retained, including the woolshed and farm utility buildings near Muriwai Road. This also helps maintain the existing rural characteristics of the Property.

Overall, the Project retains the open space nature of the Property's landform and building design, treatments and planting have been carefully considered so that the Project is well integrated within the existing rural environment and any adverse effects on the landscape character values of the Golf Site will be less than minor.

Reservoir Site

- The Reservoir Site is defined by pastoral landscape and the existing sandstone quarry. Both will remain in operation;
- Changes within the Reservoir Site are limited to the construction of a water storage reservoir - observed as being a compatible element within rural environments since they are often used for farm irrigation purposes;
- The reservoir's perimeter bunding will not significantly detract from the qualities of the Reservoir Site and the fill area of the reservoir will be carefully integrated and recontoured to provide a broad naturalised appearance as far as practicable.

Overall, the Project design ensures the Reservoir Site will continue to express inherently rural characteristics, and as a result, any landscape character effects will be less than minor.

Natural Character Effects

Effects on Biophysical – Abiotic Attributes

- In general, the high value abiotic attributes of the wetlands, lakes and rivers (streams) and their margins will not be adversely affected.
- Whilst some stream impacts are inevitable, mitigation measures will be undertaken to adequately address them.
- The gullies which support many of the streams through the Property will remain unchanged apart from minor earthworks required during golf course and associated bridge construction.
- A small change to the existing levels within ONF 72 will be required, however, this area is considered particularly discreet. This area is also beyond the water line of the lake and the more expressive lake embankments featuring around the northern, eastern, and southern portions.

Overall, although there are some areas of disturbance these are limited and ultimately do not impact the underlying qualities of the ONF as indicated in the AUP and any adverse effects to the abiotic attributes are less than minor.

Effects on Biophysical – Biotic Attributes

- The areas considered to have the highest biotic values are the Rauataua Stream and Ōkiritoto Stream (including wetlands) will not be affected by the Project;
- Impacts on Lake Ōkaihou are restricted to an area of Eucalyptus species and tree lupins (a pest plant), and in any event, substantial riparian and restoration planting is proposed in this area (Figure 60 in Section 3.5);
- Vegetation removal within SEAs on the Property is also limited. Nevertheless, the Project also includes substantial restoration and enhancement planting at wetland, streams and SEA boundary locations.

Overall, whilst there would initially be some minor adverse effects in relation to vegetation removal, the restoration and enhancement opportunities focused around the wetlands, lake and rivers (streams) and their margins will ensure beneficial effects on the biotic attributes of the Property.

Effects on Experiential Attributes

- Although the areas holding the highest experiential attributes will not be affected by the Project, the minor area of earthworks at Lake Ōkaihou ONF may result in some less than minor and temporary adverse experiential effects.
- The highest areas of experiential values will ultimately remain as they are at present or will be enhanced through restorative planting. This will provide a higher quality environment with strengthened natural attributes and experiences.
- Further, the more ‘manicured’ approach of the golf course environment will not lessen the levels of experiential attributes since many of the Property’s areas presently represent a degraded farmland as a result of human modification and management. As such, the experience of the area’s natural character will continue to sit alongside an established rural context with new areas of restoration contributing to the overall experiential natural character qualities of the Property.

Overall, the experiential attributes will broadly remain as they are as present while beneficial effects are anticipated in time as vegetation becomes established and as positive effects are realised from the ongoing management and maintenance of the wetlands, lake, stream and their margins.

5.5.5.2 Visual Amenity Effects

Visual amenity effects are assessed at the following four key viewing points / public places identified in Figure 79:

- Muriwai Road (Viewpoints 1-4 – refer Figures 80 - 83);
- Hamilton Road (Viewpoints 5 and 6 – refer Figures 84 - 85);
- Fletcher Road; and
- Cable Road (Viewpoint 7 - refer Figure 86).

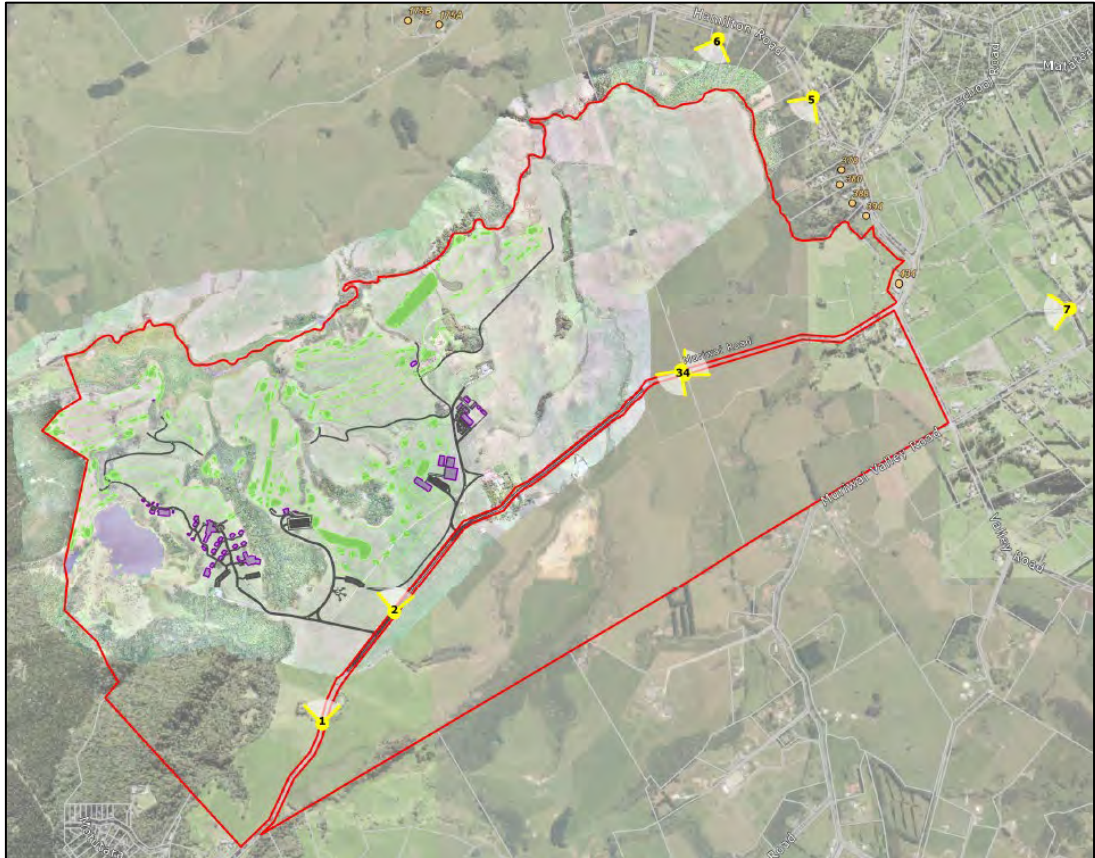


Figure 79: Viewpoint Location Plan



Existing View

Figure 80: Muriwai Road - Viewpoint 1



Existing View

Figure 81: Muriwai Road - Viewpoint 2



Figure 82: Muriwai Road - Viewpoint 3

Existing View



Figure 83: Muriwai Road - Viewpoint 4

Existing View



Figure 84: Hamilton Road - Viewpoint 5

Existing View



Figure 85: Hamilton Road - Viewpoint 6

Existing View



Existing View

Figure 86: Cable Road - Viewpoint 7

Muriwai Road

Refer Figures 80, 81, 82 and 83 (Viewpoints 1 to 4)

- Viewing audiences along Muriwai Road primarily include road users travelling in an eastern or western direction along the southern boundary of the Golf Site. Residential properties are restricted to the eastern and western ends of the road, however, residential viewing audiences are limited to those on the eastern end (378, 380, 388, 394 and 434 Muriwai Road). None of the residential properties to the west will see the Property due to intervening topography and vegetation;
- The identified residential properties share a similar visual extent, although vegetation within these and adjacent properties does however on occasion restrict some portion of their panoramic views;
- Views from travelling vehicles comprise an open pastoral landscape with distant enclosing ridges;
- The elevated eastern and western ends of the road allow for wider angle views of the surrounding pastoral land including the Golf Site, whereas the lower elevation views provide a more limited view due to the similar adjoining landform elevation and frequent roadside vegetation.
- Elevated views from the western portion of Muriwai Road (Figures 80 and 81 – Viewpoints 1 and 2) are restricted to those travelling in an easterly direction.
- The proposed golf course, Lodge or Clubhouse will not be visible for these viewing audiences as these aspects occur on lower elevation positions or are screened behind existing vegetation. Although, glimpse views of the Sports Academy and GPMC will be attainable, these will be oblique and fleeting;
- Elevated views from the eastern portion of Muriwai Road (the above-mentioned residential dwellings and adjacent road users) will change because of the proposed layout of the golf course in the northern, lower elevation areas of the Golf Site. The Clubhouse and Lodge may be partially visible, however, these views will be distant (more than 2 km away). Additionally, the buildings will be low profile and integrated into the sloping terrain with indigenous vegetation which will soften any visible elevations. The ancillary buildings will also be visible, however, the form and scale of these buildings will be in keeping with the established character of built development within rural environments. Planting will also be established around the curtilage of these buildings to further lessen their prominence;
- Views from lower elevation positions along Muriwai Road tend to be restricted by roadside vegetation, although breaks in this vegetation may allow for brief glimpses of various components on the Property. Despite this, such change will not be particularly prominent and will only be experienced for a brief moment; and

- The proposed water reservoir may be visible for residents, however, it is considered that the change will be limited in the wider view which is available. The changes would comprise a recontoured portion of the Property's landform which will be regrassed and continue to be grazed. The northern edge of the reservoir will also be planted with a variable width buffer out to the road boundary which will soften the engineered form of the required batters.

Overall, there will be less than minor adverse effects on the viewing audiences (both private and public) associated with Muriwai Road.

Hamilton Road

Refer Figures 84 and 85 (Viewpoints 5 and 6)

- There are 27 residential properties distributed along Hamilton Road. Most residential properties along the western side of the road will obtain views towards the Property (western facing aspect and higher elevation);
- The Project will result in a slight change for residential viewing audiences and road users on Hamilton Road, but overall, this change will not be particularly discernible. The retention of the eastern portion of the Golf Site as a working farm will ensure that the immediate foreground of the view from these locations will remain unchanged. This is also the case for large areas of pastoral land in the southern portion of the Property, since the proposed layout of the golf course will occur in the lower (northern) elevations of the Property;
- The small number of road users, in combination with the highly vegetated road verge along the western side results in limited opportunities for travelling vehicles to experience open views towards the Property. Nevertheless, breaks in vegetation will result in some views to the Property;
- The foreground of the view for west facing viewing audiences features vegetation within respective and neighbouring properties on the moderately steep west facing slope. Beyond the vegetation (fore and mid-ground of the view) are the open pastoral lands of the Golf Site. A mixture of exotic and indigenous tree stands is visible, however, they are not prominent, with the key attributes of the midground more associated with the agricultural land uses of the Property;
- The proposed Clubhouse and Lodge are the most substantive built development aspects but are located over 2 km away. Furthermore, the location of these facilities sits between the system of mature vegetated gullies that provide screening;
- Other built features likely to be visible include the Sports Academy, covered tennis facility and GPMC. These buildings are located and appropriately spaced to ensure the cumulative bulk of the buildings will be similar to a working rural environment;
- These buildings have also been designed with rural characteristics in mind; and

- Although the proposed reservoir and associated bund / fill area will be visible from most residential properties, mitigation measures, including planted bunding will help integrate these elements into the existing pastoral / rural landscape. Despite these mitigation measures, the elevation of these viewing audiences will mean that views of the water in the reservoir will be possible. For those properties, this feature will be relatively small (in comparison to the wider view) and not an incompatible addition to the outlook or out of context in a rural landscape.

Overall, the adverse effects of the Project for viewing audiences along Hamilton Road will be less than minor.

Fletcher Road

- Fletcher Road occupies a lower elevation than Hamilton Road and as such does not for the most part allow views towards the Project. However, as the road gradually climbs in elevation to the west and in the area beyond the end of the road, there are opportunities to obtain views towards the Property. These locations are from private properties (located approx. 400 m north-east from the Property) and not from along the road corridor itself;
- The abovementioned Sites have an outlook that would be of an open nature as a result of their elevation.
- The foreground views are of pastoral land to the north of the Golf Site in addition to neighbouring residential built form which define this cluster of lifestyle blocks in this portion of Fletcher Road. Some vegetation within small gullies and tree stands within the Golf Site may be partially visible through the vegetation surrounding these lots as the broadly sloping landform falls away from Te Tuara ō Titahi ridge towards the Ōkiritoto wetland and stream;
- The midground views contain the north facing undulating terrain of the Golf Site which features pasture covered fields interspersed with occasional tree stands and vegetated gullies. The vegetated slopes which form the backdrop of the southern portion of Muriwai beach are also visible in addition to coastal waters. Portions of Muriwai Road may be observed in addition to the existing sandstone quarry forming part of the Reservoir Site. Beyond, the rural land uses continue to characterise the view and there may be the opportunity to view the distant forested hillsides of the Waitakere Ranges;
- The Project will principally comprise the inclusion of the golf course activities within the outlook. Any views will occur in the mid-ground and include the legible pattern of the fairways and greens along the northern portion of the Golf Site. Notwithstanding, extensive views of this activity will be difficult to discern from these locations due to intervening landform and vegetation;

- The proposed Clubhouse and Lodge will be more visible from these locations than from properties along Hamilton Road (due to the more westerly location and elevation), however, these buildings will be set into the sloping landform and their low profile will include planting around the periphery of the buildings which will visually link with the vegetated gully systems in the western portion of the Golf Site;
- Ancillary buildings including the Sports Academy, tennis court and golf and maintenance buildings will also be visible. However, these buildings will not be out of context due to their traditional forms and finishes and will be readily absorbed in the wider rural environment; and
- Any changes to the Reservoir Site within the Property will not be clearly discernible due to the distance between the viewing audiences and water reservoir, regressed contour fill and vegetated northern interface.

Overall, adverse effects on viewing audiences along Fletcher Road would be minor.

Cable Road

Refer Figure 86 (Viewpoint 7)

- While Cable Road climbs to an approximate elevation of 125 m, there are a limited number of residential properties along it;
- Widespread roadside vegetation also restricts views towards the west in the direction of the Property.
- There are views to the Property at the approximate mid-point along the road in proximity to a cluster of residential properties. These views mainly comprise a rural environment of fields, shelterbelts, tree stands and farm buildings within the foreground, midground and background of views;
- The southern portions of the Golf Site are visible from this location and feature the open pastoral field of the Property, tree stands and farm buildings. The changes to this view will be the visibility of the GPMC within the Golf Site and the proposed bunding and fill area associated with the water storage reservoir;
- The GPMC is located on a relative high point within the view. As mentioned already, these structures, and their layout and landscaping will ensure they relate to the rural environment. In this respect, buildings will incorporate a simple building form and be treated with appropriate materials and colours, and landscaping will be undertaken within and around the development to break up building mass; and
- The bunding and fill area associated with the water storage reservoir will build on the established topographical characteristics in this locality and will be successfully integrated into the wider pastoral landscape. The side profile of the reservoir bunding will be discernible and will sit at a relative height to the existing terrain when viewed from this position. Overall, this element will form a small part of the wider view for

those viewing audiences and the grassed treatment of the bunding will ensure that the feature will reflect the wider pastoral context.

Overall, adverse effects on viewing audiences along Cable Road would be less than minor.

5.5.5.3 Key Landscape, Visual and Amenity Effects Conclusions

The Landscape Report makes the following key conclusions:

- The Project will result in no more than minor adverse natural character, landscape and visual amenity effects.
- Adverse natural character and landscape effects will be generated through grading of the Property and removal of vegetation, however, it is considered the Project's principled design approach, and the intention to celebrate the natural features and qualities of the Property, will appropriately manage these adverse effects, particularly those resulting from vegetation removal.
- Significant ecological restoration is proposed within the Golf Site which will focus on enriching the natural qualities and values that the Property currently holds. Indigenous planting is also proposed as part of the landscape treatments for the Project facilities which will also add to and assist in creating a more connected vegetation framework within the western portion of the Golf Site. These measures will result in positive natural character and landscape effects, the level of which will increase to a more than minor level over-time.
- The Property's location and areas of proposed development assist in ensuring that large areas of the Project will not be visible (or particularly discernible) to the general public. Nevertheless, measures have been undertaken to obscure the Lodge and Clubhouse facilities from viewpoints along Muriwai Road and a considered architectural approach has been taken by employing finishes and materials (including locally obtained earth rammed blocks) to relate the buildings to the Property and its inherent character.
- Indigenous plant palettes are also proposed as part of the landscape treatments for the Project facilities (provided as Landscape Concept and Planting Guidelines in Appendix 3 of the Landscape Report). Adopting these guidelines will also add to and assist in creating a more connected vegetation framework within the western portion of the Golf Site.
- The Sports Academy and GPMC, while in visible locations, have been designed to align to the 'honest' working rural vernacular that can be expected on a rural Property such as this.
- The level of adverse visual effects on surrounding viewing audiences will be no more than minor;

- The Project will result in positive effects on biotic and experiential attributes of the Property; and
- Any rural and landscape character effects associated with the change from a solely farming activity to a mixed dry stock and recreational use will, once the Project is established, result in an overall neutral effect.

5.5.6 Effects on Existing Farm Operations

As set out in the Farming Operations Report (Appendix 9), the objectives of the future farming operation are to:

- Cease dairy farming if the Project proceeds as planned. In this respect, it is noted that, although the dairy unit is currently viable, the proposed water storage reservoir and associated bunding and infrastructure displaces approximately 6 ha of the farm's available dairy area that would need to be found elsewhere on the Property. In addition to this, given the existing dairy infrastructure is tired and needs investment to remain compliant in future years, the total capital required to continue dairy farming on the Property is a challenging proposition;
- Retain a commercially viable dry stock business that can provide a positive margin. This will need to reorientate its operations around a new woolshed and cattle handling facilities (refer Figure 72 in Section 3.17); and
- Develop the farming business so that it adds an "authentic" aspect to the experience of visitors and guests to the Site, and thereby, enhance their engagement with rural New Zealand.
- The land currently used for dairy is approximately 35% more productive than most of the land being proposed to be used by the development (e.g. as compared to land around Lake Ōkaihau). Losing this land to the Project is not considered detrimental to overall productivity, and with the conversion of the productive dairy land to dry stock grazing, no production loss is expected, as compared to the current situation; and
- Furthermore, the future changes may result in an improved dry stock farm from an operational and stock handling perspective.

5.5.7 Operational Traffic and Rooding Effects

As mentioned previously, the ITA provides an assessment of the potential traffic and roading related effects of the Project. These are summarised below.

5.5.7.1 Traffic Flow and Trip Generation

General

- The ITA notes the Property gains direct access to Muriwai Road, which is classified as an arterial road connecting to State Highway 16 at a recently constructed roundabout. This network is anticipated to help facilitate the safe and efficient movement of people and goods between urban and rural centres. In this regard, vehicles will be able to directly access a road which is specifically designed to accommodate all vehicles / goods; and
- The overall trip generation for the Property (visitors and staff) is anticipated to be 92 traffic movements per hour. This assessment is based the Lodge having 29 accommodation units, however the Lodge is more likely to have 26 units. To this extent, the trip generation assessment is considered conservative. While this level of trip generation is below the 100 vehicles per hour threshold detailed in the AUP, an assessment of the effects of the Project on Muriwai Road and the Muriwai Road / State Highway 16 intersection has still been undertaken and is detailed below.

Muriwai Road

- The Austroroads Guide to Traffic Management Part 3 defines the ideal capacity for a single traffic lane as being 1,800 vehicles per hour. The additional traffic resulting from the Project will take peak volumes on Muriwai Road from 620 vehicles per hour to 710 vehicles per hour during holiday periods, which is well below this upper bound. As a result, the additional traffic volumes will have a minimal effect on the operation of Muriwai Road. Additionally, the Project will provide the following advantages:
 - The Property has direct access to the arterial road network and does not require any vehicles to travel along roads that have not been designed to regularly accommodate vehicles;
 - The Project will generally generate peak movements outside commuter peaks; and
 - Both access points are suitable in terms of both sight distance and design.
- In terms of localised effects beyond the Property's driveways, the increase in traffic volumes is expected to be negligible. As such, the minimal increase in traffic volumes will not be apparent at any driveway / intersection in close proximity to the Property.

Muriwai Road / State Highway 16 Intersection

- Muriwai Road / State Highway 16 intersection has recently been upgraded to a large roundabout, accommodating state highway traffic. The intersection has been observed to operate well, with safe and efficient movement provided for all approaches in all peak periods. The additional 92 vehicles per hour as a result of the Project is not anticipated to detrimentally affect the good operation of this existing traffic network. As such, the Project's effects on the operation of this intersection are considered to be negligible.

5.5.7.2 Access

As described earlier in Section 3 of this AEE, an existing vehicle crossing at the western end of the site will be upgraded to provide shared vehicle access to the Lodge, Golf Course, Clubhouse, and a new (relocated) crossing will be constructed at the eastern end of the site to provide shared vehicle access to the Sports Academy, GPMC.

Sports Academy and GPMC Access

- This relocated access has been designed according to the NZTA PPM Diagram D. Although Muriwai Road is not a State Highway, this is considered the most appropriate design standard for this service access.

Lodge and Clubhouse Access

- For this access, Austroads Part 4 recommends a channelised right turn and a full right turn treatment to serve the development in the AM and PM peak hours, respectively. Accordingly, the Applicant is proposing this access be designed to accommodate a full right turn bay.

The ITA confirms the proposed access will meet relevant safety and efficiency standards.

5.5.7.3 Internal Road Network

- The internal road network proposed will facilitate the efficient, safe and scenic movement of guests, staff and supplies with the Site;
- The proposed internal circulation route is not intended to be used by standard motor vehicles, but rather golf carts and service vehicles. The proposed 5.5m carriageway width of the proposed primary loop network is considered wide enough for two of these vehicles to pass in opposing directions and afford some clearance to pedestrians who may be on the path;
- A secondary link road runs approximately parallel to Muriwai Road connecting the Sports Academy and GPMC with the Clubhouse and Lodge. At night, due to the position of the link road in relation to Muriwai Road, there is the possibility that the headlights of vehicles on the internal link road may appear to drivers eastbound on Muriwai Road to be approaching from the wrong side of the road. Due to the low height and illumination of the headlights on the shuttle vehicles to be used, the ITA concludes that this is not a significant concern, however, to mitigate any potential negative effects the ITA recommends low planting is installed between the circulation route and Muriwai Road to provide a cloaking effect. The final location and treatments for this secondary link road will be confirmed as part of the final design phase. This final design process will address this potential road safety risk.

5.5.7.4 Servicing

- The Project complies with AUP loading requirements; and
- The service accessway proposed will have a carriageway measuring 6.0m wide, suitable for the movements of heavy vehicles and service vehicles.

5.5.7.5 Parking

- The Project easily meets the minimum AUP parking space requirements; and
- It is recommended that the two parking areas (Wellness Centre and GPMC Visitor Car Parks) that do not comply with parking dimensional requirements should be modified to satisfy Unitary Plan requirements. The Applicant proposes to address this as part of the final design phase for the Project.

5.5.7.6 Summary

Overall, the ITA concludes that, subject to the recommendation above relating to the visitor parking dimensional requirements, there are no traffic engineering or transportation planning reasons that would preclude the Project, and it will have minimal adverse effects on the local roading environment.

5.5.8 Noise Effects

As mentioned previously, the Noise Report provides an assessment of the potential noise related effects of the Project. The operational noise effects assessment is summarised in the sections below (with construction noise discussed above).

Operational Noise

- Operational noise at the closest receivers will need to comply with a day time noise limit of 55 dB L_{Aeq} and 45 dB L_{Aeq} at night time;
- Whilst the majority of operational and maintenance activities will occur between 7 am and 3 pm, they could potentially start as early as 5.30 am in the summer time. The night time noise limits would apply from 5.30 am to 7.00 am;
- The main source of noise from the operation of the Project will be that of normal golf maintenance equipment and golfers accessing the Property;
- With regard to the day-to-day golf maintenance activities, it is not anticipated the equipment used will result in the production of more noise than what is already being experienced from the existing farming activities in the rural environment. In addition, there have been, and will continue to be, significant advances in technology with regard to golf course maintenance equipment (e.g. electric maintenance vehicles etc). All staff will be trained and inducted in their use of maintenance equipment using Safe

Operating Procedures (“**SOP**”) to achieve the highest quality of maintenance standards;

- Some typical suburban golf courses throughout Auckland involve golf maintenance equipment operating as close as 20 m from residential dwellings and they are not aware of any noise problems arising as a result; and
- Any noise resulting from vehicles (i.e., cars and delivery trucks) accessing the Property is considered to be insignificant considering the large distances to the closest dwellings and the existing level of vehicle noise on Muriwai Road.

Overall, the Noise Report concludes that the operational noise associated with the Project will be able to comply with both the day time and night time noise limits of 55 / 45 dB L_{Aeq} , as noise from these sources will be at a very low level and not generally audible at the closest receivers.

Helicopter Noise

- A collection of helipads are included in the Project design and are located close to the main entrance on Muriwai Road. This helicopter facility will enable clients and members to fly into the golf course from Auckland Airport or from other golf resorts. Helicopters may be parked at the Property for several hours on busier days, hence the provision for several helipads on the Property;
- With respect to predicted helicopter noise contours, noise modelling was carried out using the internationally recognised software package called SoundPlan. A significant number of measurements of various helicopters used in New Zealand have been used to calibrate the SoundPlan model for specific helicopter types; and
- Six helicopter movements are anticipated per day (3 flights), and to be conservative, initial modelling used a conservative 10 movements per day to allow for some growth. The results are shown in Figure 87 below.

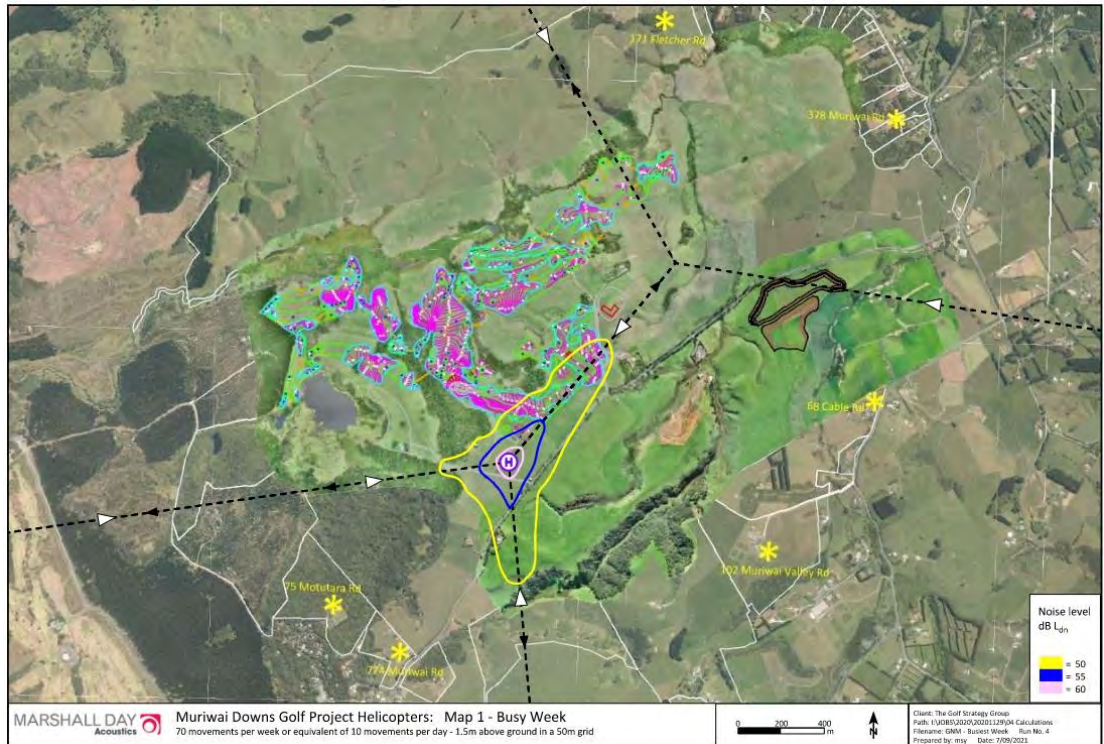


Figure 87: Helicopter Noise Contours – 10 movements per day

- The predicted noise levels from the conservative level of activity of 10 movements per day indicates that noise levels are well below the AUP noise limit of 50 dB LAeq.
- Additionally, the helicopter landing area could be relocated to different locations on the Property and readily comply with the helicopter noise limits (should that be necessary); and
- Appropriate helicopter management procedures and protocols will form part of the SOMP.

Overall, due to the low level of noise exposure and the short duration and intermittent nature of this noise source, the Noise Report concludes that the effects of noise from helicopters is considered reasonable.

5.5.9 Management Plans

As mentioned throughout this section of the AEE, a number management plans are proposed. Requirements regarding the preparation, certification and implementation of these management plans will form part of the suite of proposed consent conditions to be proffered following the lodgement of this application. A summary of all proposed management plans is set out below:

5.5.9.1 Construction Phase and Environmental Management Plan (CEMP)

The key management plan to be implemented during the construction phase is the CEMP. The CEMP will be in the general form as the Draft CEMP provided in Appendix 18 and will incorporate the following supporting management plans:

- ESCPs prepared in accordance with Auckland Council GD005;
- A Construction Traffic Management Plan (**CTMP**);
- A Dust Management Plan (**DMP**);
- A Contaminated Soil Management Plan (**CSMP**);
- A Tree Management Plan (**TMP**);
- Lizard Management Plan (**LMP**);
- Bat Management Protocols;
- Native Fish Salvage and Relocation Protocols;
- An Archaeology Management Plan (**AMP**) and an authority from the HNZPT;
- Relevant accepted protocols and plans to manage the spread of Kauri Die-back disease; and
- Appropriate accidental discovery protocols (to be confirmed with Mana Whenua).

5.5.9.2 Ecological Management Plan

As recommended in the Ecology Report, the Site will undertake all Project related ecological restoration and enhancement activities in accordance with an Ecological Management Plan (**EMP**). The EMP will include the following planting management details:

- objectives for Project related restoration and enhancement;
- roles and responsibilities;
- maintenance;
- pest plant and animal control;
- monitoring; and
- reporting.

The EMP will be supported with the following ancillary management plans to remain in place for the operational phase of the development:

- A Tree Management Plan (as per the TMP included in the CEMP but focussed on operational tree maintenance and related arboriculture procedures and protocols); and



- Relevant accepted protocols and plans to manage the spread of Kauri Die-back disease.

5.5.9.3 Restoration Management Plan

In addition to the EMP, the Applicant will prepare and implement a Restoration Management Plan (**RMP**) to address the voluntary ecological work proposed by the Applicant. The RMP will include the following planting management details:

- objectives for the voluntary restoration and enhancement works;
- mechanisms for protection in perpetuity (where relevant);
- roles and responsibilities;
- maintenance;
- pest plant and animal control; and
- monitoring;

The RMP will be supported with a Wetland Restoration Plan (**WRP**) prepared in accordance with the NESFM and as provided in the Ecology Report.

5.5.9.4 Landscape Planting Plan

As recommended in the Landscape report, a Landscape Planting Plan (**LPP**) will be prepared. The LPP will incorporate final landscape planting plans for the Project, including planting around its key built structures and amenity planting. The LPP will be informed by the draft Landscape Concept and Planting Guidelines (refer Appendix 3 of the Landscape Report).

5.5.9.5 Mātauranga Māori Environmental Monitoring Plan

As a result of consultation with Mana Whenua, the Applicant and Te Kawerau ā Maki have agreed in principle to the preparation and implementation of a Mātauranga Māori Environmental Monitoring Plan (**MMEMP**). Details of the MMEMP objectives and procedures are to be developed in consultation with, and following the establishment of, the Kaitiaki Committee.

5.5.9.6 Site Operations Management and Maintenance Plan

To ensure the effects associated with the Site's ongoing operation are appropriately managed, a Site Operations Management Plan (**SOMP**) will be prepared and implemented. This will include the following key elements:

- General Site operations and maintenance procedures for the following Site components:
 - Golf Course and Clubhouse including;
 - Standard operating procedure for the retrieval of golf balls;



- Standard operating procedures for all golf course maintenance activities;
 - Standard operating procedures for helicopter management;
 - Standard operating procedures for managing irrigation and water;
- Lodge;
- Sports Academy; and
- GPMC;
- Public complaint procedures;
- A Stormwater Management Plan (**SWMP**);
- A Wastewater Treatment Management Plan (**WTMP**);
- An Irrigation and Water Management and Monitoring Plan (**IWMMP**);
- An Archaeology Management Plan (as per the **AMP** included in the CEMP but focussed on potential operational soil disturbance activities etc); and
- A Contaminated Soil Management Plan (as per the **CSMP** included in the CEMP but focussed on potential operational soil disturbance activities etc)

5.5.10 Operational Environmental Effects Assessment Summary

Overall, the environmental effects assessment above confirms that:

- Following the effects mitigation initiatives proposed by the Applicant, and in the case of the culverting of stream P3, the proposed off-setting measures, any adverse environmental effects associated with the Muriwai Golf Project will be no more than minor; and
- The Project will result in a raft of positive effects including:
 - A likely net cultural improvement compared to the current situation, as confirmed in the CIA (Appendix 21);
 - Various social and community benefits associated with golf and golf courses and numerous direct and indirect economic and social benefits as identified and analysed in the Economics Report (Appendix 17);
 - Improved surface water quality as discussed in the Water Effects Summary Report and Ecology Report (Appendix 11);
 - An improvement to the quality and productive capacity of some soils within the Site, as set out in the Soils Report (Appendix 8);
 - Improvement to the biotic and experiential attributes of the Property as described in the Landscape Report (Appendix 13); and

- Most notably, an expected significant net-benefit to indigenous fauna, forests, streams, and wetland values and functions across the Site as confirmed in the Ecology Report.

6. INTRODUCTION STATUTORY ASSESSMENT

6.1 INTRODUCTION

This section of the AEE sets out the framework under the RMA that applies to the resource consents being sought from Auckland Council.

6.2 RESOURCE CONSENT REQUIREMENTS AND ACTIVITY STATUS

The resource consents required, and their activity statuses, are described in Section 4 of this AEE. In summary, the resource consents for the activities associated with the Project are to be bundled as a **Non-Complying Activity**, to be considered firstly under section 104D of the RMA, and then section 104.

6.3 SECTION 104D ASSESSMENT

Section 104D of the RMA sets out restrictions on the ability of a consent authority to grant resource consents for non-complying activities. It states:

- (1) *Despite any decision made for the purpose of notification in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either –*
- (a) *The adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or*
 - (b) *The application is for an activity that will not be contrary to the objectives and policies of –*
 - (i) *The relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
 - (ii) *The relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*
 - (iii) *Both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*
- (2) *To avoid doubt, section 104(2) applies to the determination of an application for a non-complying activity.*

Pursuant to s104D(1), a resource consent can only be granted for a non-complying activity if the consent authority is satisfied that either of the following ‘gateway’ tests are met being:

- s 104D(1)(a): The adverse effects of the activity on the environment will be minor (or less); or
- s 104D(1)(b): The activity will not be contrary to the objectives and policies of the relevant plan.

The Project is considered to satisfy both of the ‘gateway’ tests as discussed below.



6.3.1 Section 104D(1)(b): Activity not contrary to objectives and policies of the relevant Plan

Pursuant to section 104(1)(b), a full assessment of the relevant objectives and policies of the AUP is provided in Section 6.4.4. The assessment identifies the most relevant objectives and policies, provides an assessment of the provisions that are more broadly relevant, and considers whether the Project is contrary to them on a fair appraisal of the objectives and policies as a whole. It is considered that the Project is consistent with the relevant objectives and policies of the AUP, as summarised below:

- Rural Zones - Section 6.4.4.1 below assesses Chapter H19 of the AUP's relevant objectives and policies regarding anticipated activities and outcomes in all rural zones and in respect of guidance for anticipated development in the Rural – Rural Production Zone. In summary, while a golf course development is not explicitly provided for under the objectives and policies of Chapter H19, the Project is not contrary to the policy direction since:
 - The design approach has been to keep the development at a scale which is appropriate within the rural zone and to be cognisant of the zone's character and amenity values;
 - The majority of the Site has been retained for farming and rural production activities;
 - Disturbance of areas of 'Prime' soils within the Site have been avoided where practicable, with approximately 4% of these soils within the Site's footprint having structures located on them; and
 - The Project includes an extensive enhancement package which will result in significant net positive ecological outcomes within the Site and indirect positive effects for the wider environment.

Having regard to some of the other key objectives and policies of the AUP, as assessed in Section 6.4.4 of this AEE, the Project is highly consistent with, and not contrary to, the policy direction relating to:

- **Wetland Management Areas** (Refer to Section 6.4.4.5) – With the exception of the wetland enhancement planting, all works within wetlands are avoided under the Project. Overall, the Project will result in an improvement in the current state of wetlands across the Site primarily as a result of removal of stock from the Site and the proposed concept ecological enhancement and restoration works.
- **Significant Ecological Areas** (Refer to Section 6.4.4.6) – The design approach used for the development matches the policy directive through prioritising the avoidance of removing or damaging vegetation within SEA areas. Where avoidance has not been possible, a 'light-touch' approach has been taken, minimising the disturbance in SEA

areas to the smallest extent possible. Furthermore, the ecological planting proposed more than adequately mitigates any adverse effects and results in a net expansion of the SEA area within the Site. Additionally, the Project will not result in fragmentation of indigenous ecosystems.

- **Outstanding Natural Features** (Refer to Section 6.4.4.7) – The ONFs on the Site⁴⁴ are protected from inappropriate use and development through avoidance of construction activities within, and set-backs of buildings from, these ONFs. Although a very minor amount of earthworks is proposed in the mapped ONF for Lake Ōkaihau, the natural values of the ONFs on Site will, overall, be enhanced as a result of the proposed landscape, enhancement and restoration planting works, and from the provision of access to these sites to Mana Whenua.
- **Lakes, rivers, streams and wetlands** (Refer to Section 6.4.4.10) – Construction and operational measures and management plans will ensure that the Project does not result in the degradation of any waterbodies or wetlands on Site. The Project provides for extensive enhancement and restoration works within the freshwater environments, and their margins, across the Site. Only those structures which have a functional need are sited within freshwater environments and their footprint within these areas is minimised to the extent practicable. The Project results in an overall net ecological gain across the Site.
- **Land disturbance, Regional and District** (Refer to Sections 6.4.4.13 and 6.4.4.14) - The ‘light-touch’ design approach means the proposed earthworks largely follows existing land contours, thereby, minimising the degree of disturbance, avoiding wetlands, and as far as practicable, avoiding the disturbance and removal of vegetation within SEAs, streams and riparian vegetation. The Applicant will provide the opportunity for relevant iwi representatives to undertake karakia / Site blessings, provide cultural monitors during earthworks, and provide cultural inductions to staff (construction and operational) and ongoing cultural monitoring. Additionally, the adoption of an accidental discovery protocol will provide for any cultural or archaeological discoveries during earthworks and best practice erosion and sediment controls will be installed and maintained for the duration of all earthworks.
- **Vegetation Management and Biodiversity** (Refer to Section 6.4.4.15) - Contiguous areas of indigenous vegetation within the Site have been avoided as far as practicable. Where the Project requires removal within these areas to achieve connection and Project functionality, again the ‘light-touch’ design approach adopted helps achieve these provisions. The change in land use within the Site from rural production to open recreation, and the consequential retirement of pasture and the

⁴⁴ Lake Ōkaihau and the Toroānui and Okiritoto Falls.

displacement of stock from the Site, will greatly improve the wider environment inclusive of its ecological integrity and function.

Overall, the Project was assessed as not being contrary to the objectives or policies of the AUP and therefore satisfies the 'gateway test' set out in s104D(1)(b).

6.3.2 Section 104D(1)(a): Adverse effects will be minor

Notwithstanding that the application is not contrary to the relevant objectives and policies of the AUP, a fulsome assessment of the actual and potential environmental effects associated with the Project is provided in Section 5 of this AEE. All of the technical assessments appended to this AEE conclude that the adverse effects of the Project can be avoided, remedied and / or mitigated and/or offset, to a point where residual adverse are minor or less than minor. While the assessments in Section 5 provided an assessment of all aspects of the Project, a high-level summary of some of the key adverse effects are set out below.

The adverse effects of disturbance and associated activities within the SEAs and streams on Site will be minimised, and where they cannot be avoided, any residual adverse effects will be mitigated through a significant restoration and enhancement planting package and/or off-set through stream restoration and stream "day-lighting". Associated wetland enhancement planting will be undertaken in accordance with a WRP, prepared in accordance with Schedule 2 to the NESFW. The remainder of the planting across the Site will be provided through an ecological and restoration management plans as described in Section 5.5.9 of this AEE, and a LPP. These activities will positively contribute to the 'extent and value' of these environments with any adverse effects being short-term in nature and linked to the initial construction activities. Overall, it is concluded that the development can be expected to result in a significant net-benefit to indigenous fauna, forests, streams, and wetland values and functions across the Site.

The adverse effects of construction activities will be appropriately controlled by a CEMP, prepared by the contractor and submitted for certification to the consent authorities prior to the commencement of construction works. Specific management plans will also be prepared in relation to erosion and sediment control, construction traffic, and an accidental discovery protocol, as recommended by Mana Whenua, will be adopted along with provision for cultural monitors and karakia / Site blessing and cultural inductions.

Any adverse effects as a result of the surface and groundwater takes will be less than minor and the takes will be within the existing allocation limits. The Project provides for an off-stream water storage reservoir which will allow water to be stored, thereby avoiding abstraction related impacts on surface water resources during periods of low flow.

The adverse effects of day-to-day operational activities at Muriwai Downs will be subject to the requirements of the SOMP which includes management plans and standard operating procedures for irrigation, wastewater, nutrient application, vegetation management as well

as environmental monitoring. This will set out the measures proposed to avoid, remedy or mitigate the application of fertilisers and agrichemicals for golf course maintenance, water take and use for irrigation of the golf course, the ongoing vegetation management across the Site, monitoring requirements for the Site and other related operational aspects.

It is expected that the consent conditions, yet to be collectively developed with Council, will set out the necessary requirements to ensure that all adverse effects of the Project are avoided, remedied and / or mitigated to an acceptable level.

Overall, the adverse effects of the Project are no more than minor and are, therefore, compliant with s104D(1)(a). Accordingly, the Project meets the first 'gateway' test and the application is capable of being granted subject to an assessment under section 104.

6.3.3 Section 104D Summary

Section 6.3.1 concludes that, overall, the Project is not contrary to the relevant objectives and policies of the AUP. Section 6.3.2 concludes that the adverse effects on the environment associated with the Project are no more than minor. Therefore, both limbs of the gateway test for section 104D of the RMA are deemed to be satisfied.

6.4 SECTION 104 ASSESSMENT

6.4.1 Introduction

Section 104(1) of the RMA specifies the matters that a consent authority must 'have regard to' when considering applications for resource consents, as follows:

104 Consideration of applications

- (1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2 have regard to-*
 - (a) any actual and potential effects on the environment of allowing the activity; and*
 - (ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and*
 - (b) any relevant provisions of –*
 - (i) a national environmental standard:*
 - (ii) other regulations:*
 - (iii) a national policy statement:*
 - (iv) a New Zealand coastal policy statement:*

- (v) a regional policy statement or proposed regional policy statement;
- (vi) a plan or proposed plan; and

The matters set out in section 104(1) of the RMA are considered in relation to the activities that are the subject of the resource consent application set out in Section 4 of this application.

6.4.2 Actual and Potential Effects

With respect to section 104(1)(a) of the RMA, the actual and potential effects on the environment in respect to the Project are set out in Section 5 of this AEE.

In summary, the Project will have numerous positive effects (as summarised in Section 5 of this AEE) and following the various effects mitigation initiatives proposed by the Applicant, and in the case of the culverting of stream P3, the proposed off-setting measures, any adverse environmental effects associated with the Muriwai Golf Project will be no more than minor.

6.4.3 Relevant Statutory Documents

With respect to section 104(1)(b) of the RMA, the following sub-sections provide an assessment of the activities associated with the Project against the:

- Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (“**NESCS**”);
- Resource Management (National Environmental Standard for Freshwater) Regulations 2020 (“**NESFW**”);
- Resource Management (Stock Exclusion) Regulations 2020 (“**Stock Exclusion Regs**”);
- Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 and Amendment Regulations 2020;
- New Zealand Coastal Policy Statement 2010 (“**NZCPS**”);
- National Policy Statement for Freshwater Management 2020 (“**NPSFM**”); and
- The Auckland Unitary Plan.

6.4.3.1 National Environmental Standard for Assessing and Managing Contaminants in Soil

The NESCS aims to ensure that land affected by contaminants in soil is appropriately identified and assessed before it is developed, and if necessary, the land is remediated, or the contaminants are contained to make the land safe for human use.

Clause 5(1) of the NESCS states that it applies when:

“...a person wants to do an activity described in any of subclauses (2) to (6) on a piece of land described in subclause (7) or (8):”

Clause 5(7) of the NESCS states:

“Land covered

(7) The piece of land is a piece of land that is described by 1 of the following:

- a) an activity or industry described in the HAIL is being undertaken on it;*
- b) an activity or industry described in the HAIL has been undertaken on it;*
- c) it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.”*

The NESCS applies to disturbances of a “piece of land”. In this case, the scale of disturbance proposed would not comply with the permitted activity thresholds in Regulation 8(3) of the NESCS.

Regulation 8(4) allows land-use of a piece of land to change where it can be demonstrated it is highly unlikely there will be a risk to human health given the intended activity. A PSI and a DSI have been proposed in support of this application (Appendix 6).

As outlined in Section 4 of this AEE, disturbing the soil, and changing the use, of the Site are activities regulated by Regulations 5(4) and 5(6) of the NESCS respectively. As the proposed activities do not comply with the permitted activity standards under Regulation 8 of the NESCS, consent is required for controlled activities in accordance with Regulation 9(1) and (3) respectively.

The matters over which control is reserved for disturbing soil (Regulation 9(2)) and changing use (Regulation 9(4)) are tabulated below, with a corresponding response to each.

Table 25: NESCS controlled activity matters

NESCS Regulation 9(2) – Matters over which control is reserved – Disturbing Soil	Assessment
(a) The adequacy of the detailed Site investigation including— <ul style="list-style-type: none"> (i) Site sampling; (ii) laboratory analysis; (iii) risk assessment. 	The DSI was prepared by a ‘suitably qualified and experienced person’. The DSI adequately considers the matters in Regulation 9(2)(a).
(b) how the activity must be— <ul style="list-style-type: none"> (i) managed, which may include the requirement of a Site management plan; (ii) monitored; (iii) reported on: 	The DSI recommends that a CSMP prior to undertaking any earthworks within the discrete areas of the Site where HAIL activities have occurred and COPC have been detected in soil samples at concentrations above the published background concentrations of non-volcanic

NESCS Regulation 9(2) – Matters over which control is reserved – Disturbing Soil	Assessment
	soils in the Auckland region (i.e. the Former Boarding House, Sheep Spray Shower & Woolshed, and Treated Timber Storage areas). The SMP will detail the appropriate soils handling and disposal measures that must be implemented, commensurate with the concentrations of contaminants observed at these areas of the Site as well as to manage any unexpected discovery of previously unidentified contamination at the Site.
(c) The transport, disposal, and tracking of soil and other materials taken away in the course of the activity.	As stated above, this detail will be contained within the SMP.
(d) the timing and nature of the review of the conditions in the resource consent.	The Applicant accepts that a review condition will be provided for within any consent conditions for the Project.
(e) The duration of the resource consent.	The Applicant accepts that an appropriate term will be provided as part of any consent for the Project.
NESCS Regulation 9(4) – Matters over which control is reserved – Changing use	Assessment
(a) Site sampling	The DSI was prepared by a ‘suitably qualified and experienced person’ and is adequate in terms of sampling. Section 7.1 of the DSI provides a detailed description of the sampling undertaken as part of the DSI process.
(b) Laboratory analysis	Section 7.2 of the DSI provides a detailed description of the analytical results from the sampling undertaken as part of the DSI process.
(c) Risk Assessment	Section 9 of the DSI provides a risk assessment based on the sampling and lab analysis. It concluded that as none of the sampling areas are considered to have concentrations of heavy metals, OCPs or PAHs that are above the NESCS SCSs/EGVs

NESCS Regulation 9(2) – Matters over which control is reserved – Disturbing Soil	Assessment
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for recreational and commercial/industrial land use, the soil at the Site is not considered to pose an unacceptable risk to human health for the proposed development.

In summary, through undertaking the DSI and associated risk assessment, and through the development of an CSMP for areas of the Site, and resource consent conditions, the Project appropriately address the relevant considerations under the NESCS.

6.4.3.2 Resource Management (National Environmental Standards for Freshwater) Regulation 2020

Section 4 of this AEE assesses the NESFW rules relevant to the Project. It was assessed that the elements of the Project subject to the NESFW regulations are:

- Regulation 39 – The vegetation clearance and earthworks / land disturbance associated with the wetland restoration activities as a **Restricted Discretionary Activity**;
- Regulation 42 – Construction of Wetland Utility Structures which form part of the golf course and wider development, principally be in the form of boardwalks, bridges and tracks traversing over wetland areas or through areas within a 10m setback from a wetland as a **Restricted Discretionary Activity**;
- Regulation 43 – Reclamation of the bed of a river as a **Discretionary Activity**;
- Regulation 54 (a) & (b) – Activities including vegetation clearance, earthworks within a 10m setback of a natural wetland, associated with the proposed golf course development and not explicitly provided for under the NESFW triggers the ‘Other Activities’ classification as a **Non-Complying Activity**; and
- Regulation 54(c) – Activities involving the diversion of stormwater and drainage water from areas of the golf course within the 10m - 100m setback of a natural wetland, taking of deep groundwater via a bore at a location within a 10m – 100m setback from a wetland and taking of surface water in a location within 10m – 100m upstream of a wetland, all of which are not explicitly provided for under the NESFW triggers the ‘Other Activities’ classification as a **Non-Complying Activity**.

Tables 25 and 26 provide an assessment in accordance with the applicable NESFW Regulations regarding the matters which discretion is restricted to for the restricted discretionary activities.



It is noted that no specific assessment is provided below for the discretionary and non-complying activities as the NESFW does not specify assessment criteria for these activities. However, an assessments of all effects associated with these activities have been discussed in Section 5 of this AEE.

Regulations 39 – Restricted Discretionary Activity - Restoration of natural wetland

Pursuant to sub-clauses 39(4), when considering activities associated with the restoration of natural wetlands, the consent authority’s discretion is restricted to the matters listed at Regulation 56. These matters are reviewed in Table 26 below.

Table 26: NESFW Regulation 56: Restricted discretionary activity – assessment matters for the restoration of wetlands

Provision	Assessment
(a) The extent to which the nature, scale, timing, intensity, and location of the activity may have adverse effects on:	
(i) the existing and potential values of the natural wetland, its catchment, and the coastal environment.	As summarised in Section 3 of this AEE and detailed further in the Wetland Restoration Plan forming part of the Ecology Report (Appendix 11), the restoration activities to be carried out in wetlands within the Site include the following: <ol style="list-style-type: none"> 1. Wetland riparian planting; 2. Wetland enrichment planting; and 3. Additional ecological wetland restoration.
(ii) the extent of the natural wetland	Restoration activities will increase wetland extent within the Muriwai Downs Property.
(iii) the seasonal and annual hydrological regime of the natural wetland.	The restoration activity, or any other activities proposed on Site, will not alter the hydrological regime of any wetlands.
(iv) the passage of fish in the natural wetland or another water body.	The Project does not include any structures or earthworks within any wetland, therefore, there will be no fish passage impact within any of the waterbodies or wetland environments over and above that which already exists.
(b) whether there are practicable alternatives to undertaking the activity that would avoid those adverse effects.	Provided best practice techniques are adopted (as proposed), the restoration works will not result in any adverse effects on the wetland system. Therefore, there is not a need to consider alternatives for the restoration works.

Provision	Assessment
(c) the extent to which those adverse effects will be managed to avoid the loss of the extent of the natural wetland and its values.	The proposed wetland restoration will increase the extent and values of the natural wetland thus resulting in a net environmental gain.
(d) other measures to minimise or remedy those adverse effects.	Given the significant positive effects associated with the Wetland Restoration Plan and provided best practice restoration processes are adopted (as proposed), there are no adverse effects associated with the restoration works requiring further treatment.
(e) how any of those adverse effects that are more than minor may be offset or compensated for if they cannot be avoided, minimised, or remedied.	The proposed wetland restoration works will produce a net environmental gain, therefore, no residual adverse effects requiring offsetting or environmental compensation.
(f) the risk of flooding upstream or downstream of the natural wetland, and the measures to avoid, minimise, or remedy that risk.	The proposed wetland restoration activities will not involve any new structures or earthworks within any wetlands, therefore, there will be no change to flood risk.
(g) the social, economic, environmental, and cultural benefits (if any) that are likely to result from the proposed activity (including the extent to which the activity may protect, maintain, or enhance ecosystems).	The proposed wetland restoration results in significant positive environmental, and cultural benefits.

In addition, a resource consent application under this regulation must include a WRP including the information specified in Schedule 2 to the NESFW and any resource consent granted under this regulation must include a condition requiring compliance with the WRP. A draft WRP is included as part of the Ecology Report (Appendix 11) and the Applicant accepts any consent granted will need to include a condition requiring compliance with this plan. Accordingly, the Applicant will propose an appropriate condition in this respect shortly after the lodgement of this AEE.

Regulations 42 – Restricted Discretionary Activity - Construction of Wetland Utility Structures

Pursuant to Regulation 42(4), when considering activities associated with the construction of wetland utility structures the consent holder must:

- Limit the construction activities for only as long as necessary to achieve its purpose (Reg 42(4)(a));

- Before the activity starts, a record must be made (for example, by taking photographs) of the original condition of the natural wetland’s bed profile and hydrological regime that is sufficiently detailed to enable compliance with paragraph (c) to be verified purpose (Reg 42(4)(b)); and
- The bed profile and hydrological regime of the natural wetland must be returned to their original condition no later than 30 days after the start of the activity (Reg 42(4)(c)).

The Applicant will propose appropriate conditions of consent shortly after the lodgement of this AEE that align with regulation 42(4) consent holder obligations. Further, pursuant to sub-clauses 42(6), the consent authority’s discretion is restricted to the matters listed at Regulation 56. These matters are reviewed in Table 27 below.

Table 27: NESFW Regulation 56: Restricted discretionary activity – assessment matters for the construction of wetland utility structures

Provision	Assessment
(a) The extent to which the nature, scale, timing, intensity, and location of the activity may have adverse effects on:	
(i) the existing and potential values of the natural wetland, its catchment, and the coastal environment.	<p>As described in Section 3 of this AEE, the golf course works will include the construction of wetland utility structures (i.e. 10 bridges over wetlands and a boardwalk adjacent to a wetland). These will be designed to have the minimum possible amount of encroachment into the wetland areas and their construction will avoid the need to enter any wetland. The construction activities may cause effects (e.g. sediment discharge) which are temporary in nature and will not result in any ongoing adverse effects on wetland values. Temporary construction effects will be minimised by implementing appropriate sediment controls.</p> <p>In addition, the Project involves extensive wetland restoration and enhancement works resulting in a net positive gain in wetland extent and wetland values.</p>
(ii) the extent of the natural wetland	<p>While the construction of the wetland utility structures will require footings and other structural foundations close to wetlands, these will avoid wetlands.</p>

Provision	Assessment
	Overall, the proposed construction of wetland utility structures will not result in a loss of extent of any wetland.
(iii) the seasonal and annual hydrological regime of the natural wetland.	All wetland utility structures will be designed to have no effect on the hydrology of the wetlands and catchments in which they are located within. The design for these structures is low profile and their positioning enables flows to pass around and / or over and / or under the structure and its foundations through the full range of flow conditions within the wetland and the catchments.
(iv) the passage of fish in the natural wetland or another water body.	As with the comments on the hydrological regime, the structures have been designed to avoid impacts on flows, therefore, there will not be any impacts on fish passage with the wetlands in the event that fish are present.
(b) whether there are practicable alternatives to undertaking the activity that would avoid those adverse effects.	The current design of wetland utility structures avoids adverse effects on wetlands to the extent practicable. Therefore, it is not considered necessary to consider any practical alternatives.
(c) the extent to which those adverse effects will be managed to avoid the loss of the extent of the natural wetland and its values.	While there may be some short-term adverse effects of a no more than minor nature during construction, when considered alongside the wetland restoration and enhancement works proposed, the Project results in an increase in extent and values of wetlands within the Site. This net environmental gain will not be impacted by, nor will it compromise, the operation of the wider development.
(d) other measures to minimise or remedy those adverse effects.	Adverse effects will be avoided and minimised to the extent practicable. Any residual adverse are at a level where they are no more than minor and therefore, do not warrant any further measures to minimise or remedy them.



Provision	Assessment
(e) how any of those adverse effects that are more than minor may be offset or compensated for if they cannot be avoided, minimised, or remedied.	N/A there will be no adverse effects which are more than minor.
(f) the risk of flooding upstream or downstream of the natural wetland, and the measures to avoid, minimise, or remedy that risk.	<p>The Project, including the wetland utility structures, is not assessed as contributing to, or resulting in, a flood risk.</p> <p>Additionally, the structures will be designed to enable the passing of flood flows in the event that floods are experienced within the catchments and / or wetlands.</p>
(g) the social, economic, environmental, and cultural benefits (if any) that are likely to result from the proposed activity (including the extent to which the activity may protect, maintain, or enhance ecosystems).	As discussed elsewhere in this report, the Project entails numerous social, economic, environmental, and cultural benefits.

In summary, as detailed in the relevant technical reports and primarily provided for through the activity specific management plans, the Project appropriately addresses the relevant considerations under the NESFW.

6.4.3.3 Resource Management (Stock Exclusion) Regulations 2020

The Stock Exclusion Regs, which became operative in September 2020, prohibit the access of cattle, pigs and deer to wetlands, lakes and rivers. These regulations were developed as part of the Essential Freshwater work programme.

The Stock Exclusion Regs require landowners to fence around lakes, wide rivers and natural wetlands on land being farmed. They do not apply to lakes, wide rivers and natural wetlands located on non-farmed areas on the same Property. Additionally, they identify that all stock must not be allowed closer than 3 metres to the edge of the bed of a lake or wide river (except for certain crossings). The regulations do not specify a set-back for exclusion from natural wetlands.

Despite this, noting that some farming activities will be retained near to the golf course to preserve the Site's rural character, it is appropriate to consider relevant regulations for the ongoing farming areas within the wider Site. In this respect, the following observations are made:

- Where these farmed areas contain natural wetlands;
 - By 1 July 2023, exclusion of all stock from any natural wetland that is identified in the regional plan or operative regional policy statement (i.e. currently only applicable to Lake Ōkiritoto and Lake Ōkaihau wetlands and if consents are granted, these areas would no longer be pastoral land);
 - By 1 July 2025, exclusion of stock from natural wetlands that support a population of threatened species; and
 - By 1 July 2025, exclusion of stock from natural wetlands 0.05 ha or greater on low slope land.
- Where these farmed areas contain Lakes or Rivers:
 - By 1 July 2025, exclusion of beef cattle on low slope land⁴⁵ or intensively grazing from lakes and wide rivers⁴⁶ (except when crossing):⁴⁷

In summary, although the stock exclusion regulations do not strictly apply to this Project, farmland adjacent to the proposed Project area, and across the balance of the Muriwai Downs Property, will need to comply with these regulations as appropriate.

6.4.3.4 Resource Management (Measurement and Reporting of Water Takes) Regulations 2010

The Measurement and Reporting of Water Takes regulations stipulate certain minimum water recording and reporting requirements for all water takes exceeding 5 litres per second.

Both the groundwater and surface water takes proposed as part of this application will exceed this threshold. Accordingly, as part of any water permit that may be granted for these takes, the Applicant accepts appropriate conditions that align with these regulations.

6.4.3.5 National Policy Statement for Freshwater Management 2020

The NPSFM, which became operative on 3 September 2020, provides direction to local authorities and resource users regarding activities that affect the health of freshwater and sets out objectives and policies for freshwater management under the RMA.

The NPSFM is relevant to the Project as it involves activities which affect surface waterbodies and natural inland wetlands. As detailed in the Ecology Report (Appendix 11),

⁴⁵ All of the Muriwai Downs Property is classified as low slope land except for a small area of steep land east of Lake Ōkaihau and land comprising SEAs directly south of Lake Ōkaihau and the gully west of the clubhouse.

⁴⁶ Wide river means a river (as defined in the Act) with a bed that is wider than 1 metre anywhere in a land parcel. The bed of a wide river is defined as “the space of land which the waters of the river covers at its fullest flow without overtopping its banks”

⁴⁷ Rules provide that stock must not be allowed closer than 3 metres to the edge of the bed of a lake or wide river.

in total, there are 21 wetlands that meet the definition of a ‘natural inland wetland’, and cover approximately 37 hectares⁴⁸ of the entire Muriwai Downs Property.

Part 2 of the NPSFM sets out the national objective for future freshwater management and 15 separate policies that support this objective. Those of which are relevant to the Project are considered further below:

Objective

- (1) *The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:*
 - (a) *first, the health and well-being of water bodies and freshwater ecosystems*
 - (b) *second, the health needs of people (such as drinking water)*
 - (c) *third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.*

Policies

Policy 1: *Freshwater is managed in a way that gives effect to Te Mana o te Wai.*

Part 1 of the NPSFW defines the “Fundamental Concept” of Te Mana o te Wai and the six associated principles⁴⁹ highlighting the interrelationships and dependencies between freshwater health, the health of the wider environment and the health of the community. The hierarchy of obligations stated here prioritises the health of water bodies and ecosystems, people’s health needs secondly and social, economic and cultural well-being thirdly.

The Project responds to this conceptual framework in a number of ways including:

- Through the development and application of specific environmental design criteria established early on in the Project;
- As summarised in Section 3, through the significant level of investigative effort and scientific analysis to determine the most sustainable water supply solution for the Project;

⁴⁸ RMA Ecology. 2021. Muriwai Downs Golf Course: Ecological Effects Assessment. Report Number 2042.

⁴⁹ Principles 1.3(4)(a) “mana whakahaere”, 1.3(4)(b) “kaitiakitanga” and 1.3(4)(c) “manaakitanga”, Principles 1.3(4)(d) “governance”, 1.3(4)(e) “stewardship” and 1.3(4)(f) “care and respect”

- Through the preparation of a wide-ranging suite of technical water studies designed to assess and interpret the Site's freshwater resources and associated interconnectivities;
- Through various sustainable and environmentally friendly Project design aspects such as; the adoption of raingardens, rainwater harvesting, high-flow surface water take, off-stream water storage, high-tech irrigation and drainage systems, and best practice stormwater and domestic wastewater treatment and management, that all collectively serve to protect, maintain and enhance freshwater resources across the Site in all their forms;
- Through the Applicant's commitment to construct and operate the golf course in accordance with Audubon International's Signature Sanctuary Program and associated standards; and
- Significantly, through the extensive level of riparian, wetland and indigenous forest planting proposed as part of the Project.

Further, while the Te Kawerau ā Maki CIA (Appendix 21) does not specifically respond to each of the principles, as summarised in Section 5 (cultural effects) the CIA provides largely positive comments and recommendations in respect of effects on water that give effect to the relevant principles of Te Mana o te Wai.

Mana whakahaere (Principle A) and *Kaitiakitanga* (Principle B) is demonstrated through the Applicant providing the opportunity for Te Kawerau ā Maki and Ngāti Whatua o Kaipara, and where appropriate other relevant iwi / hapū, to have an ongoing role in the Project, working alongside the Applicant with the design and implementation of various initiatives to protect, maintain, monitor and enhance the mauri of freshwater environments within and beyond the Site and surroundings. These aspects of the Project will drive positive freshwater management outcomes in accordance with Te Mana o Te Wai.

Manaakitanga (Principle C) and *Care and respect* (Principle F) are supported by the Project's purposeful avoidance of high value water bodies such as Lake Ōkaihau and Ōkiritoto wetland and its reliance on groundwater as a supplementary irrigation supply rather than a primary supply. *Manaakitanga* is most notably demonstrated by the Project's incorporation of significant restoration and enhancement works. These works represent significant and tangible acts of environmental nurturing and care.

The surface water abstraction approach is also consistent with the principles of *manaakitanga*, *care and respect* since it ensures there is sufficient water resource available for, primarily, the environment but also other users both now and into the future. Additionally, groundwater abstraction assessments have carefully considered the size and availability of this resource to ensure abstraction rates remain sustainable. These approaches will ensure that both the environment and freshwater resources are looked after and available for future sustainable use.

Overall, it is considered the Project is consistent with the relevant principles and overarching concept of Te Mana o Te Wai.

Policy 2: *Tangata whenua are actively involved in freshwater management (including decision-making processes), and Māori freshwater values are identified and provided for.*

Later in this AEE, Section 7 sets out the engagement with iwi / hapū who have an association with the Site and wider environment in which it is located. While occurring with various levels of success, engagement with these parties was initiated early in the Project's development to ensure there was the opportunity for parties to inform its design through identification of cultural values and interests, inclusive of freshwater values, potential effects on these values and interests and mitigation and management measures to appropriately provide for any adverse effects.

Of the iwi engaged with, only Te Kawerau ā Maki have provided a CIA for the Project thus far. Their CIA identifies that many of the waterbodies within the Site and surrounding area (inclusive Waimanu awa, Muriwai wetland, Roto Ōkaihau and Ōkiritoto, Toroānui Falls and groundwater) have cultural significance to the iwi and are recognised as having a high-level of cultural value including mauri, rawa tūturu, wāhi tapu and mahinga kai.⁵⁰

In accordance with the CIA, recommendations regarding the management of effects on freshwater values:

- As set out in Section 5.3 of this AEE, a range of mitigation measures will be implemented to ensure the development does not result in any more than minor adverse effects on Māori freshwater values; and
- The Applicant has made commitments to maintain an ongoing relationship with Te Kawerau ā Maki in order to ensure the iwi has a continued role in the construction and operation of the development.

Overall policy 2 is achieved by the Project.

Policy 3: *Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.*

The Project is consistent with Policy 3 insofar as this AEE and the appended technical assessments demonstrate an integrated approach has been taken towards assessing and developing management measures for the actual and potential adverse effects on freshwater and the environments which it supports.

⁵⁰ AUP Policy B6.5.2 (2).

The Water Effects Summary Report (Appendix 10) provides a summary of the range and outcomes of water related effects assessments undertaken. In summary, these assessments examined effects on all notable freshwater water resources and features within the Site including; the wider Ōkiritoto Stream catchment, the multiple permanent and intermittent streams on the Property, the wetlands across the Property, Lake Ōkaihau and groundwater. The report concludes that all potential Project effects on the suite of these interrelated water bodies are considered either negligible or less than minor.

Policy 5: Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved.

Given the recent operationalisation of the NPSFW, Auckland Council is yet to complete the National Objectives Framework (“**NOF**”) value and outcome setting process to a point where Freshwater Management Unit settings have been prescribed in the AUP. Therefore, there are no NOF parameters to measure the Project against.

Notwithstanding, to the extent Policy 5 seeks improvements to the health and well-being of any degraded water bodies and freshwater ecosystems, and at a minimum maintenance of all other water bodies and freshwater ecosystems, as described in Sections 5.5 and 5.6 of this AEE, the Project is consistent with these outcomes. The Project will not only avoid any further degradation, but it will also contribute beneficially to the health and well-being of water bodies and freshwater ecosystems.

Policy 6: There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.

The wording of Policy 6 is clear in that it is not a ‘no development’ policy. It is enabling of activities within wetlands and their margins provided the activities are consistent with the policy wording. A high-level summary of the Project against the three elements in the policy is set out below.

When considering the ‘extent’ of natural wetlands on-Site, while the works involve some bridges over wetlands, since all bridges over wetland areas are single span, their physical footprints will be located outside wetlands. Accordingly, these activities will not affect the ‘extent’ of wetland environments. Further, as set out in the Ecology Report, the Project includes planting and enhancement works that result in additional wetland environment being created across the Project Site. Thus, the Project does not result in a ‘loss of the extent’ of the natural wetlands within the Site.

When considering the values of the wetland, the NESFM defines ‘values’ as the ability of the wetland to provide for the following:

- a) ecosystem health:
- b) Māori freshwater values:
- c) hydrological functioning:
- d) indigenous biodiversity:
- e) amenity.

Regarding a) and d), the Ecology Report confirms the Project will result in a net ecological gain since the Project will contribute to an improvement in the ecosystem health and indigenous biological diversity and habitat extent through the removal of pest species and wetland enhancement and restoration planting.

Regarding b), for the same reasons described above in relation to a) and d), the Project is expected to positively impact Māori freshwater values associated with wetlands.

Regarding c), the Water Effects Summary Report confirms that given the minor changes in wetland catchment boundaries and extents associated with Site development, earthworks and contouring, potential changes in effects on wetland hydrological functioning are considered no more than minor.

Regarding e), the amenity values of the wider wetland environment will also be improved following the implementation of the proposed ecological planting package.

Overall, due largely to the specific 'light-touch' design approach set for this development through the establishment of, and adherence to, various design criteria, this Project fully achieves Policy 6 by:

- Ensuring all disturbance and bulk earthworks avoid wetlands on the Site;
- Ensuring earthwork cut depths remain within maximum limits to maintain the hydrological functioning of Type 4 wetlands supported by laterally flowing groundwater across the Site;
- Implementing best practice sediment and erosion control measures during the construction phase; and
- Implementing significant wetland restoration and enhancement planting as set out in the Ecology Report (specifically sought by Policy 6) that ensures the extent of wetlands on the Site will be increased and their values and overall quality will improve.

Policy 7: *The loss of river extent and values is avoided to the extent practicable.*

The Project does propose the culverting of and, therefore, loss of extent of, one section of permanently flowing freshwater channel (Stream I9) - required to enable golf functionality, within the Site. As a result there is a loss of ecological values associated with infilling 16 m of an intermittent stream and piping and rip-rapping of 175 m of a permanent stream.

Despite this, the Project is still consistent with Policy 7 since it will deliver the greatest practicable level of adherence to the effects management hierarchy and there is a need to undertake these instream works to ensure the functioning of the development as a Marquee golf course⁵¹. The basis for this assessment is tabulated below.

Effects Management Hierarchy	Assessment of the proposed piping of Stream P3	Assessment of the proposed infilling of Stream I9
(a) Adverse effects are avoided where practicable.	<p>In the case of the proposed Stream P3 piping, although a number of alternatives were considered, each scenario could not avoid the loss of wetland W5. No other alternative was considered practicable because:</p> <ul style="list-style-type: none"> • The whole golf course routing design is predicated on achieving golf playability; • The location of Stream P3 is in the landing zones for hole 14 and 16 golf play; • To achieve full protection of this stream, would mean significant compromises to the golf course routing, and because of the knock-on impacts associated with wholesale design changes, would essentially render the entire course design ineffective; • Arched culvert designs, overtopped with golf fairway playing surface, were determined cost prohibitive and 	<p>In the case of the proposed infilling of approximately 16m of the bed of intermittent stream I9 on the right-hand side of hole one was considered necessary in order to retain a playing line sufficiently far to the east to avoid having to remove mature Pohutakawa trees on the next rise to the left. As described in the Golf Course Design Statement (Appendix 2), it was always a priority for the design to “mould the fairway of the 1st hole to retain these mature, significant and beautiful tree specimens.”</p> <p>It follows that the golf course designers and ecologists working on the Project, consider that the retention of these significant indigenous tree specimens should take priority.</p> <p>Overall, to achieve a Marquee golf course outcome, minimise overall</p>

⁵¹ Section 3.24 of the NPSFM

Effects Management Hierarchy	Assessment of the proposed piping of Stream P3	Assessment of the proposed infilling of Stream I9
	<p>would not necessarily preserve aquatic vegetation.</p> <p>The proposed piping of Stream P3 will result in no adverse effects on Wetland W5.</p>	<p>ecological impact, while ensuring premium golf playability, infilling of this small section of stream is considered unavoidable.</p>
<p>(b) Where adverse effects cannot be avoided, they are minimised where practicable.</p>	<p>As mentioned above, effects have been minimised with this design given Wetland W5 situated east of stream P3 will be avoided.</p>	<p>The degree of infilling proposed in the original golf course was much larger and has since been reduced to the least amount possible while achieving the golf design requirements.</p> <p>Subsurface drainage is proposed within this area of fill. This drainage will divert water into the original natural stream bed at the downstream end of the fill.</p>
<p>(c) Where adverse effects cannot be minimised, they are remedied where practicable.</p>	<p>There are no practicable remedies in this instance.</p>	<p>There are no practicable remedies in this instance.</p>
<p>(d) Where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting is provided where possible.</p>	<p>The Ecology Report concludes that more than minor residual effects require offsetting. Accordingly, the authors of Ecology Report recommend enhancements to 326 m of existing degraded permanent stream P2, and re-creation of 31 m of intermittent stream I2 (through daylighting) to fully offset these impacts.</p> <p>The Applicant proposes these offset works as part of the Project.</p>	
<p>(e) if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and</p>	<p>Not applicable - offsetting is possible.</p>	
<p>(f) if aquatic compensation is not appropriate, the activity itself is avoided</p>	<p>Not applicable since residual more than minor effects are adequately addressed through the proposed offsetting noted above.</p>	

Policy 8: The significant values of outstanding water bodies are protected.

Of the waterbodies located within the Site, Lake Ōkaihau is recognised as being outstanding through its classification as a ONF (ID#72) in the AUP. The criteria which classify the lake as 'outstanding' primarily relate to natural form and geological features and do not capture water quality or ecological elements associated with the lake.

Primarily, as set out in the CEMP and accompanying construction and infrastructure drawings, apart from a small 42 m² area located outside the lake bed but within the mapped ONF area, Project earthworks avoid Lake Ōkaihau, and built structures are appropriately set back from it. Overall, the values which classify the lake as outstanding will be protected, and proposed planting in this area will enhance them further.

Regarding water quality, a narrow margin of land along the north-western margins of the lake (hole 2 fairway) gently slopes down towards the lake's northern edge. Therefore, the lake will be subject to small contributions of surface runoff from this part of the golf course during high intensity rainfall events. Provided best practice fertiliser application and management processes are followed (e.g. not applying fertiliser if heavy rain is forecast), the potential for fertiliser leaching or runoff to the lake is considered low. One of the Lodge stormwater outfall structures is also a proposed within the catchment of Lake Ōkaihau. The design of this structure will be in accordance with Auckland Council's Stormwater Management Devices in the Auckland Region GD01 guidelines and the contributing stormwater catchment (mainly accommodation unit rooves and pathways) is not considered to generate any contaminants of concern. As a consequence, this is not expected to adversely impact downstream lake water quality. No other activities associated with the Project have the potential to impact water quality. Notably, as detailed in the Ecology Report (Appendix 11), the riparian and indigenous forest planting proposed within the lake's catchment, coupled with the removal of stock, will also positively contribute to the water quality within the lake.

In addition to the lake, the Toroānui and Ōkiritoto Falls (ID #225) are also identified as an ONF. The Project respectfully avoids works within this ONF area. Although views will be possible of the Toroānui falls from some parts of the golf course, the extent of the course is appropriately set back from this feature.

Overall, these various measures will provide adequate protection to ONFs on the Site.

Policy 9: The habitats of indigenous freshwater species are protected.

Both the design of the Project and the manner in which it was designed, has meant that, in by far the majority of cases, aquatic habitats within the Site are fully protected, and in many instances, improved.

The only instances where aquatic habitat is adversely impacted are the piping and rip-rapping of 175 m of Stream P3 and infilling of 16 m of Stream I9. In these cases, the Ecology Report has confirmed that:

- Stream P3 is a highly degraded and modified permanent stream. The riparian vegetation has been cleared and now consists of short pasture grass and few exotic rushes (e.g. *Juncus effusus*), the stream bed and banks are completely channelised, and instream habitat for fauna is very limited due to instream conditions consisting of a single shallow run with anoxic sediments supporting a mix of native and exotic macrophytes; and
- Stream I9 is a small intermittent stream within a native forest catchment. The stream does not have suitable habitat to support fish (i.e. pools are too shallow).

While the Project could not avoid the loss of these habitats, an appropriate level of offsetting is provided as part of the ecological planting package proposed with the Project, as set out in the Ecology Report.

Policy 11: *Freshwater is allocated and used efficiently, all existing over-allocation is phased out, and future over-allocation is avoided.*

The Project includes both surface and groundwater abstractions.

Regarding surface water takes, the proposed high-flow take will only operate during periods of above median flow (i.e. when flows exceed 131 L/s) at the point of take. This means when flows recede below 131 L/s the take will cease, with no impact on streamflow. In addition:

- The existing Muriwai Links Golf Course water take is approximately 5 kilometres further downstream of the proposed take Site, and a number of tributaries join the stream, thereby further increasing the flow prior to location of the existing consented take. Therefore, harvested flow as a proportion of total flow decreases with increasing distance downstream;
- As the high-flow take will only operate during periods of high-flow during and / or following high rainfall, irrigation requirements are likely nil on these days; and
- Given the take only occurs in high-flow conditions, sufficient of surface water would remain available for potential permitted activity takes downstream of the Site.

The proposed high-flow surface water take is considered to have no adverse effects on downstream water users.

Regarding groundwater takes, the Project includes the abstraction a maximum annual volume of 180,000 m³. This volume is within the allocation limit for the groundwater resource.

Regarding efficiency of water use, this aspect of Policy 11 will be achieved through the adoption of state-of-the-art irrigation management control and monitoring systems as described in the Golf Course Construction and Operation Report (Appendix 3).

Overall, the water takes associated with the Project are within the current allocation limits for both ground and surface water. The water storage and irrigation management system will ensure that water is taken, stored and used in an efficient manner.

Policy 12: *The national target (as set out in Appendix 3) for water quality improvement is achieved.*

NPSFW Policy 12 and Appendix 3 seek to increase the proportion of specified rivers and lakes suitable for primary contact, using *E. coli* and cyanobacteria levels as a measure for water quality.

As detailed in the Farm Operations Report (Appendix 9), the Project results in the displacement of farming activities over a portion of the Site. This, in conjunction with proposed enhancement and restoration planting on the Site will likely contribute to reductions in *E. coli* and cyanobacteria levels within Lake Ōkaihau and the Ōkiritoto Stream.

Overall, it is considered that the Project will contribute to the achievement of Policy 12.

Policy 15: *Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement.*

Social and economic wellbeing:

The Project will support various positive social wellbeing outcomes. It will contribute to direct and indirect local employment opportunities in a part of Auckland which has few employment opportunities than other areas.

Once operational, the development will provide a world class golf course and high-performance facility which will enable local and international golfers to experience a 'Marquee' golf course and training facility. Therefore, the development will also positively contribute to New Zealand's international reputation in respect to a world class recreational destination. The elements are expected to contribute in a positive manner to tourism and associated economic benefits described more fully in the Economic Benefits Report (Appendix 17).

These outcomes have the potential to improve social and economic outcomes at both a local and regional scale therefore, the Project is consistent with the enablement of positive social and economic outcomes in a manner that is compatible with the NPSFW.

Cultural wellbeing:

As set out in the Section 5.3 of this AEE, the Project will result in numerous outcomes which will contribute positively to the cultural wellbeing of the local iwi including:

- Direct involvement of Mana Whenua in the design of the development. As a result of direct discussions with Project architects, the development incorporates cultural design elements which highlight the association of iwi with the Site and wider area;
- Improved access to culturally significant Sites within the Site for cultural practice;
- Potential opportunities for secure training and employment (particularly for rangatahi) in relation to the future operation of the development;
- The applicant's commitment to work with iwi on the design and development of appropriate cultural interpretation for the golf course through the use of cultural art, information placards or similar initiatives;
- The Project includes provision for enhancement of the natural and freshwater environments across the Site and these works will positively contribute to the mauri of the taiao; and
- Tangible opportunities for iwi to exercise kaitiakitanga on the Site including:
 - Direct involvement in ecological enhancement and restoration works; and
 - Direct involvement in environmental and cultural monitoring.

Given the above, the Project is considered to be consistent with this aspect of Policy 15.

NPSFM - Conclusion

The principles of Te Mana o Te Wai are given effect by the primacy of freshwater management considerations in the design and assessment of all key aspects of Project.

Providing for the ongoing involvement of Te Kawerau ā Maki, and other iwi / hapū where appropriate, is a key element of the Project. This will allow the iwi, as kaitiaki, to have an active and ongoing role in management of the Site's freshwater resources, including the enhancement and improvement of freshwater habitat and ongoing cultural monitoring.

The extent and value of the freshwater environments, including Lake Ōkaihau and the natural inland wetlands on Site, will increase as a result of the Project and any temporary and operational effects of the Project will be either negligible or less than minor.

There will be no loss of wetland extent associated with the Project. Moreover, the concept ecological enhancement and restoration package offered with the Project will result in significant expansion and enrichment of existing wetland areas.

There will be some loss of stream extent and value associated with the proposed piping of Stream P3 and also some loss of stream value and extent as a result of the proposed

infilling of a section of intermittent stream I9, however, adequate restoration and offsetting is proposed to address the remaining residual impacts.

The Project avoids adverse effects to the extent practicable, minimises adverse effects that cannot be avoided and provides significant enhancement and restoration of native forest, freshwater and wetland environments across the Site. Coupled with the resulting displacement of farming activities on the Site, the Project will achieve significant improvements in water quality values.

Overall, the Project, inclusive of its accompanying concept ecological enhancement and restoration package, presents a unique opportunity to deliver significant and positive social, economic, cultural and environmental outcomes. As such, and as the assessment above confirms, the Project is highly consistent with the NPSFM - fully achieving its objective and the relevant policies, more so than would be the case if the Project did not proceed.

6.4.3.6 New Zealand Coastal Policy Statement 2010

The NZCPS is a national policy statement under the RMA and took effect in December 2010⁵². The purpose of the NZCPS is to state policies to achieve the purpose of the RMA in relation to the coastal environment of New Zealand.

Site Application

The "coastal environment" is not defined or delineated in the NZCPS nor in the AUP. Policy 1 (2) of the NZCPS provides some direction as set out below:

Policy 1: Extent and characteristics of the coastal environment

2. Recognise that the coastal environment includes:

- a. the coastal marine area;*
- b. islands within the coastal marine area;*
- c. areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, coastal wetlands, and the margins of these;*
- d. areas at risk from coastal hazards;*
- e. coastal vegetation and the habitat of indigenous coastal species including migratory birds;*
- f. elements and features that contribute to the natural character, landscape, visual qualities or amenity values;*
- g. items of cultural and historic heritage in the coastal marine area or on the coast;*
- h. inter-related coastal marine and terrestrial systems, including the intertidal zone; and*
- i. physical resources and built facilities, including infrastructure, that have modified the coastal environment.*

⁵² Decisions on submissions on the AUP took effect after NZCPS became operative, therefore the AUP can be taken as having given effect to the NZCPS.

The Site does not include coastal environment elements set out in parts a, b, c, d, g, h or i of Policy 1(2). Whether or not the Site qualifies as coastal environment under parts c, e or f of this policy is examined further below.

Policy 1(2)(c) - areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, coastal wetlands, and the margins of these.

The Ecology Report (appendix 11) confirms that Lake Ōkaihou does not meet the NZCPS criterion (c) and, while some coastal bird species may utilise parts of the Site (e.g. shag species for feeding or roosting at freshwater systems such as Lake Ōkaihou or Ōkiritoto Stream), they are not entirely or partially reliant on these habitats during all, or part of their life cycles. Therefore, the Site is absent of core or important coastal habitat that can be considered 'habitat of indigenous coastal species' and, as a result, it does not meet the NZCPS criterion (c).

Policy 1(2)(e) - coastal vegetation and the habitat of indigenous coastal species including migratory birds.

The Ecology Report states that, while some coastal bird species may utilise parts of the Site (e.g. shag species for feeding or roosting at freshwater systems such as Lake Ōkaihou or Ōkiritoto Stream), they are not entirely or partially reliant on these habitats during all, or part of their life cycles. It confirms that, overall, the Site is absent of core or important coastal habitat that can be considered 'habitat of indigenous coastal species' and, as a result, it does not meet the NZCPS criterion (e).

Policy 1(2)(f) - elements and features that contribute to the natural character, landscape, visual qualities or amenity values.

The Landscape Report (Appendix 13) determines that the Site and its respective features, including the Lake Ōkaihou ONF are within the 'coastal context', but not within the coastal environment⁵³ (Figure 88).

⁵³ Waikato Regional Coastal Assessment Boffa Miskell Study (2015) .



Figure 88: Extent of coastal environment and coastal context (from the Landscape Report).

Summary

Based on the above, the Site is not located within in the coastal environment therefore, the NZCPS does not apply.

6.4.3.7 Regional Policy Statement

The AUP became operative in part on 15 November 2016 and is made up of a Regional Policy Statement, Regional Plan and District Plan provisions. The regional and district provisions of the AUP have been prepared in accordance with the direction provided in the RPS and have been given effect to. In this regard the regional and district objectives and policies give effect to the relevant regional policy statement provisions.

Accordingly, an exhaustive assessment for the AUP RPS is not provided however the Project accords with the relevant chapters of the RPS⁵⁴ for the following reasons:

Chapter B4 – Te Tiaki taonga tuku iho – Natural Heritage

The relevant objectives⁵⁵ of Chapter B4 are given effect to by Chapter D10 and assessed in Section 6.4.4.7 below. The Project is consistent with the relevant provisions of Chapter B4 as:

- The ONFs on the Site⁵⁶ are protected from inappropriate use and development through a design approach which focuses on avoidance of construction and permanent activities within the ONFs on Site;⁵⁷

⁵⁴ Chapter B2, B4, B6, B7 and B9 of the AUP.

⁵⁵ Objectives B4.2.1 (1) and (2).

⁵⁶ Lake Ōkaihau and the Toroānui and Okiritoto Falls.

⁵⁷ Policy B4.2.2 (6), Objective B4.2.1(1)

- Buildings and structures within the Site will be appropriately set back from the ONFs;
- The natural values of the ONFs, particularly Lake Ōkaihau, will be enhanced through the proposed landscape, enhancement and restoration planting works⁵⁸;
- Lake Ōkaihau water quality will not be adversely affected by the Project. The physical features of the lake and waterfalls on Site will not be affected; and
- The Applicant is committed to providing iwi access to the ONFs and other Sites of cultural significance within the Site to enable Mana Whenua to maintain their ancestral relationship with such places and to carry out kaitiaki duties in connection to them.⁵⁹

Overall, as already mentioned, the identified ONFs will be protected, and in the case of Lake Ōkaihau, enhanced, as part of the Project. As a result, relevant objectives of Chapter B4 are supported and achieved by the Project.

Chapter B5 - Ngā rawa tuku iho me te āhua – Historic heritage and special character

The Project is consistent with the relevant historic heritage objectives⁶⁰ and policies⁶¹ of Chapter B5 through:

- The identification of five recorded archaeological sites at the Site.
- As detailed in Section 5.4, to the extent practicable, works the vicinity of these Site will be avoided with the exception of the dilapidated early 20th century cottage (Site ID#Q11/614). Any remnants of the 20th century outbuildings associated with Ingram’s boarding house may also be affected.
- Given the history of the Site, there is the possibility that unrecorded pre-European Māori Sites, most probably small scale middens along stream banks or pit Sites on higher ground, may be affected by golf course development. The adoption of an accidental discovery protocol will be incorporated into the Project to provide a process for dealing with any such instances.
- To ensure any works which have the potential to affect recorded, and / or unrecorded Sites are provided for, the Applicant will seek the necessary archaeological authority from HPTNZ to modify or destroy recorded and / or unrecorded archaeological sites. The application for this will be progressed concurrently with the RMA applications. Additionally, following requests from iwi, the Applicant is supportive of the inclusion an accidental discovery protocol condition.

⁵⁸ Policy B4.2.2 (8).

⁵⁹ Policy B4.2.2 (8), Objective B4.2.1(2)

⁶⁰ Objective B5.2.1 (1) and (2).

⁶¹ Policies B5.2.2 (1), (6), (7) and (8).

- The Applicant will ensure ongoing consultation with the appropriate iwi authorities will cover any intended archaeological authority applications from HPTNZ.
- The Project includes provision for activities which will celebrate the history of the Site through provision fencing and signage at some sites and clearance of vegetation.

The objectives and policies of B5.3 are not relevant to the Project as there are no identified special character areas within the Site.

Chapter B6 Mana Whenua

The Project is consistent with the relevant objectives⁶² and policies⁶³ of Chapter B6 through the Applicant's engagement with Mana Whenua early in the design process of the Project with the following results:

- Inputs from Mana Whenua have been incorporated in the design and layout of the golf course and associated structures and activities within the Site.
- As set out in Section 5.3 of this AEE, the Applicant is adopting a range of mitigation and management measures which will manage adverse effects on cultural values and interests, including:
 - Providing access to cultural Sites;
 - Ongoing Mana Whenua involvement in Project design;
 - Establishing a Kaitiaki Committee for the Project;
 - Preparing and implementing a Mātauranga Māori Environmental Monitoring Plan in consultation with the Kaitiaki Committee;
 - In association with the Kaitiaki Committee, responding to the historic context of the Site and its features by installing appropriate interpretive signage, wayfinding devices, pouwhenua and/or artworks in suitable locations to reference the historic and cultural relationship and values of the Site;
- The Applicant will adopt an accidental discovery protocol to ensure there is a formal process in place for discovery of any cultural artifacts, koiwi or sites of significance during works.
- The Applicant will provide the opportunity for the relevant iwi representatives to undertake karakia / Site blessings, provide cultural monitors during earthworks, and provide cultural inductions to staff (construction and operational) and ongoing cultural monitoring at timeframes determined by iwi representatives.⁶⁴

⁶² Objective B6.2.1 (1) and Objective B6.3.1 (1)-(3).

⁶³ Policies B6.2.2 (1) and B6.3.2 (2).

⁶⁴ Policy B6.2.2 (1)

Specifically, as set out in Section 5.3 of the AEE, a CIA has been provided by Te Kawerau ā Maki, which outlines the cultural association that the iwi has with the Site and wider taiao. The CIA sets out the necessary mitigation and management requirements to ensure that effects on the values and interests of the iwi are ‘avoided or significantly reduced’. The Applicant has agreed to the proposed mitigation including:

- Ensuring that Te Kawerau ā Maki representatives continue to be involved in the Project design and development through the detailed design process;
- Taking the ‘light-touch’ design approach to ensure that works are setback, to the extent practicable, from culturally significant areas including the Ōkiritoto stream and wetland system, and the Ōkiritoto and Toroānui Falls and to ensure vegetation removal from SEAs and higher density habitat is minimised;
- The use of erosion and sediment controls during earthworks supported by Mana Whenua to avoid direct construction related effects on the whenua and the waterbodies (stream, tributaries, lakes and wetlands) within the Project area;
- Undertaking an assessment of the feasibility of controlling pest fish (rudd) in Lake Ōkaihau;
- Provision for cultural monitoring during earthworks to direct any necessary mitigations around the identified kāinga and pā Sites within the development area;
- Enhancement of areas within the Site through appropriate landscape design and cultural interpretation as well as riparian planting and restoration and enhancement planting across the Site;
- Provision of cultural design incorporations and interventions such as ensuring inter- and intra-site visibility and settings is maintained, undertaking place naming and educational and physical (artistic) interpretation of cultural Sites and history, and opportunity to input to the built form of elements of the Project.

Chapter B7 Natural Resources

The relevant objectives⁶⁵ and policies⁶⁶ of Chapter B7 are predominantly given effect to by Chapter D9 Significant ecological overlay, Chapter E11 and E12 (regional and district land disturbance provisions) of the AUP. The Project has been assessed to be in accordance with these provisions in Sections 6.4.4.13 and 6.4.4.14 below. Overall, the Project accords with the relevant objectives and policies of Chapter B7 since:

- the design successfully avoids all natural wetlands on the Site;

⁶⁵ Objectives B7.2.1 (1) and (2), Objectives B7.3.1 (1)-(3), Objective B7.4.1 (1) –(6).

⁶⁶ Policies B7.2.2 (5), B7.3.2 (1) – (6), Policies B7.4.2 (1), (6) and (8).

- the design has also adopted a 'light touch' approach with a focus on avoiding effects on other natural resource areas of value. For example, vegetation and high value tree specimen removal has been limited to only several trees, or groups of trees, through careful location and orientation of golf holes, tees, greens and bridges, meaning indigenous fauna and / or biodiversity will not be significantly compromised by the Project;
- the single span design for all bridges avoids the need to place supporting piles within streams or wetlands that they cross;
- the displacement of stock from the Site will enable currently unprotected areas of vegetation within the Site to recover and regenerate; and
- the enhancement and restoration native planting across the Site, together with the proposed weed and pest management of these areas, will result in significant net-gains of indigenous vegetation area and quality.

Consistency with Chapter B7 objectives and policies is also demonstrated by:

- The Ecology Report which observes how the proposed development has been designed to largely avoid actual and potential adverse effects to ecological values on Site. Further, the Report states that, through the ecologist's inputs to the design process, the current layout represents all of the areas and values that can be avoided to the extent practicable;
- The Arboriculture Report which highlights vegetation health improvements likely as a result of the Project's removal of stock from the Site, and confirms the Project has been appropriately designed so that:
 - removal of high value trees has been avoided to the maximum extent practicable, and
 - all tree and vegetation removal will utilise best practise methodologies, including the use of appropriate guidelines and processes to minimise the spread of kauri die-back disease; and
- The various effects assessments presented in detail within the Water Effects Summary Report (Appendix 10) and its various appendices, and as summarised in Section 5 of this AEE, that confirm any potential adverse effects on natural freshwater resources within and beyond the Site will be either negligible or less than minor.

Chapter B9 Rural Environment

The relevant objectives and policies of Chapter B9 is given effect to by Chapter H19 Rural Zone and is assessed in Section 6.4.4.1 below. The Project is consistent with the relevant objectives and policies of Chapter B9 since:

- As detailed in the Landscape Report (Appendix 13), the nature of the Project and its primary activity (golf) is considered to be a compatible land use alongside rural activities and as being observed both within the local context (i.e., the existing Muriwai Golf Course), and within the Auckland regional context;
- rural production activities will remain across most of the Property, particularly in locations that are viewed from external private and public viewing audiences, and ongoing farming is deliberately incorporated into the golf course design where practical ⁶⁷;
- the Clubhouse, Lodge buildings and most of the golf course are not visible from Muriwai Road and largely out of view from neighbouring dwellings. Any direct views are from very distant viewpoints only;
- the GPMC buildings, which are the most visible from external publicly accessible viewpoints, have been designed to a scale, nature and bulk, and will incorporate materiality and colouring, that all conform to typical rural farm buildings;
- the Sports Academy building, although not of a typical rural building design, maintains a low profile and incorporates building materials and colour palette that will minimise its overall impact on the rural landscape;
- the Tennis building adopts similar design philosophies, and has a floor level that sits below existing ground levels to reduce overall visual impact;
- there are no areas that contain 'Elite' soil within the Site;⁶⁸
- golf is predominantly focused in areas of the Property containing poorer quality soils while most of the "Prime soils" on the Property will continue to be used for rural production activities;
- where there are instances of development within areas containing 'Prime' soils, they are primarily limited to golf course activities., and as described in the Soil Report, due to the improved drainage and soil structure achieved as a consequence of golf course construction and ongoing maintenance, will likely experience improved soil quality and health over the longer term;
- other than in locations where permanent built structures are proposed (including the water reservoir), the Project in no way limits the ability of the Site to continue to be used for other agricultural or horticultural uses in future;
- As detailed in the Soil Report (Appendix 8), as a consequence of improved land contours, better drainage, better access plus the availability of water for irrigation, all occurring as integral parts of the golf course development, the construction of the golf

⁶⁷ Objective B9.2.1 (1).

⁶⁸ Objective B9.2.1 (2) and Objective B9.3.1 (1)-(3), Policies B9.3.2 (1)-(3).

course would actually broaden the range of agricultural or horticultural activities that could be carried out successfully on the Site in future;

- the proposed activities will ensure the character, amenity, landscape and biodiversity values of rural areas are maintained as assessed in the Section 5 of this AEE; ⁶⁹ and
- The Noise Report (Appendix 15) confirms noise generated from the construction and operational activities at the Site, including helicopter flights, will comply with the relevant rural zone limits. While construction noise may at times be audible at a low level, its character is typical of normal rural farm machinery. Further, once operational, noise will primarily be from maintenance machinery (e.g., mowers) that emits noise considered typical of normal rural activities. This maintenance related noise and any operational noise will not generally be audible at the closest receivers.

6.4.4 Auckland Unitary Plan - – Regional and District Plan provisions

The AUP guides the use of Auckland's natural and physical resources, including land development. It became operative in part in November 2016 and was last updated in October 2021.

A summary of the key observations, and conclusions as they relate to the Project are provided below.

6.4.4.1 Chapter H19. Rural Zones

Chapter H19 provides the relevant objectives and policies that direct the anticipated activities and outcomes in all rural zones and specific objectives and policies to provide guidance for anticipated development in the Rural – Rural Production Zone.

Primarily, the AUP recognises rural areas as places where people work, live and recreate and where a range of activities and services are enabled to support these functions.⁷⁰

Activities in rural zones

AUP objectives and policies relating to land use in rural zones generally promote activities that utilise 'Elite' and 'Prime' soil resources⁷¹ or support rural activities in some way. Generally, policies direct parties away from establishing non-rural activities or undertaking development within these soil classification areas with the exception of 'Prime' soils where activities can occur if avoidance is not practicable⁷². Additionally, the direction is that development should avoid the fragmentation of productive land⁷³.

⁶⁹ Objective B9.2.1 (3)- (5).

⁷⁰ Objective H19.2.1 (1).

⁷¹ Objective H19.2.1 (3).

⁷² Policy H19.2.2 (3).

⁷³ Objective H19.2.1 (4).

Non-residential activities anticipated in the rural zones are those activities maintaining or enhancing the rural economy and the well-being of people and local communities⁷⁴ and industry and services of an urban type and scale unrelated to rural production activities should not be located in rural zones⁷⁵

Where development and non-rural activities are undertaken, these activities should also be cognisant of the character, amenity values and biodiversity values of rural areas, with these values being maintained or enhanced⁷⁶. As is the direction with respect to areas of significant indigenous biodiversity, which should also be protected and enhanced.⁷⁷

The policy direction further enables a limited range of other activities in rural areas where their effects are managed to ensure infrastructure can be provided in an appropriate and timely manner and reverse sensitivity effects do not constrain rural production activities⁷⁸. Other non-rural activities are also anticipated that provide for tourism and activities related to the rural environment.⁷⁹

Policies that give effect to enabling non-residential activities aim to manage activities to contain and manage adverse effects on-Site and avoid remedy or mitigate adverse traffic effects on the road network while ensuring reverse sensitivity effects are avoided.⁸⁰

Comment:

While the suite of consents sought provides for the development of land within the Rural Production Zone, the development footprint covers approximately 99 ha of the Property while displacing approximately 103 ha of farming activity. The Property, however, will still be dominated by farming and farming will continue as the primary activity. Accordingly, the underlying rural character of the Property will also dominate.

The nature of the Project and its primary activity (golf) is considered to be a compatible land use alongside rural activities and golf is already observed both within the local context (i.e. the existing Muriwai Golf Course), and within the Auckland regional context. Rural production activities will remain across large areas of the Property, particularly in locations that are viewed from external private and public viewing audiences.

The Property's existing rural character is also a key reason why the golf course is proposed on this Site. This ruralness is something that is quintessentially New Zealand.

⁷⁴ Objective H19.2.5 (3).

⁷⁵ Objective H19.2.5 (4).

⁷⁶ Objective H19.2.3 (1).

⁷⁷ Objective H19.2.3 (2).

⁷⁸ Policy H19.2.2 (5)(c).

⁷⁹ Policy H19.2.2 (5)(e).

⁸⁰ Policy H19.2.6 (2)(a)-(c).

Showcasing this as part of the golf course experience will assist the design with achieving “Marquee” status – an important objective to the success of the Project. It follows that, farming, and views of farming, are purposefully retained where practical. Examples of this include the retention of grazing alongside hole 17 and along the length of Muriwai Road.

The Soil Report identifies that the Site does not include any ‘Elite’ Soils but does contain some ‘Prime Soils’ (as defined in the AUP). However, Prime Soils make up a relatively small proportion of the Site (approximately 30%). The proposed development is generally located away from the main areas of the Site's Prime Soils and has been designed to avoid them to the greatest extent practicable. Despite this, approximately 19% of the Site’s ‘Prime Soils’ are located in the footprint of the proposed development. It follows, approximately 81% of the Site’s Prime Soils will be retained for ongoing rural production activities. Of the affected Prime Soil areas, the majority will be used for the golf course and other golf playing areas. Notably, this does not mean rural activities on these areas are permanently displaced. Rural activities could easily return to these areas if golf was no longer undertaken in future. Furthermore, as demonstrated in the Soil Report, the consequential improvements to land contour, soil drainage, access, and availability of irrigation infrastructure resulting from the Project actually results in an improvement in soil production capacity. In turn, there will be a broadening range of agricultural or horticultural activities that could be carried out successfully on the Site in future. Finally, it is important to note that the Project only involves around 4% of Prime Soils within the Site’s footprint being occupied by permanent built structures (including the water storage reservoir).

The design approach for the structural form throughout the Site has been to intertwine the buildings and associated structures into the rural environment. This approach was adopted to ensure that, while the development was not a rural activity, its presence within the rural landscape is minimised from a character and amenity perspective. The design layout approach is detailed in the Golf Course Design Statement (Appendix 2) and the landscape and amenity outcomes are assessed in the Landscape Report (Appendix 13). These reports demonstrate where and how the Project incorporates key design elements to minimise adverse effects on rural character, landscape and amenity. These include the following design responses:

- The Clubroom and Lodge have been appropriately placed beyond the area of the Property visible from Muriwai Road, in between identified areas of indigenous vegetation and in pastoral areas that will not dominate the underlying post-development rural activities occurring across the balance of the Property;
- Built form in these areas will not be readily visible beyond the Property and will remain visually subservient to the rural characteristics of the area;
- The Lodge and Clubhouse buildings, while deviating from a traditional rural design vernacular, will be well integrated into the landscape through considered placement,

architectural form, materiality and supplementary planting and will remain embedded in the northern facing slopes in the western portion of the golf Site.

- Facilities that will be more visible (e.g. the GPMC and Sports Academy) have been developed so their design will take cues from the simplified and honest building profiles and colour palettes of rural environments and remain set back into the Site with rural farming activities remaining along the Site's southern and eastern pastoral areas.
- Signage at the entrance to the Golf Site will also be limited, this will be low-key and use local stone and/or rammed earth so it is suitably integrated into the local landscape context.
- Lighting will be low-level and designed to comply with relevant permitted activity standards.

Overall, with the ongoing farming operations still dominating the Property, and since very little of the development will be visible from Muriwai Road or neighbouring dwellings, the Site will still represent one which is typically found within a rural environment. Overall, any effects the development may have on rural character and amenity are appropriately addressed through this well-considered design approach.

As set out in Section 5.4 of the AEE, the activities associated with the construction and operation of the golf course and wider development will result in the generation of noise which is different to that which is typical of the rural environment. However, as the closest residential neighbour is over 700m away from the northern end of the golf course (and more than double that distance to the Clubrooms, the Lodge accommodation and other buildings onsite), it is concluded within the Noise Report that any noise effects will be low level and not generally audible at the closest receivers. Therefore, given the low level of noise generation, the Project will not result in adverse noise effects which would detract from the rural character of the area.

With respect to the development's impacts on SEAs, as confirmed in the Ecology Report, the approach has been to avoid, where practicable, works within the SEAs on Site, and where this was not achievable, a light-touch approach to disturbance within these areas has been taken (e.g. the use of a board walk instead of constructing a new track at the 8th tee). Acknowledging that complete avoidance was not possible in every location, the Project also involves extensive restoration / enhancement works adjacent to SEAs and adjacent to and within wetlands on the Site which will deliver a significant overall net positive ecological effect. Additionally, the change in land use of this portion of the Property, including the retirement of pasture and removal of stock, will significantly improve the Site and wider environment.

While the development is a non-rural activity, it is of an appropriate scale and design that ensures the area's rural character and amenity is maintained while also having a positive

effect on the local and wider economy and the wellbeing of the local and wider communities through the provision of services and employment. Additionally, the nature of the ongoing activities over the majority of the Site will be farming and golf course activities both of which are similar types of operations.

Activities in the Rural – Rural Production Zone

The purpose of the Rural – Rural Production Zone is to provide for the use and development of land for rural production activities and rural industries and services, while maintaining rural character and amenity values.

The relevant objectives⁸¹ and policy⁸² in the Rural – Rural Production Zone aim to provide for a range of rural activities to take place⁸³ while the productive capability of the land is maintained and protected from inappropriate use and development.⁸⁴ Policy H19.3.3 (1) gives effect to the relevant objectives by highlighting how different types of rural activities will determine the zone’s rural character and amenity values.

Comment:

While the wording of the Rural Production Zone objectives and policies are to some degree silent on provision for non-rural activities within the zone, the classification of ‘organised sport and recreation’ (which includes golf) as a restricted discretionary activity and the classification of proposed visitors accommodation’, cafes, restaurants, offices space and minor retail as restricted discretionary and discretionary activities demonstrates that activities of this nature are anticipated within the zone.

While the land use activities associated with the Project are not specifically contemplated by the specific objectives and policies for the Rural Production Zone, importantly, it can be said that the policies do not discourage the activities which form the Project in the Rural Production Zone, particularly in light of the following observations;

- The Project has been designed to ensure there is sufficient land available so that the dominant activity onsite continues to be rural production thus ensuring the zone’s rural character an amenity values are not adversely affected; and
- The placement of structures and the golf course has been done in a manner which avoids, where practicable, locating such activities on areas of ‘Prime’ soil.

Summary

⁸¹ H19.3.2 (1)-(2).

⁸² H19.3.3 (1).

⁸³ H19.3.2 (1).

⁸⁴ H19.3.2 (2).



While not explicitly provided for under the objectives and policies of the rural zone, the Project is consistent, and not contrary, with the rural zone policy direction of the AUP as:

- The design approach has been to ensure the development maintains a general absence of infrastructure of an urban type and scale and ensure it is cognisant of the zone's character and amenity values⁸⁵;
- The majority of the Site has been retained for farming and rural production activities;
- Disturbance of areas of 'Prime' soils within the Site have been avoided where practicable, with approximately 4% of these soils within the Site's footprint having structures located on them; and
- The Project includes an extensive enhancement package which will result in a significant net positive ecological outcome within the Site and indirect positive effects for the wider environment⁸⁶.

6.4.4.2 Chapter D2. Quality-sensitive Aquifer Management Areas Overlay

The Kaipara Sand Aquifer (comprising the Awhitu cemented sand and Kariotahi sand formations), a recognised quality sensitive rural aquifer, underlies much of the Site. The single objective under Chapter D2 directs that the quality and quantity of water from the aquifer is protected from contamination⁸⁷. More particularly, Policy D2.3(2) strives to discourage the discharge of contaminants in overlying areas, especially in circumstances where they are likely to have significant adverse effects on the quality of groundwater.

The Water Effects Summary Report (Appendix 10) identifies that there is the potential for treated wastewater and other operational stormwater discharges from the Site to reach groundwater. However, any risk to the quality of local groundwater is appropriately, addressed given that:

- Wastewater from the Site will be treated to a tertiary level and then disposed of to land in accordance with best practice guidelines, based on conservative design assumptions (particularly area to loading rate ratio), and located clear of high-risk receiving environments and water bodies;
- The Engineering Infrastructure Report (Appendix 5) confirms all operational stormwater discharges from high activity impermeable areas will be treated following best practice guidelines, before being discharged back to the environment, and thus resulting effects on water quality are likely to be no more than minor; and

⁸⁵ Objective H19.2.3 (1) & Policy H19.2.4 (1).

⁸⁶ Objective H19.2.3 (2) & Policy H19.2.4 (3).

⁸⁷ Objective D2.2 (1).

- Nutrient application to golf playing areas will be undertaken in accordance with best practice methodologies to be documented and implemented via an Operational Management Plan for the Site.

Overall, the potential for surface and groundwater water quality issues resulting from wastewater and operational discharges to ground are considered to be no more than minor. Therefore, the Project is consistent with the policy direction contained within Chapter D2.

6.4.4.3 Chapter D4. Natural Stream Management Areas Overlay

As detailed in Section 2 of this AEE, an area within the south-western extent of the Project Site is identified as falling within the Natural Stream Management Areas overlay. This area includes a high quality unnamed tributary stream that flows through native forest and into Lake Ōkaihau. The sole objective of Chapter D4 is to protect river and streams identified as Natural Stream Management Areas with high natural character and high ecological values.⁸⁸

The Project avoids this unnamed tributary stream and no Project-related activities are proposed within its contributing catchment. Therefore, the Project fully achieves the relevant policies that give effect to the above objective.

6.4.4.4 Chapter D5. Natural Lake Management Areas Overlay

As set out in Section 2 of the AEE, Lake Ōkaihau is identified within the Natural Lake Management Area overlay. The relevant objectives in Chapter D5 aim to maintain where it is excellent or good, and improve where it is degraded, water quality and natural character. Additionally, the high natural character and ecological values of natural lake management areas should not be adversely affected by recreational use.⁸⁹

The Project is consistent with the relevant policies that give effect to the above objectives since:

- While a small area of land along the north-west margins of the lake will be subject to the use of fertiliser, best practice fertiliser application and management processes to be documented in the SOMP will be followed (e.g. not applying fertiliser if heavy rain is forecast), to ensure the potential for fertiliser leaching or runoff to the lake is low;
- The hydrology and nutrient regime for Lake Ōkaihau will not change as a result of the Project;
- The Project does not include any direct water take from the lake.⁹⁰

⁸⁸ Objective D4.2 (1).

⁸⁹ Objective D5.2 (1-3).

⁹⁰ Policy D5.3 (2),

- The Project does not include any new exotic forestry blocks;⁹¹
- The margins of the natural lake management area will be maintained and enhanced as part of the proposed concept ecological enhancement and restoration planting described in the Ecology Report, livestock will not be able access the lake as a result of removal of stock from its proximity (which is not the case currently), and there are no structures within a 50 m setback from the lake. Overall, the Project, in combination with the ecological planting proposed, will certainly improve the quality of Lake Ōkaihau water and significantly increase the extent and quality of the Lake's aquatic and riparian habitat;⁹²
- The Project does not include any direct recreational activities on Lake Ōkaihau ⁹³ nor does it include provision for any infrastructure⁹⁴; and

Overall, the Project will not result in the deterioration of water quality in the natural lake management area and will likely result in a marked improvement.⁹⁵

6.4.4.5 Chapter D8. Wetland Management Areas Overlay

As set out in Section 2 of this AEE, the Site contains two Wetland Management Areas within the overlay being Lake Ōkaihau and the Ōkiritoto Wetland.

The relevant objectives of Chapter D8 aim to maintain or enhance wetland management areas that have high natural character, ecological values⁹⁶, cultural, recreational and amenity values⁹⁷. Further, the reduction in the spatial extent of wetlands is to be avoided as far as practicable.⁹⁸

The Project is consistent with the relevant policies giving effect to the above objectives because:

- All wetlands on the Site will be avoided;
- The Project will improve the current state of all wetlands within the Site as a result of:
 - removing stock from the Site, thereby, reducing run off and nutrient loads and improving the marginal activities;⁹⁹

⁹¹ Policy D5.3(3).

⁹² Policy D5.3 (4).

⁹³ Policy D5.3(5).

⁹⁴ Policy D5.3(7).

⁹⁵ Policy D5.3 (1) and Water Effects Summary Report (Appendix 10).

⁹⁶ Objective D8.3 (1).

⁹⁷ Objective D8.3 (2).

⁹⁸ Objective D8.3 (3).

⁹⁹ Policy D8.3(1)(a).

- o the proposed concept ecological enhancement and restoration¹⁰⁰, namely:
 - riparian planting around wetlands on and adjacent to the Site;
 - enrichment planting within wetlands on and adjacent to the Site;
 - invasive plant removal within wetlands on and adjacent to the Site;¹⁰¹
 - additional native planting around existing SEA areas is proposed in catchments contributing to wetlands on and adjacent to the Site;
 - the resultant increase in wetland extent and wetland values achieved through the implementation of the ecological planting summarised above¹⁰²; and
- Appropriate maximum cut depths will be observed and changes to surface water catchment areas will be minimised all to preserve hydrological functioning of wetlands;
- Best practice erosion sediment controls will be adopted during construction, including manual turfing of areas immediately adjacent to wetlands; and
- The proposed ground and surface water abstraction activities will not result in the reduction in water levels within either of the wetland overlay areas.¹⁰³

It is also noted that, while the Project includes activities within the Wetland Management Area, these activities are associated with the proposed enhancement planting and restorations works¹⁰⁴ which have a functional need to be located within the wetlands.¹⁰⁵

6.4.4.6 Chapter D9. Significant Ecological Areas Overlay

The relevant objectives of Chapter D9 aim to protect areas of significant indigenous biodiversity in terrestrial and freshwater habitats from the adverse effects of resource use and development.¹⁰⁶ The relevant objectives strive to enhance indigenous biodiversity values of SEAs¹⁰⁷ and ensure the relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna are recognised and provided for.¹⁰⁸

¹⁰⁰ Policy D8.3(1)(d) & (e).

¹⁰¹ Policy D8.3(1)(f).

¹⁰² Policy D8.3(1)(d) & (e).

¹⁰³ Policy D8.3(1)(b).

¹⁰⁴ Policy D8.3 (3)(a) & (b).

¹⁰⁵ Policy D8.3 (4).

¹⁰⁶ Objective D9.2 (1).

¹⁰⁷ Objective D9.2 (2).

¹⁰⁸ Objective D9.2 (3).

The relevant policies aim to give effect to the above objectives by managing the effects of activities on indigenous biodiversity in SEAs¹⁰⁹ through avoid, remedy, mitigate or offset measures¹¹⁰ and through the encouragement of indigenous biodiversity value enhancement within SEAs.¹¹¹

The Project is consistent with the relevant objectives and policies above for the following key reasons:

- As demonstrated in the Ecology Report and Arboriculture Report, the design approach used for the development is consistent with the policy directive. That is, removing or damaging vegetation within SEA areas (and other non-SEA areas) is largely avoided as a priority. Where avoidance was not possible, significant effort to finetune the Project's design has been afforded to minimise the effects on SEA areas. This iterative design process has resulted in an outcome where only approximately 1,396 m² of vegetation on the margins of one SEA (SEA_T_5525) will be affected by the proposed development, which constitutes ca. 1.3% of the total area of SEA_T_5525 or 0.18% of the total area of SEA forest within the Property. Furthermore, the ecological planting proposed as part of the Project more than adequately mitigates these adverse effects.¹¹²
- The removal of stock will enable any SEA areas adversely impacted by grazing to regenerate and for their long-term health to improve.
- Vegetation removal within the SEAs is effectively limited to sections where bridges are proposed. Although the current bridge locations and orientations appropriately avoid and minimise impacts on high value trees or groups of tree within SEA areas, finalised micro-siting of these will be undertaken during the detailed design stages to minimise vegetation removal and earthworks impacts even further.
- All tree removal and vegetation disturbance works will be overseen by the appointed works supervisory arborist in accordance with a Tree Management Plan as outlined in the Arboricultural Report (Appendix 12).
- Weed eradication and pest control proposed will further improve the health of vegetation in SEA and non-SEA areas¹¹³.
- As discussed elsewhere, the Project will not result in loss of wetland extent or wetland values. The Project will result in more wetland area and increased wetland values.¹¹⁴

¹⁰⁹ Policy D9.3 (1).

¹¹⁰ Policy D9.3 (2).

¹¹¹ Policy D9.3 (3).

¹¹² Policy D9.3 (1)(b-e).

¹¹³ Policy D9.3 (2)(c) and Policy D9.3 (3)(b) and Policy D9.4(a).

¹¹⁴ Policy D9.3 (2)(f).

- Temporary earthworks associated with the construction of the golf course will not occur within SEA wetlands.
- Works within the PRZ of all trees will be supervised by a qualified arborist, with all areas fenced during the earthworks phase.
- The scale of vegetation removal is small compared to the total SEA area within the Site. This also means there will be no fragmentation of indigenous ecosystems. Additionally, the proposed ecological planting will mean the net extent of SEAs within the Site will expand.¹¹⁵
- Sufficient buffering of indigenous ecosystems will remain within the Site as the natural areas are already largely limited to gully systems not suitable for pastoral farming and the ongoing activities associated with the development will not encroach into these areas.¹¹⁶
- As identified in the Ecology Report (Appendix 11), the Project will not result in the adverse effects on the rare, or threatened species of vegetation, lizard and bird confirmed as occurring, or having a high likelihood of occurring, within the Site. For example, there will be no significant modification to the extent or quality of habitat for 'At Risk' bird species (black shag) recorded using Lake Ōkaihau within the Site.¹¹⁷
- As confirmed in the Ecology Report, a reduction in the abundance of individuals within a population, or natural diversity of indigenous vegetation and habitats of indigenous fauna will not occur. Further, the proposed vegetation removal will not adversely impact localised species population as the vegetation type to be removed is the same as that which is dominant across the entire Site and any effects of this removal will be sufficiently provided for through enhancement planting.¹¹⁸
- The likely impact on ecosystem services would be less than minor when considering the retained vegetation over the entire Site, therefore, the loss of ecosystem services will not occur.¹¹⁹
- When considering the enhancement planting and mitigation measures proposed, the Project will not result in effects which contribute to a cumulative loss or degradation of habitats, species populations and ecosystems.¹²⁰
- It is not considered the proposed vegetation removal is significant in terms of the wider environment in which the Site is located. The removal is localised and in areas

¹¹⁵ Policy D9.3 (2)(a) & (b).

¹¹⁶ Policy D9.3 (2)(d).

¹¹⁷ Policy D9.3 (2)(e).

¹¹⁸ Policy D9.3 (2)(g).

¹¹⁹ Policy D9.3 (2)(h).

¹²⁰ Policy D9.3 (2)(i).

of generic vegetation. The Site is already heavily modified and grazed by stock. Overall, the Project will not result in any adverse downstream effects on wetlands, rivers, streams, and Lake Ōkaihou that have not been avoided, remedied, mitigated or offset¹²¹

- The Project will result in the increase of the viability and value of indigenous vegetation and habitats of indigenous fauna due to the extensive enhancement and restoration planting and pest management proposed.¹²²
- As confirmed with relevant iwi groups, the Project will not result in a reduction in the historical, cultural, and spiritual association held by Mana Whenua, subject to adhering to the proposed mitigation measures.¹²³
- The Project will not lead to disturbance to indigenous flora that is likely or known to increase threats, disturbance or pressures on indigenous flora. In particular, the Project proposes appropriate mitigation measures in addressing pests through provision of a Vegetation Management Plan which will include appropriate Pest Management protocols and procedures and will also address methodologies designed in accordance with current biosecurity guidelines provided by MPI and Auckland Council to minimise the risk of spreading Kauri dieback.¹²⁴
- The vegetation removal and habitat disturbance activities will not result any increase in the extinction probability of species as confirmed in the ecology assessment.¹²⁵
- The Project will result in the restoration, protection and enhancement of threatened ecosystems and habitats for rare or threatened indigenous species, in particular in the form of enhancement and restoration wetland, riparian and native forest planting. These initiatives will ultimately deliver a significant positive impact for all SEA areas and the indigenous species they support.¹²⁶
- Appropriate fencing will remain, and where none currently exists, is proposed to protect all SEA areas on the Site.¹²⁷
- The array of management plans are proposed which will result in appropriately managed effects within SEAs these include a Ecological Management Plan (itself comprising management procedures and processes for weed and pest control, Kauri

¹²¹ Policy D9.3 (2)(l).

¹²² Policy D9.3 (2)(m).

¹²³ Policy D9.3 (2)(n).

¹²⁴ Policy D9.3 (2)(p) and Policy D9.3 (4)(a) & (b).

¹²⁵ Policy D9.3 (2)(q).

¹²⁶ Policy D9.3 (3)(a) & (b)

¹²⁷ Policy D9.3 (3)(c)

Die-back and tree removal and trimming), a Restoration Management Plan, a Wetland Restoration Plan and a Landscape Planting Plan.¹²⁸

- Where available, local, eco-sourced vegetation will be used for the proposed restoration and enhancement planting across the Site. However, in the event that there are limits in supply, and it may not be practical to eco-source from the immediate vicinity, it is proposed that plant source be selected from seed banks possessing similar forest typologies in the Auckland Area.¹²⁹
- As discussed in Section 5.3 of the AEE, the Project will provide opportunities to partner with Mana Whenua in the practical exercise of kaitiakitanga in restoring, protecting, and enhancing areas of cultural significance within the Site as well as other areas within the wider taiao.¹³⁰

6.4.4.7 Chapter D10. Outstanding Natural Features Overlay and Outstanding Natural Landscapes Overlay

The Site contains two outstanding natural features being Lake Ōkaihau (ID 72) and the Toroānui and Okiritoto Falls (ID 225), therefore consideration of Chapter D10 needs is appropriate.

The relevant objectives of Chapter D10 aim to:

- protect Auckland's outstanding natural features and outstanding natural landscapes from inappropriate use and development;¹³¹
- recognise and provide for the ancestral relationships of Mana Whenua with outstanding natural features and outstanding natural landscapes;¹³²
- restore and enhance standing natural features and outstanding natural landscapes;¹³³ and
- recognise that existing rural production activities form part of the landscape values in outstanding natural features and outstanding natural landscapes.¹³⁴

¹²⁸ Policy D9.3 (3)(e)

¹²⁹ Policy D9.3 (3)(f)

¹³⁰ Policy D9.3 (3)(g)

¹³¹ Objective D10.2(1)

¹³² Objective D10.2(2)

¹³³ Objective D10.2(3)

¹³⁴ Objective D10.2(4)

There are four ONF specific policies¹³⁵ that give effect to the objectives above. Based on the information provided in the Te Kawerau ā Maki CIA and the findings and conclusions of the Landscape Report (Appendix 13), for the reasons set out in the assessment against the objectives and policies of the Chapter B4 of the RPS (refer to Section 6.4.3.7 above), the Project is assessed to be consistent with these policies.

6.4.4.8 Chapter E1. Water quality and integrated management

Chapter E1 provides the policy direction related to water quality and the integrated management of land and water quality. The relevant objectives provide direction on improvement of freshwater and sediment quality¹³⁶, improvement of the mauri of freshwater for cultural use by Mana Whenua¹³⁷ and ensuring that the stormwater and wastewater networks are managed to protect public health while preventing or minimising adverse effects of contaminants on freshwater quality.¹³⁸

The objectives and policies within Chapter E1 generally align with those which are contained within the higher order NPSFM, which have been discussed in detail in Section 6.4.3.4 above. Additionally, as concluded in the Water Effects Summary Report (Appendix 10), all potential water quality effects are considered negligible or less than minor.

Therefore, no further assessment of the Chapter E1 objectives and policies is provided here.

6.4.4.9 Chapter E2 Water Quantity, Allocation and Use

The relevant objectives in Chapter E2 aim to:

- enable the use of groundwater provided the natural values of water is maintained and the established limits are not exceeded;¹³⁹
- manage water resources within limits to meet current and future water needs for social, cultural and economic purposes;¹⁴⁰
- prioritise freshwater allocation in the order of domestic and municipal supply, for animals and economic development;¹⁴¹

¹³⁵ Policy D10.3 (3), (4), (5) and (7).

¹³⁶ Objective E1.2. (1)

¹³⁷ Objective E1.2. (2)

¹³⁸ Objective E1.2. (3)

¹³⁹ Objective E2.2 (1)

¹⁴⁰ Objective E2.2 (2)

¹⁴¹ Objective E2.2 (3)

- manage water to be efficiently allocation and used;¹⁴² and
- acknowledge Mana Whenua values including the mauri of water in the allocation and use of water.¹⁴³

The relevant polices that give effect to the objectives above mainly relate to the take and use of water, damming of surface water and drilling holes and bores. The Project is assessed to be in accordance with the policies that give effect to the objectives above because:

- The water supply for the Site, inclusive of irrigation and potable supply, will be sourced from a combination of surface (high flow) and groundwater abstractions both of which are within the available allocation limits for each water resource.¹⁴⁴
- Abstracted water will be stored within a 140,000m³ reservoir, allowing water to be abstracted and stored for use as required. This process enables a more efficient management of water supply and reduces the potential abstraction effects on the surface water resource as it allows for water abstracted during periods of high flow to be stored for use when the stream flows may be reduced.¹⁴⁵
- The combined proposed surface and groundwater abstraction also allows the Applicant to reduce the frequency of abstraction from the Raurataua Stream during the warmer months and at times when the flows may be low thus reducing the potential for adverse effects on the surface waterbody.¹⁴⁶
- The Project will include monitoring of the surface and groundwater abstraction volumes and rates as well as water use across the golf course development Site.¹⁴⁷
- The Applicant will engage international irrigation experts to provide technical advice and assessment on final golf course irrigation design and water use requirements and to design the irrigation system to ensure it meets the requirements of the Site while achieving an effective and efficient use of the water resource¹⁴⁸.

¹⁴² Objective E2.2 (4)

¹⁴³ Objective E2.2 (5)

¹⁴⁴ Policy E2.3 (4) – (7)

¹⁴⁵ Policy E2.3 (6) – (7) & (18)

¹⁴⁶ Policy E2.3 (6) – (7)

¹⁴⁷ Policy E2.3 (9)

¹⁴⁸ Policy 4(a)(ii)

6.4.4.10 Chapter E3. Lakes, Rivers, Streams and Wetlands

The relevant objectives from Chapter E3 and an assessment against these are summarised in the Table 28 below:

Table 28: Summary of Chapter E3 Assessment

Objectives	Lakes	Streams	Wetlands
(1) Protect Auckland's lakes, rivers, streams and wetlands with high natural values from degradation and permanent loss.	As assessed in the WWLA Lake Ōkaihou assessment, Lake Ōkaihou will not be degraded from the construction and operation of the Project.	As confirmed in the Water Effects Summary Report and the Ecology Report, the Project will not result any adverse effects on any high-value streams within the Site that are more than minor.	As confirmed in the Ecology Report, the Project will not result in the loss of extent or values of the wetlands on Site.
(2) Restore, maintain or enhance Auckland's lakes, rivers, streams and wetlands	As assessed in the WWLA report, the water quality of Lake Ōkaihou will be maintained.	As confirmed in the Ecology Report, the Project provides for extensive enhancement and restoration work within the freshwater environments, and their margins, across the Site.	As confirmed in the Ecology Report, the Project provides for extensive enhancement and restoration work within the freshwater environments, and their margins, across the Site.
(3) Residual adverse effects are offset where they can't be avoided, remedied or mitigated	There are no residual adverse effects from the Project that will impact Lake Ōkaihou.	As confirmed in the Ecology Report, residual adverse effects on streams are adequately addressed.	As confirmed in the Ecology Report, there are no residual adverse effects associated with the Project with respect to wetlands.
(4) Structures in, on, under or over the bed of a lake, river, stream or wetland are provided for where there are functional or operational needs for the structure to be in that location, or traverse that area.	N/A structures are not proposed.	<p>There is a functional and operational need for the proposed bridges / wetland utility structures over some of the streams and areas of wetlands within the Site to enable connectivity across the Site and for the operation of the golf course.</p> <p>No part of any bridge structure will be located within the wetland extent.</p> <p>There is also a functional and operational need for the piping of Stream P3 and the small amount of</p>	



Objectives	Lakes	Streams	Wetlands
		infilling of Stream I9 as previously detailed above in Section 6.4.3.5.	
(5) Activities in, on, under or over the bed of a lake, river, stream and wetland are managed to minimise adverse effects on the lake, river, stream or wetland.	No structures or activities are proposed over Lake Ōkaihau.	As confirmed in the Water Effects Summary Report, other than the proposed piping of Stream P3, the Project will not result in any adverse effects on any streams within the Site that are more than minor. As confirmed in the Ecology Report residual adverse effects associated with piping Stream P3 are adequately offset.	As confirmed in the Water Effects Summary Report and the Ecology Report, the Project will not result any adverse effects on wetlands within the Site that are more than minor.
(6) Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.	No reclamation or drainage of the Lake Ōkaihau bed is proposed.	Only 16m of the headwaters of a moderate value intermittent stream is affected by infilling / earthworks. In order to avoid remove of mature Pohutukawa trees further along this golf hole, this infilling is unavoidable, and in any event, as already identified, is appropriately mitigated.	No reclamation or drainage of wetlands is proposed nor will any result.

The policies that give effect to the above objectives are consistent with those which are assessed in Sections 6.4.4.2 - 6.4.4.5 above. Furthermore, the Project is particularly consistent with general Policy E3.3 (1) which seeks to avoid significant adverse effects, and avoid where practicable or otherwise remedy or mitigate other adverse effects. Policy E3.3 (4) directs restoration and enhancement actions to:

- (a) *be located as close as possible to the subject Site;*
- (b) *be 'like-for-like' in terms of the type of freshwater system affected;*

(c) preferably achieve no net loss or a net gain in the natural values including ecological function of lakes, rivers, streams or wetlands;

Overall, the Project is consistent with the relevant objectives and policies of Chapter E3.

6.4.4.11 Chapter E7. Taking, using, damming, and diversion of water and drilling

The relevant objectives and policies for Chapter E7 are contained in Chapter E1, E2 and D8 of the AUP and have been considered above and are not repeated here.

6.4.4.12 Chapter E8. Stormwater - Discharge and diversion

The relevant objectives and policies for Chapter E8 are contained in Chapter E1 and E2 of the AUP and have been considered above and are not repeated here.

6.4.4.13 Chapter E11. Land disturbance- regional

The relevant objectives of the regional earthworks provisions aim to protect the safety of people and avoid, remedy or mitigate adverse effects from land disturbance including soil conservation.¹⁴⁹ There are seven relevant policies that give effect to the above objectives and the Project is in accord with these as following:

- Appropriate erosion and sediment control measures in accordance with the Auckland Council GD05 will be in place prior to and during earthworks. Following the engagement of the contractor, a CEMP will be prepared for the Project's construction activities including details of the Site-specific erosion and sediment controls and the earthworks methodology.¹⁵⁰
- During the design phase of the Project, consultation with relevant iwi groups has been undertaken and comments from iwi have been incorporated into the Project. This includes the adoption of an accidental discovery protocol to provide for any cultural or archaeological finds during earthworks and the provision of erosion and sediment controls being in place during earthworks.¹⁵¹
- The proposed earthworks are an integral part of the overall Project that will provide for social, economic and cultural well-being of people and communities both during construction and once operational.¹⁵²
- The 'light-touch' design approach means that the proposed earthworks have been designed to minimise the amount of disturbance, avoid wetlands and, as far as

¹⁴⁹ Objectives E11.2(1)-(3)

¹⁵⁰ Policies E11.3 (1)-(2)

¹⁵¹ Policy E11.3 (3)

¹⁵² Policy E11.3 (4)

practicable, avoid the disturbance and removal of vegetation within SEAs and disturbance of streams and riparian vegetation.¹⁵³

- The proposed earthworks, including the recontouring of land, will not result in any land instability effects and will have acceptable effects on the receiving environment through appropriate avoidance and mitigation measures as set out in the draft CEMP.¹⁵⁴

6.4.4.14 Chapter E12. Land disturbance – district

The relevant objectives and policies of the district land disturbance provisions provide similar policy direction to protecting human health and avoid, remedy or mitigating adverse effects on the environment similar to the regional provisions discussed above (Section 6.4.4.13).

The key difference is that the district provisions include policy direction around managing construction noise, vibration, dust, lighting, and traffic effects in relation to the proposed earthworks. The Project is consistent with the relevant objectives and policies for the following reasons:

- The construction related activities including erosion and sediment controls, dust, lighting and traffic effects will be appropriately managed by a CEMP to be refined following engagement of the contractor. Additionally, the Noise Report has confirmed that the construction related noise and vibration from the Project will comply with the AUP limits for the zone.¹⁵⁵
- The Project is consistent with all other policies as assessed under the regional earthworks provisions above.¹⁵⁶

6.4.4.15 Chapter E15 Vegetation Management and Biodiversity

Maintaining or enhancing the contiguous indigenous vegetation cover and restoring and enhancing indigenous biodiversity in degraded areas are the key focus of Chapter E15. There are seven policies that give effects to these objectives and the Project is consistent with these policies for the following reasons:

- Contiguous areas of indigenous vegetation within the Site, in particular within wetlands, riparian margins and SEAs, have been avoided as far as practicable. Where the Site requires removal within these areas for connection and functionality requirements, the design has been finetuned to minimise impacts. In addition, the

¹⁵³ Policy E11.3(5)

¹⁵⁴ Policies E11.3(6)-(7)

¹⁵⁵ Objective 12.2 (1) and Policies (2)

¹⁵⁶ Policies (1), (3)-(6)

extensive enhancement and restoration planting proposed will result in an increased area of contiguous indigenous vegetation on the Site.^{157 158}

- The change in land use from rural production to open recreation, retirement of pasture and the displacement of stock from the Site will greatly improve the wider environment inclusive of its ecological integrity and function.¹⁵⁹
- As previously mentioned, the Project recognises and provides for the management and control of kauri dieback as a means of helping to maintain indigenous biodiversity. This is primarily achieved through all Kauri within the Project area being treated as affected and managed in accordance with the current biosecurity guidelines provided by MPI and Auckland Council. Where dead trees are located in bush areas to remain unmodified, no tree removal will occur, so as to minimise the future spread of the disease within the Project area.¹⁶⁰
- Ecological and Restoration Management Plans will be implemented on the Site. This will document appropriate vegetation maintenance procedures and methodologies. This will be submitted to council for certification prior to the Site's operation.¹⁶¹

6.4.4.16 Chapter E23. Signs

The proposed signs that are associated with the Project are considered to be a comprehensive development sign.¹⁶²

The relevant objectives¹⁶³ and policies that relate to comprehensive development signs aim to enable appropriate comprehensive development signage that contribute to the social and economic wellbeing of communities through place identification and appropriately managed signs to maintain traffic, pedestrian safety, and the visual amenity of the surrounding environment.¹⁶⁴

The proposed signs will be designed and located so that pedestrian or traffic visibility is not blocked to ensure traffic and safety effects are maintained. The proposed signs will be

¹⁵⁷ Objective E15.2 (1),(2) and Policies E15.3 (1)-(3) and (7)

¹⁵⁸ Policy E15.3 (2) & (3)

¹⁵⁹ Policy E15.3 (5)

¹⁶⁰ Policy E15.3 (8)

¹⁶¹ Policy E15.5 (6)

¹⁶² AUP defines comprehensive development signs as: signage relating to a new building or the alteration of an existing building where the building or alteration requires a resource consent and/or building work to the value of at least \$100,000, assessed at the time a building consent application is lodged with the council.

¹⁶³ Objective E23.2 (1) and (2).

¹⁶⁴ Policy E23.3 (1) and (4)

designed in similar colours, fonts and concepts used for the overall development to ensure a consistent design language is used for the overall development.¹⁶⁵

Lighting of signage is to be confirmed during detailed design and if any lighting is proposed for signs it will not be in colour, or of such brightness or location so as to have any potential glare effects on drivers or the environment.¹⁶⁶

6.4.4.17 Chapter E24. Lighting

The AUP objectives that relate to lighting aim to enable artificial lighting for the security and safety of people and Property¹⁶⁷ and aim to limit the effects of outdoor lighting on the environment and safety of road users.¹⁶⁸

Although a detailed lighting plan for the development is not yet available, preliminary advice from LDP (Lighting and Illumination Specialists) confirms that a lighting design can be developed in line with the objectives above and the two relevant policies since:

- All lighting fixture types will be selected for all associated facilities during detail design to comply with the relevant permitted activity AUP lighting rules that relate to the Rural – Rural Production Zone¹⁶⁹; and
- The proposed areas of lighting are sufficiently separated from the road and any neighbouring residential dwellings to adequately minimise glare or traffic safety effects.¹⁷⁰

Confirmation of this advice will be provided shortly as an addendum to this application.

6.4.4.18 Chapter E25. Noise and vibration

For activities located within the Rural Production Zone, the relevant noise and vibration objectives aim to control activities occurring to ensure that people are protected from unreasonable noise vibration effects.¹⁷¹ The objective also require activities include methods to control effects from construction noise and vibration activities where they are not able to meet the relevant construction noise and vibration standards.¹⁷²

¹⁶⁵ Policy E23.3 (2) and (5)

¹⁶⁶ Policy E23.3 (4).

¹⁶⁷ Objective E24.2(1)

¹⁶⁸ Objective E24.2 (2)

¹⁶⁹ Policy E24.3 (2)

¹⁷⁰ Policy E24.3 (2)

¹⁷¹ Objective E25.2 (1)

¹⁷² Objective E25.2 (4)

Based on the assessment and conclusions provided in the Noise Report (Appendix 15), the Project is consistent with the above objectives and the relevant policies that give effect to these objectives as:

- The operational and construction activities will comply with the relevant Rural – Rural Production Zone noise and vibration limits and the relevant construction noise and vibration limits;¹⁷³
- The proposed construction works are a significant distance from all nearby receivers. Construction noise may be audible at times but at a low level and of a character typical of normal rural farm machinery;¹⁷⁴
- The main operational noise of the development will be from maintenance machinery and members using the course and facilities. Noise from these sources would be at a very low level and not generally be audible at the closest receivers;¹⁷⁵
- Helicopter activity at most times will be at a low level of operations and noise modelling of the activity shows that the noise limits can readily be complied with. Due to the short duration and intermittent nature of this noise exposure, the effects of noise are considered reasonable; and
- Reverse sensitivity effects are avoided through locating activities on a sufficiently large Site separated from existing surrounding developments and established rural activities, and the roading environment. Additionally, the Project will not result in any adverse noise or vibration effects on existing infrastructure, including roading, or any existing rural production activities.¹⁷⁶

6.4.4.19 Chapter E27. Transport

The relevant transport objective aims to provide for safe and efficient parking, loading and access commensurate with the character, scale and intensity of the Rural Zone¹⁷⁷ while ensuring pedestrian safety and amenity along public footpaths is prioritised.¹⁷⁸

The Project is considered to be consistent with the relevant policies that give effects to the above objectives for the following reasons:

- The ITA (Appendix 16), provided as part of the application,¹⁷⁹ concludes that the traffic generation from the Project will have less than minor effects on the traffic network and

¹⁷³ Policies E25.3 (1), (4) and (10)

¹⁷⁴ Policies E25.3 (3) and (9)

¹⁷⁵ Policy E25.3 (9)

¹⁷⁶ Policies E25.3 (2) and (7)

¹⁷⁷ Objective E27.2 (4) and (6)

¹⁷⁸ Objective E27.2 (5)

¹⁷⁹ Policy E27.3 (2)

will not detrimentally affect the existing safety record and the local roading network can readily accommodate the Project's traffic generation;¹⁸⁰

Parking

- The Project design includes provision of carparks in excess of the minimum number required under the AUP ¹⁸¹ for the nature of the activities proposed on Site; and
- The location and type of parking and loading spaces within the Site will provide for the safe, efficient, and effective operation of the vehicles within the Site while providing for the operational requirements of the Site.¹⁸²

Servicing

- The Project complies with AUP loading requirements.¹⁸³

Design of Parking and Loading

- Parking and loading areas have been located away from the adjoining Sites and Muriwai Road and are to be appropriately landscaped to ensure amenity effects are avoided while providing for safe access for all users;¹⁸⁴ and
- Sufficient onsite areas are provided so that reverse manoeuvring does not result.¹⁸⁵

Access

- The proposed access locations enable the safe, effective and efficient movement to and from the Site while also generally meeting the minimum design requirements and sightlines.¹⁸⁶

6.4.4.20 Chapter E30. Contaminated land

The relevant objective¹⁸⁷ of Chapter E30 aims to manage the discharge of contaminant from contaminated land into air, water or onto or into land to protect human health and enable land to be used for suitable activities in a sustainable way.

The Project is consistent with the policies that give effect to this objective as:

¹⁸⁰ Policy E27.3 (1)

¹⁸¹ Policy E27.3 (8)

¹⁸² Policy E27.3 (3)

¹⁸³ Policy E27.3 (15)

¹⁸⁴ Policy E27.3 (17)

¹⁸⁵ Policy E27.3 (18)

¹⁸⁶ Policy E27.3 (20) and (21)

¹⁸⁷ Objective E30.2 (1)

- The PSI and DSI undertaken has identified historical HAIL activities and the extent of potentially contaminated land area within the Site.¹⁸⁸
- Any works within the potentially contaminated areas will be disturbed or remediated in a manner that does not impact human health by following the recommendations made in the DSI. The primary mechanism for addressing the potential effects associated with disturbance of contaminated land is through provision of a CEMP during construction and a SOMP during ongoing operations.¹⁸⁹
- The Project will avoid adverse effects on potable water by there being no operational discharges that have potential to impact potable water quality in the rural zone. Further, adhering to the SOMP and relying on the landscape assessment overall, the Project will avoid, remedy and mitigate significant adverse effects on ecological values, water quality, human health and amenity values.¹⁹⁰

6.4.4.21 Chapter E36. Natural hazards and flooding

The relevant objectives of E36.2 aim to control development outside urban areas to:

- Ensure significant adverse effects from natural hazards are avoided to people and Property;¹⁹¹
- Maintain the conveyance function of floodplains and overland flow paths;¹⁹² and
- Utilise natural features and buffers to manage natural hazards.¹⁹³

The Project is consistent with the relevant policies that give effect to the objectives above as:

General and land instability

- No buildings are proposed in any areas on the Site considered prone to flooding.¹⁹⁴
- Land instability within the Site has been identified in Project-specific Geotechnical Reports (Appendix 4), and mitigation measures will be provided as recommended in the respective reports.¹⁹⁵
- The construction and operational aspects of the Project will be designed in consideration of the existing flooding areas and overland flow paths and the matters

¹⁸⁸ Policies E30.3 (1) and (2)

¹⁸⁹ Policies E30.3 (2)(d-g)

¹⁹⁰ Policy E30.3 (2)(c)

¹⁹¹ Objective E36.2 (1)

¹⁹² Objective E36.2 (5)

¹⁹³ Objective E36.2 (6)

¹⁹⁴ Policy E36.3 (25)

¹⁹⁵ Policies E36.3 (1) and (31-33)

identified in Policy E36.3 (3) (a-k) through ESCP measures and locating buildings outside of flood and pathways of overland flow paths.¹⁹⁶

- Following a detailed geotechnical and dam safety assessment (Appendix 4), the preliminary design of the water storage reservoir has been confirmed as meeting the necessary requirements, and the final design, construction and operation of this off-stream dam facility will be undertaken in accordance with the recommendations set out in this report.

Floodplains - general

- Project activities within floodplains are limited to minor earthworks and a water intake structure. These will not exacerbate flooding effects on the environment in relation to all matters outlines in Policy E36.3 (4)(a-d);¹⁹⁷
- Ecological enhancement through replanting within and around wetlands and stream beds are proposed to enhance amenity values, green linkages and ecological values.¹⁹⁸
- All proposed accessways to the Site from the Muriwai Road will be constructed in a manner that will not exacerbate flood hazard risk to the Site or wider area. ¹⁹⁹

Overland flow paths

- As set out in the Engineering Infrastructure Report (Appendix 5), the function and capacity of overland flow paths over the Site will maintained by ensuring the entry and exit points remain the same as existing, while ensuring damage to any Property is avoided.²⁰⁰

6.4.5 Section 104(c) – Other matters

Section 104(1)(c) of the RMA states that the consent authority must consider any other matters it considers relevant and reasonably necessary to determine this application. Other matters relevant for consideration when making a determination on the application are:

- Te Kawerau ā Maki Resource Management Statement 1995;
- Wildlife Act 1953;
- Heritage New Zealand Pouhere Taonga Act 2014;

¹⁹⁶ Policies E36.3 (3) and (16)

¹⁹⁷ Policies E36.3 (4) and (21)

¹⁹⁸ Policy E36.3 (24)

¹⁹⁹ Policy E36.3 (26)

²⁰⁰ Policy E36.3 (29) and (30)

- The Auckland Plan 2050;
- Auckland Long-term Plan 2021-2031 (Our Recovery Budget); and
- Auckland Sport and Recreation Strategic Action Plan 2014-2024 (refreshed 2017).

The matters relevant to the Project contained within each of the above are summarised below.

It should be noted that any authorisations required under other legislation have not been applied for as part of this RMA application and will be applied for at the appropriate phase of the Project.

6.4.5.1 Te Kawerau ā Maki Resource Management Statement 1995

As summarised in the Te Kawerau ā Maki CIA, the Te Kawerau ā Maki Resource Management Statement (1995) (“IMP”) was lodged with Council explicitly as an iwi authority planning document. The IMP describes the continuing role of Te Kawerau ā Maki as kaitiaki (guardians) and provides policies to guide statutory authorities and applicants, including:

- Policy 2.2(2) which promotes the integration of Te Kawerau ā Maki tikanga in resource management, while clause (3) requires engagement by all agencies within the rohe to help give effect to the kaitiaki role of the iwi.
- Policy 4.1.2(3) which requires that cumulative effects upon Te Kawerau ā Maki are fully recognised and provided for.
- Policy 4.2.2 concerns Te Kawerau ā Maki cultural heritage and requires the protection of all heritage Sites including access requirements (Policy 4.2.2(1)); the involvement of Te Kawerau ā Maki in all instances where potential effects may arise (Policy 4.2.2(2)); and the recognition of Te Kawerau ā Maki cultural and spiritual values (Policies 4.2.2(3 and 4)).
- Policy 4.3.2 concerns the management of kōiwi, while Policy 4.4.2 regards the management of water. Activities in the Coastal Marine Area are covered by Policy 4.5.2.
- Waste management policies are described in Policy 4.6.2 and land and landscape policies are set out in Policy 4.7.2.
- Indigenous flora and fauna policy settings are described in Policy 4.8.2 including opposition to all destruction of native flora and fauna without Te Kawerau ā Maki written consent.
- Policy 4.9.2 concerns Te Kawerau ā Maki participation in design of the built environment and interpretation of heritage.

- The IMP also details formal support and adoption of the 1993 Mataatua Declaration on cultural and intellectual Property rights of indigenous peoples.

With respect to giving effect to the relevant matters of the IMP, Section 7 of this AEE describes the engagement undertaken with Te Kawerau ā Maki which led to a Memorandum of Understanding between this iwi and the Applicant being put in place, as well as Te Kawerau ā Maki representatives preparing a CIA for the Applicant's Project. Section 5.3 of this AEE, sets out the mitigation and management measures that will be incorporated into the Project to ensure that any adverse effects on the cultural values and interests of Te Kawerau ā Maki are appropriately provided for.

6.4.5.2 Wildlife Act 1953

As identified in the Ecology Report (Appendix 11), the Site provides habitat for native lizards and bats, which are protected under the Wildlife Act 1953.

To avoid and minimise adverse effects on native lizards, lizard-sensitive clearance protocols will be adopted. If these are not achievable prior to earthworks commencing, a preclearance lizard survey will be undertaken by a DOC-permitted herpetologist to determine if native lizards are present within areas of vegetation clearance.

To avoid and minimise adverse effects on bats, this is usually achieved by a pre-clearance Site survey and, if necessary, relocation of bats if roosts are substantial or permanent. Additional surveys will be undertaken to determine the need or otherwise for Wildlife Act authorisations in relation to bats.

The Applicant is committed to securing and abiding by all necessary authorisations that may be required under the Wildlife Act 1953.

6.4.5.3 Heritage New Zealand Pouhere Taonga Act 2014

The purpose of the Heritage New Zealand Pouhere Taonga Act 2014 ("**Heritage NZ Act**") is to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand and requires decision-makers to recognise a set of principles including that the identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage should take account of all relevant cultural values, knowledge, and disciplines; take account of material of cultural heritage value and involve the least possible alteration or loss of it; safeguard the options of present and future generations; be fully researched, documented, and recorded, where culturally appropriate; and there should be recognition of the relationship of Māori and their culture and traditions with their ancestral lands, water, Sites, wāhi tūpuna, wāhi tapu, and other taonga.

As set out in Section 5.4 of this AEE, there are a number of recorded Sites (under the Heritage NZ Act) within the Project footprint, along with the potential for unrecorded Sites. While taking a 'light-touch' approach to disturbance activities, there is the potential that

some Sites may be impacted by the Project. On that basis, and at a timeframe in advance of any disturbance works commencing, the Applicant will seek the necessary archaeological authority under the Heritage NZ Act to lawfully undertake works which modify, destroy and / or disturb historical Sites.

Acknowledging the historical cultural significance of the Site and the wider Muriwai area, through its engagement with iwi, the Applicant has agreed to the provision of an accidental discovery protocol as part of the construction management for the Project. Iwi will also have a kaitiaki role in the Project to ensure that their values and interests are identified and appropriate provided for throughout the Project.

6.4.5.4 Auckland Plan 2050

The Auckland Plan 2050 sets a high-level direction for managing population growth and the environment in Auckland.

Of the six key outcomes identified in the Auckland Plan, the following are most relevant to the Project:

- Māori identity and Wellbeing – A thriving Māori identity is Auckland’s point of difference in the world – it advances prosperity for Māori and benefits all Aucklanders;
- Environment and Cultural Heritage – Aucklanders preserve, protect and care for the natural environment as our shared cultural heritage, for its intrinsic value and for the benefit of present and future generations; and
- Opportunity and Prosperity – Auckland is prosperous with many opportunities and delivers a better standard of living for everyone.

The Project will contribute to these outcomes in the following ways:

- Māori identity will be enhanced and showcased through iwi design inputs which will gain local and international exposure through the users of the Site.²⁰¹
- The Project has also been developed in conjunction with Mana Whenua with all efforts made to identify, respect and celebrate cultural identity, heritage and wellbeing.
- Like the golf course design, a similar ‘marquee’ or exemplary approach has been taken to the environmental effects of the Project. There has been an overall focus on net positive outcomes for the Site and wider environment with a specific focus on minimising impact on the environment, particularly in areas of high ecological, cultural and environmental value. The Project includes a significant amount of restoration and enhancement planting and works across the Site. Overall, the Project will result in a

²⁰¹ It is highlighted here that iwi have already been working with the Applicant’s architects in this respect.

positive environmental legacy both within the Site and the wider environment in which it is located.

- The Project will provide opportunity and prosperity not only through the tourism industry (the benefits of which are discussed at Economic Assessment (Appendix 17) and through local vendors but through the establishment of a Sports Academy and training programmes, and through ongoing direct and indirect employment associated with the development.

6.4.5.5 Auckland Long-term Plan 2021-2031 (Our Recovery Budget)

The Auckland Long-term Plan 2021-2031 (Our Recovery Budget) (“**LTP**”) is Auckland Council’s 10-year Budget 2021-2031, otherwise known as the Council’s Long-term Plan for that period. Part of the purpose of an LTP is to set out the Council’s activities and the community outcomes it aims to achieve for the term of the plan and outline proposed budgets, strategies and policies.

Of the key issues set out in the LTP those most relevant to the Project are:

- Natural environment and water quality programmes; and
- Focusing on better delivery of Māori outcomes.

As discussed throughout this AEE, the Project has been designed to provide a ‘Marquee’ golf course development and supporting services along with overall, net positive outcomes for the environment including outcomes related to cultural values and interest of the Site and wider area.

Overall, to the extent it is relevant, the Project is not contrary to the outcomes of the LTP.

6.4.5.6 Auckland Sport and Recreation Strategic Action Plan 2014-2024 (refreshed 2017)

The Auckland Sport and Recreation Strategic Action Plan 2014-2024 (“**Sport Action Plan**”) sets out a strategic direction with action to guide the future planning and delivery of recreation and sport opportunities in Auckland and to promote individual and community wellbeing through participation and excellence in sport and recreation.

The Sport Action Plan identifies four ‘Priority Areas’ which will help achieve the shared vision of “Aucklanders: more active, more often”. The four priority areas are:

- Participation - More Aucklanders living physically active lives through participation in informal physical activity, recreation and sport.
- Infrastructure - Access to open spaces, harbours, coastlines, waterways and a fit-for purpose network of facilities that enable physical activity, recreation and sport at all levels.

- Excellence in sport and recreation – Pride is built in Auckland’s recreation and sport achievements and strong sporting culture, and talent and excellence are supported and celebrated
- Sector development - A strong and capable sector that delivers quality recreation and sport experiences in a sustainable way and contributes to Auckland’s economy.

For each priority area there is a set of actions which will help to achieve the shared vision.

Regarding the Project, the following matters are relevant:

- While acknowledging the target market for the main golf course on the Site is international and high-end private memberships, the use of golf and tennis facilities at the Sports Academy will be open to the public and will contribute to promoting a healthy and more active lifestyle to those who use it;
- The development will provide improved connections to open space and the natural environments within the Site for its users and also iwi with a cultural association with the Site;
- The development will provide ‘Marquee’ status golf facilities, inclusive of the golf course and high-performance training centre, which will promote excellence in sport through encouraging and nurturing sporting talent and excellence in the field of golf by providing high-performance pathways to up and coming golfers;
- The status of the golf course will also enables it to attract major local, national and international tournaments thus making Auckland more desirable in a sport and recreation context;
- The development will provide opportunities for more people to be involved in coaching and organisational elements of the sport of golf through the high performance training centre;
- The development will provide additional employment opportunities in the golf sector including greens keeping, club and course administration, coaching and pro-shop, etc.

In summary, although the golf course will be available to club members only, the general public will have access to the sports academy’s golf training and tennis playing facilities. Therefore, when considered in an overall context, the Project sits well within the four identified priority areas under the Sport Action Plan.

6.5 SECTION 105 ASSESSMENT

Section 105(1) of the RMA provides that:

If an application is for a discharge permit or coastal permit to do something that would contravene Section 15 or Section 15B, the consent authority must, in addition to the matters in Section 104(1), have regard to –

- (a) *The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
- (b) *The applicant's reasons for the proposed choice; and*
- (c) *Any possible alternative methods of discharge, including discharge into any other receiving environment.*

The matters identified in (a), (b) and (c) are discussed below.

6.5.1 Nature of the Discharge and Sensitivity of the Receiving Environment

The nature of the discharges associated with the Project and the sensitivity of the receiving environment are set out in Section 2 and Section 3 of this AEE respectively and the effects of the discharges on those environments are detailed in Section 5 of this AEE

In summary, there will be no adverse effects on the receiving environment that are more than minor as a result of either the short-term or ongoing discharges associated with the Project.

6.5.2 Reasons for the Proposed Choice

The main driver for the need for the discharges associated with the Project is that there are no reticulated stormwater or wastewater networks within the vicinity of the Site to which the development can connect to, given the rural nature of the Site. Given this is the starting point:

- The stormwater collection, treatment and discharge system has been designed to adhere to Auckland Council's Stormwater Management Devices in the Auckland Region GD01 guidelines. Runoff from carparks and roads, where practical, will be treated with at-source green infrastructure treatment devices, constructed upstream of discharge points. Proposed bioretention treatment devices include vegetated swales, filter strips, and rain gardens. The SOMP will ensure all stormwater from high activity impermeable areas will be treated following best practice guidelines, before being discharged back to the environment, and thus resulting effects on water quality are likely to be no more than minor.
- The onsite wastewater system have been designed to treat all wastewater generated onsite to a tertiary level prior to discharge to land in a manner that will not result in any adverse effects on the receiving environment that are more than minor.

6.5.3 Alternative Methods of Discharge

The Project, including the discharge / runoff collection and treatment system has been carefully designed, and an in-depth assessment has been carried out to ensure the best method and systems are put in place as set out in the Engineering Infrastructure Report (Appendix 5).

Alternative methods for stormwater and treated wastewater discharge were generally considered as part of the concept design process. All alternatives involved lesser degrees of treatment, and in the case of wastewater, different discharge locations that were generally closer to sensitive receiving environments including groundwater table, wetlands and streams as confirmed in the Ecology Report.

Overall, the treatment and discharge methods proposed are considered optimal from an environmental perspective.

6.6 SECTION 107 ASSESSMENT

Section 107 of the RMA restricts the grant of a discharge permit which may result in a contaminant (or contaminants) entering water if, after reasonable mixing, the contaminant of water discharged is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; or
- Any significant adverse effects on aquatic life.

Overall, as described in the effects assessments set out in Section 5 of this AEE, the proposed discharges of stormwater and treated wastewater will not result in any of the above effects in receiving environments. Accordingly, the Project is considered consistent with section 107 of the RMA.

6.7 PART 2 OF THE RESOURCE MANAGEMENT ACT 1991

All of the matters specified in section 104 of the RMA to which the consent authority must '*have regard to*' are subject to Part 2 of the RMA which sets out the purpose and principles of the Act and which are central to the determination of the applications for resource consent made by Auckland Council.

Following recent direction from the Courts, when making a decision on an application a consent authority is generally no longer required to consider Part 2 of the RMA beyond its expression in the relevant statutory planning documents, unless it is appropriate to do so. In this case, it is considered that the planning context is clear, and that the proposed activities align well with the various planning directions set out earlier. However, for completeness, and in accordance with Schedule 4(2)(1)(f) of the RMA, Part 2 of the RMA is considered, at a high-level, in the following paragraphs.

With respect to the key matters in section 6, 7, and 8 of the RMA, the following points are pertinent:

- The Project has been designed to ensure that, where areas of outstanding or significant values cannot be avoided, the 'light-touch' approach means that any adverse effects will be no more than minor and will, in many cases, result in enhancement of these, and other environments, across the Site (s6 (a) – (c) and (f) and s7(d) and (f));
- The proposed change of land use for the Site, from rural production to sport and recreation, is considered an efficient use of land in the rural zone as it has primarily avoided the use of 'prime' soils while also being complimentary to the remaining rural activities onsite (s7(b));
- The relationship of Māori and their culture and traditions has been provided for through consultation undertaken, and through the culturally specific mitigation and management measures proposed (s6(e) and 7(a)); and
- Principles of the Treaty of Waitangi will be met as:
 - To the extent possible, iwi groups have been engaged in the development of the Project and iwi will have an active and ongoing role, as kaitiaki, in the Project;
 - The Project will include a range of environmental enhancement initiatives that will benefit both the natural and cultural environments; and
 - The development will not compromise any identified Sites and places of significance or value to Mana Whenua (Section 8).

Overall, it is considered that the Project will promote the sustainable management of natural and physical resources in accordance with Part 2 of the RMA (noting that Part 2 of the RMA is not being explicitly relied upon, given the full coverage of relevant resource management issues provided in the other relevant statutory planning documents).

The granting of consent for the Project is consistent with and gives effect to the purpose of the RMA.

6.8 SUMMARY

After considering all those matters relevant under Part 2 and sections 104, 104D, 105 and 107 of the RMA, granting the resource consents with appropriate conditions would promote the purpose of the Act and would constitute sustainable management of natural and physical resources for the following reasons:

- It allows the use of natural and physical resources in a way which enables people and the community to provide for their social, cultural and economic well-being;
- It sustains the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;

- It safeguards the life-supporting capacity of air, water and soil, and ensures that adverse effects are appropriately avoided, remedied or mitigated; and
- It is demonstrably consistent with the relevant planning documents, including the NESFW, NPSFM and the AUP. Of particular importance, the discharges and disturbance activities will remain fully protective of wetlands and predominantly protective of stream values of indigenous terrestrial ecosystems on the Site.

The Project will provide a valuable asset to the Auckland region which will showcase the region and what it has to offer both nationally and internationally. It will also result in demonstrable positive effects in terms of sustaining the social and economic wellbeing of that community and further afield through the costs associated with the construction of the development and the ongoing employment. Any adverse effects will be no more than minor and will be appropriately avoided, remedied or mitigated, or in the case of stream and stream values, offset. Additionally, across all environmental elements, effects will be managed through various mitigation and management measures as set out in the technical reports, and proposed management plans, summarised in this AEE.

Overall, it is considered that, subject to the imposition of appropriate conditions, granting of the resource consents as sought would ensure adverse effects on the environment as a result of the Project can be managed so as to be acceptable, and noting the potential ecological and environmental improvements the Project is capable of achieving, would, without a doubt, promote the sustainable management of natural and physical resources.

7. CONSULTATION

7.1 CONSULTATION APPROACH

Although consultation is not a legal requirement under the RMA, it is universally regarded as ‘good practice’. Accordingly, from very early on in the Project’s development, the Applicant has adopted and promoted an active and open engagement approach with the local Muriwai community and its leaders.

The following key principles have informed the Applicant’s overall consultation approach:

With respect to Mana Whenua:

- Identify and engage with relevant Mana Whenua, their representatives and associated kaumātua / kuia very early on in the process;
- Through preferred face-to-face interactions, foster meaningful relationships based on good faith, mutual respect, understanding and trust;
- Promote the search for partnership-type opportunities where the applicant and Mana Whenua can work together on common cultural or environmental objectives;
- Investigate and facilitate opportunities for Mana Whenua to exercise kaitiakitanga;
- Investigate opportunities for future employment for tangata whenua, particularly rangatahi;
- Seek advice on all cultural matters and encourage and support the “in-house” preparation of CIA; and
- Maintain ongoing contact by providing updates and seeking feedback as the Project developed.

In respect of other key community stakeholders and organisations:

- Identify and engage with individuals and organised groups who may be potentially affected by the Project or have strong interests in it;
- Identify and engage with individuals and organised groups that have strong connections with the local community or connection networks within it;
- Introduce the Project concept to these stakeholders at an early stage and seek initial feedback; and
- Re-engage with these stakeholders once the Project description was confirmed and the Project team had a better understanding of potential environmental effects.

7.2 PARTIES CONSULTED, CONSULTATION ACTIVITIES AND OUTCOMES

A summary of consultation activities undertaken with specific parties is presented below.

7.2.1 Te Kawerau ā Maki

Consultation Activity Summary

Consultation was initiated between the Applicant and Te Kawerau ā Maki via Chairman, Te Warena Taua, in October 2020. This included some introductory communications and a hui. Since this time, and prior to Covid restrictions, a further eight face-to-face interactions occurred with Mr Taua and various staff and advisors. These interactions included Site visits and hui. Since Covid restrictions have been in place, two Zoom meetings have also been held. The main purpose of these engagements were to:

- re-familiarise Te Kawerau ā Maki with the Property and its natural features;
- understand the cultural context of the Property and its surrounds;
- understand the importance of the Property to Te Kawerau ā Maki;
- facilitate opportunities for Te Kawerau ā Maki to have input into the Project's design;
- more generally, explore Te Kawerau ā Maki potential involvement in the Project and facilitate this as appropriate, and
- to build and enhance the relationship between the Project and Te Kawerau ā Maki so that it endures.

In addition, there have been numerous emails and texts between Te Kawerau ā Maki and the Applicant, covering a wide range of topics. These communications, while mostly associated with the Project, were at times focussed solely on relationship building.

Consultation Outcomes

The most significant outcomes achieved or observed from the Applicant's consultation with Te Kawerau ā Maki include:

- The signing of a Memorandum of Understanding ("**MoU**") between the Applicant and Te Kawerau ā Maki;
- Te Kawerau ā Maki having an active and important advisory role in the design of the Project's main built elements. In this respect, Te Kawerau ā Maki promoted, to the Applicant's architects, a number of specific building design considerations that would appropriately respect and honour certain culturally important landmarks and Sites potentially visible to people within the buildings. Other advice was given on how the design could recognise, highlight or protect certain cultural concepts and whakapapa;
- Te Kawerau ā Maki's set of cultural design guidelines for the Project team and architects which forms Appendix A of their CIA (Appendix 21). A number of the cultural design concepts have been incorporated into the built form design for the Lodge and Clubhouse (for example the use of water and pools at the Lodge) and will be referred to further during subsequent building and landscaping design stages;

- Te Kawerau ā Maki gifting of a “placeholder” cultural pattern for the Applicant to use on feature walls of buildings within the development. Te Kawerau ā Maki has also committed to develop, for the Applicant’s use, a specific cultural pattern symbolic of the Site’s history and location;
- Te Kawerau ā Maki arranged and proffered a CIA (see Appendix 21); and
- More generally, both parties’ commitment to maintain and enhance their relationship in accordance with the spirit of the MoU by continually seeking out opportunities to advance Māori culture as part of the development and to improve the overall connection Te Kawerau ā Maki has with Project and with the whenua.

7.2.2 Ngāti Whātua o Kaipara

Consultation Activity Summary

Consultation with Ngāti Whātua o Kaipara began with introductory communications from the Applicant to Chairwoman, Dame Naida Glavish on 16 October 2020. The Applicant and Dame Naida’s assistant then worked to set up an initial hui. Unfortunately, the March 2021 Covid lockdown meant the hui had to be held via Zoom. Nevertheless, it was a productive session and resulted in follow-up discussions between the Applicant and the Ngāti Whātua o Kaipara’s CEO (at that time). Arrangements were then made for a face-to-face hui which took place at the Ngāti Whātua o Kaipara offices on 19 March 2021. At this hui, both parties discussed their respective aspirations. A number of topics were also canvassed, including:

- Conceptual Project description and estimated Project timeframes;
- Interactions to date with wider Ngāti Whātua interests (further details below);
- Consultation activities with Te Kawerau ā Maki;
- The Applicant’s desire to involve Ngāti Whātua o Kaipara more in the Project;
- The prospect of confirming the parties’ respective Project and ongoing relationship objectives through an MoU; and
- The prospect of Ngāti Whātua o Kaipara preparing a CIA in relation to the Project.

After the meeting, and as agreed, the Applicant provided a draft MoU to Ngāti Whātua o Kaipara for its consideration, and formally requested a Project for a CIA.

On 13 May 2021, a Site visit took place with members of the Ngāti Whātua o Kaipara environmental team and kaumātua. This provided an opportunity for the Applicant to show Ngāti Whātua o Kaipara staff around the Site and for the Applicant to learn more about some of the history of its features.

On 1 June 2021 a follow-up hui was held at the Ngāti Whātua o Kaipara offices to advance the korero. The matters discussed included the proposed MoU, preparation of a CIA,

updated Project plans, golf course routing, Kauri dieback prevention, eco-sourcing for native planting and earthworks management.

Despite best efforts, the Covid lockdown in Auckland has meant that the process has not been able to progress as the Applicant anticipated, but with restrictions easing at the time of writing, it is anticipated dialogue will soon be able to recommence.

Consultation Outcomes

The Applicant confirms and is committed to further engagement with Ngāti Whātua o Kaipara about the Project, seeking their inputs, and encouraging their involvement in it, to the extent Covid restrictions allow, and as things move forward.

Wider Ngāti Whātua engagement

The Applicant's engagement with wider Ngāti Whātua interests was initiated around February 2020. Initial interactions included various hui and Site visits. A blessing was also held at the Property.

7.2.3 Other Mana Whenua

In addition to the focused Mana Whenua consultation summarised above, the Applicant has also recently written to the following Mana Whenua to advise them of this Project, summarise the Applicant's Mana Whenua engagement to date, confirm the Lodgement timeframe for the consent application and invite any feedback:

- Te Kawerau a Maki
- Ngāti Whātua o Ōrākei
- Ngāti Manuhiri
- Ngāti Maru
- Ngāti Te Ata Waiohua
- Te Ākitai Waiohua
- Te Rūnanga o Ngāti Whātua
- Ngāi Tai ki Tāmaki
- Ngāti Paoa Iwi Trust
- Ngāti Paoa Trust Board
- Ngāti Tamaoho
- Ngāti Tamaterā
- Ngāti Whanaunga
- Te Ahiwaru Waiohua; and

➤ Te Patukirikiri.

7.2.4 Muriwai Golf Club

The Applicant's first meeting with the Muriwai Golf Club was held on 24 November 2020. The main purpose of this meeting was to introduce the Project and seek feedback. Initial feedback was extremely positive. The Muriwai Golf Club recognised various potential indirect benefits associated with the Project's attraction of additional domestic and international tourists, and in particular, golf tourists, to the area. The Muriwai Golf Club did express some concern regarding freshwater allocation. In this respect, they requested the Project's water supply be designed to enable the Muriwai Golf Course's to exercise their own water take consent unhindered. As described in Section 5, the Applicant's proposed high-flow surface water take will achieves this.

Since these initial discussions, the Applicant has had several informal discussions with the Muriwai Golf Course manager who has been proactive in introducing the Applicant to other local community members.

Once face-to-face meetings are allowed again in the Auckland Region, the Applicant intends to re-engage with the Muriwai Golf Course and provide them with updated Project plans.

7.2.5 Muriwai Surf Club

The Applicant met with Muriwai Surf Club management on 12 December 2020 to introduce the Project. Although details regarding the design of the Project were not available at that time, there was general support expressed for the concept.

As with the Muriwai Golf Course, when Covid restrictions allow, the Applicant intends to engage again with Muriwai Surf Club to update them on the Project.

7.2.6 Muriwai Community Association

The Applicant met the chair of the Muriwai Community Association (Mr Simon Leitch) on 9 December 2020 to introduce the Project and to seek advice on how best to communicate the Project to the Muriwai community and get feedback. Mr Leitch expressed very strong support for the Project. The inclusion of a café, additional accommodation and ecological enhancement and restoration planting were particular aspects of the Project the wider community would likely support. Mr Leitch invited the Applicant to present the Project to the Association as part of one of their regular members meetings, and offered to introduce the Applicant to other community leaders. He also suggested meeting with the Muriwai Environmental Action Trust (MEACT) when the Project was more advanced.

The Applicant intends to meet with Muriwai Community Association and MEACT to present and discuss the updated Project plans when face to face meetings can be more readily accommodated in the Covid-19 framework.

7.2.7 Rodney Local Board & Local Politicians

The Applicant met with Rodney Local Board Chairperson Phelan Pirrie and Rural Advisory Panel Member Brent Bailey at Council's local offices on 8 December 2020 to discuss the Project and seek feedback. Both expressed support for the proposed ecological enhancements. They also commented on the current lack of accommodation in the local area, and the adverse impact this has on local businesses. Additionally, the need for additional cafe offerings in the area was seen as beneficial.

Other Project related topics were also discussed, including current businesses environment, traffic, infrastructure, tourism, people, activities, and challenges. No real concerns were expressed.

7.3 SUMMARY

Although the Applicant embarked on a consultation plan at the start of this Project that was appropriately aligned with the nature and scale of the Project, the ability to implement this desired consultation plan has been significantly thwarted by Covid (through the ability to meet face to face, and the delays it has caused to finalising the initial design for the Project). Nevertheless, the Applicant was still able to effectively progress consultation with Mana Whenua and introduce the Project to the community through key community organisations and leaders. The Applicant remains fully committed to continuing the consultation efforts in earnest when Covid restrictions allow. In this respect, the Applicant will:

- maintain dialogue with Te Kawerau ā Maki and Ngāti Whātua o Kaipara; and
- when the easing of Covid restrictions allow;
 - re-connect with other stakeholder listed above to update them on the Project and its environmental effects; and
 - share and discuss the Project vision and associated benefits and potential adverse impacts with other community members including adjacent neighbours.

Overall, it is considered the Applicant has adequately engaged with relevant stakeholders considering the circumstances.

8. CONCLUSIONS

This AEE has assessed applications being made by The Bears Home Project Management Limited to authorise the construction, operation and maintenance of an international standard 19 hole golf course, Sports Academy and luxury Lodge complex. The assessment presented has addressed the matters to be considered under sections 104, 104D 105 and 107 of the RMA (including Part 2 of the RMA).

The Project will require a range of resource consents under the AUP, NESCS and NESFW. When applying the 'bundling' approach for consenting purposes, the Project falls to be considered as a non-complying activity.

A detailed assessment of the application in respect of s104D concludes that, since the Project, overall, is not contrary to the relevant objectives and policies of the AUP, and the adverse effects on the environment associated with the Project are no more than minor, both gateway tests are deemed to be satisfied and the application is capable of being granted, subject to a section 104 assessment.

The actual and potential effects associated with the applications have been considered in accordance with section 104(1)(ab) of the RMA. This assessment confirms that:

- Following the effects mitigation initiatives proposed by the Applicant, and in the case of the culverting of stream P3 and the infilling of I9, the proposed off-setting measures, any adverse environmental effects associated with the Muriwai Golf Project will be no more than minor; and
- The Project will result in a raft of benefits including significant positive ecological effects and other positive cultural, economic, water quality, and soil related effects.

The Project has also been assessed as being generally consistent with the relevant provisions of applicable National Environmental Standards, regulations, National Policy Statements and the AUP in accordance with section 104(1)(b) of the RMA and other matters that relevant and reasonably necessary to determine the Application pursuant to 104(1)(c) of the RMA.

Overall, it is considered that, subject to the imposition of appropriate conditions, granting of the resource consents as sought will ensure adverse effects on the environment as a result of the Project can be mitigated or managed so as to be acceptable, and noting the significant ecological and environmental enhancements proposed, the Project will demonstrably promote the sustainable management of natural and physical resources.

To ensure the local community is provided an opportunity to offer their views on the Project, the Applicant requests public notification of the application.