To:	**Cabra**	**Date:**	30 November 2022
Attention	**Duncan Unsworth**	**Ref:**	66048
Subject:	**Cabra Whenuapai Fast Track – Ecology Assessment**		

Introduction

Cabra (**the applicant**) proposes to lodge an application for a referred project under the Covid-19 Recovery (Fast-track Consenting) Act 2020 (**the Act**) to utilise the fast-track consenting process. This application relates to three residential development and one light industrial development throughout four properties within Whenuapai, Auckland. This memorandum provides a high-level assessment of the ecological aspects of the proposal.

- 15 Clarks Lane (Site A; residential development)
- 10 Sinton Road (Site B; residential development)
- 16 Sinton Road (Site C; residential development)
- 90 Trig Road (Site D or Trig Road; light industrial development)

The following assessment is provided in respect of the National Environmental Standards for Freshwater 2020 (**NES-F**), National Policy Statement for Freshwater Management 2020 (**NPS-FM**) and the Auckland Unitary Plan – Operative in Part (**AUP OP**).

Methodology

Site assessment was undertaken by an experienced ecologist on the 28 September 2022. Botanic and terrestrial fauna values within the sites were qualitatively assessed. Fauna habitats assessed considered indigenous lizards, birds and bats.

Overland flow paths were classified under the AUP OP to determine, in accordance with the definitions in this plan, the artificial, ephemeral, intermittent or permanent status of these watercourses.

Potential wetland areas were classified and delineated following the Ministry for the Environment's (**MfE**) wetland delineation protocols[1], including vegetation assessments and wetland hydrology to determine whether the areas meet the definition of a 'natural wetland' as per the definitions and criteria laid out in the **NPS-FM**. Assessments were carried out within the Auckland region's 'growing season'[2].

Vegetation was assessed in accordance with the relevant MfE protocol[3]; based on the dominance and prevalence of:

- Obligate wetland vegetation (**OBL**) – almost always a hydrophyte, rarely in uplands;
- Facultative wetland (**FACW**) – usually a hydrophyte but occasionally found in uplands;
- Facultative (**FAC**) – commonly occurs as either a hydrophyte or non-hydrophyte;
- Facultative upland (**FACU**) – occasionally a hydrophyte by usually occurs in uplands; and
- Upland (**UPL**) – rarely a hydrophyte, almost always in uplands.

[1] Ministry for the Environment (2020). *Wetland Delineation Protocols.* Wellington: Ministry for the Environment.
[2] Ministry for the Environment (2021). *Wetland delineation hydrology tool for Aotearoa New Zealand*. Wellington: Ministry for the Environment.
[3] Clarkson, B. (2013). *A vegetation tool for wetland delineation in New Zealand*. Prepared for Meridian Energy Limited. Hamilton: Manaaki Whenua Landcare Research.

Where the dominance and/or prevalence tests showed unclear results, hydric soils and hydrology tests were undertaken in accordance with the associated protocol[2],[4].

Estuarine environments were visually assessed for the potential of coastal wetlands. Identified ecological features within the site are presented in Appendix I and Appendix II and photos of these features in Appendix V.

The ecological value of any potential aquatic habitat was then qualitatively assessed.

Existing Environment

Background and Ecosystem Classification

The sites are within the Tamaki Ecological District of the Auckland Region. Historically (pre-human), the four sites would have comprised of the forest ecosystem type 'Pūriri forest' (WF7) and would have supported a diverse range of invertebrates, amphibians, reptiles, birds and bats (Singers *et al*., 2017). WF7 ecosystems have a regional International Union for Conservation of Nature (**IUCN**) threat status of "Critically Endangered". Earliest historical aerials available indicate the sites and the surrounding landscape has been devoid of native vegetation and managed as agricultural land for at least 60 years (Appendix III & IV).

Currently, the sites are surrounded by agricultural land and predominately consist of pasture with mature exotic shelter belts established around the property boundaries and between the paddocks. Small number of rural dwellings and associated farm structures are present throughout each site. The sites do not support a recognised ecosystem type, as classified under the AUP OP: Biodiversity current extent, however Site C is subject to a narrow band of terrestrial Significant Ecological Area (SEA) along the north western boundary. Sites A, B and C are located on the coastline which contains the ecosystem type 'Mangrove Scrub' (SA1.2).

Terrestrial Ecology

The sites predominantly consist of pasture grasses with shelter belts of mature macrocarpa (*Hesperocyparis macrocarpa*), poplars (*Populus alba*) and weeping pine (*Pinus patula*) along the property boundaries. Additional vegetation throughout the four sites included recognised pest vegetation species, such as Sydney golden wattle (*Acacia longifolia*), woolly nightshade (*Solanum maurtianum*), and gorse (*Ulex europaeus*). Native vegetation throughout the properties was sparse, with the only indigenous vegetation observed within the riparian yard in Site A and the coastal boundaries, which included ponga (*Cyathea dealbata*), red matipo (*Myrsine australis*), karo (*Pittosporum crassifolium*) and mānuka (*Leptospermum scoparium*).

The botanical value of the vegetation within the sites was assessed to of low ecological value, consisting of predominantly pasture and exotic trees with sparsely located common, low-stature native trees. The vegetation provides low-quality fauna habitat as the habitat is of low stature, lacks ecological complexity and is subject to high edge effects and limited terrestrial connectivity.

[4] Fraser *et al*. (2018). *Hydric soils – field identification guide.* Report LC3223 prepared for Tasman District Council. Hamilton: Manaaki Whenua – Landcare Research.

Freshwater Ecology

Two streams, one natural wetland, and multiple artificial channels were identified within the four sites. The watercourses flowed in a general south to north direction and drained into a northern arm of the Hauraki Gulf.

The artificial channels were located within Trig Road, Site B and Site C, and were unnaturally straight and incised, and did not contain any natural portions from there headwaters to their confluence. No natural streams are evident within historical aerials at the locations of the artificial channels. No watercourses are present within the same vicinity as these artificial channels, and they were likely constructed to facilitate drainage. Flowing water was only present within the channel in Site B with dry leaf litter or weedy vegetation established within the Trig Road and Site C channels. The artificial channels in Site B and Site C drained into small intermittent streams, which both flowed for approximately 20 m before discharging directly into the Coastal Marine Area (**CMA**).

Within Site A, one permanent stream was present and drained directly out of a large wetland. The permanent stream has an average width of 0.65m and average depth of 0.15m with relatively good flowing water. Occasional macrophytes were present within the stream and an undersized culvert resulting in some localised pooling around the inlet. The wetland on the upstream reach of the permanent stream was dominated by hydric vegetation, including mercer grass (*Paspalum distichum*; FACW), taro (*Colocasia esculenta*; FACW), pūrei (*Carex secta*; OBL) and willow weed (*Persicaria maculosa*; FACW). This wetland was elongated and situated along the floodplain and the stream margins of the watercourse. Due to the clear dominance of FACW and OBL plant species the putative wetland area passed the rapid wetland vegetation test in accordance with the MfE wetland delineation protocols and latest MfE guidance[5]. The wetland contained typical wetland hydrology (e.g. standing water, high water table, soil saturation) at the time of assessment, meeting both primary (surface water) and secondary (drainage patterns) wetland hydrology indicators. It is likely the area contains sufficient hydrology to support a natural wetland year-round. The extent of the wetland could be clearly distinguished from the surrounding terrestrial area based on the contours, hydrology and clear demarcation between wetland vegetation and terrestrial vegetation. The surrounding areas of the wetland was dominated by rank pasture grasses. It is our assessment that the wetland within Site A is a 'natural wetland' as per the definitions and criteria of the NPS-FM. This classification and location of the wetland is consistent with wetlands identified throughout the area by Auckland Council[6].

Sites B-D were almost exclusively dominated by FACU and UPL plant species (predominantly pasture grasses). No other potential wetland features were observed within the sites, nor within 100m of each site, and as such no further assessments were warranted.

The freshwater features within Site A were considered to be of low-moderate ecological value as they provided a low degree in diversity and abundance of aquatic habitat. The freshwater features within Site B, C and Trig Road were considered to be of negligible ecological value and were largely constructed,

[5] Ministry for the Environment. 2021. Defining 'natural wetlands' and 'natural inland wetlands'. Wellington: Ministry for the Environment. Figure 1.
[6] Morphum Environmental (2016). Whenuapai Structure Plan Area. Prepared for Auckland Council.

contained no or poor-quality aquatic habitat and had limited connectivity to the wider freshwater catchment.

Estuarine Ecology

Coastal wetlands which support the recognised ecosystem type 'Mangrove Scrub' are present on the northern boundary of Site A, B and C. These coastal wetlands form a monoculture of mangrove (*Avicennia marine*), an obligate wetland plant, and contain permanent coastal hydrology. Therefore, meeting the definition of a natural wetland under the NPS-FM, following the High Court decision[7].

Assessment of Ecological Effects

Direct effects of the proposed development will include vegetation removal and the reclamation of artificial watercourses and ephemeral reaches. No prohibited activities (i.e. earthworks or water diversion/take within the natural wetland which would result in complete or partial drainage) are proposed.

Botanical value throughout the sites were considered to be of negligible value and does not provide any significant value as habitat to indigenous faunal. The loss of vegetation within the site is expected to have a very low-level effect on ecological values.

The permanent stream within Site A has been avoided. It is unlikely that any of the short intermittent streams reaches will require reclamation. However, should reclamation of intermittent reaches be required, and if a functional need is proven, adverse effects can be appropriately mitigated and offset under the NPS-FM and Resource Management Act 1991 ("**RMA**"). The freshwater ecological value throughout the sites was considered to be of negligible (Sites B-D), and low-moderate (Site A) ecological value due to the low aquatic connectivity and low valued habitat. The reclamation of artificial channels and ephemeral reaches are expected to have a low-level of effect on ecological values.

Natural wetlands are located on site and within 100m of the proposed development. Works within and within 10m of the natural freshwater wetland has been avoided. There will likely be discharges of stormwater and diversion of water within 100m of wetlands requiring Non-complying activity consent pursuant to Regulation 54(c) of the NES-F. The proposed earthworks and development can be effectively designed and/or mitigated to ensure no partial drainage of any natural wetland or loss of ecological value.

All other identified aquatic habitats and ecosystems within the sites are proposed to be retained. No building infringements or removal of vegetation within the 10m riparian yard of the permanent stream is proposed. As such, there will be no direct adverse effects (e.g. removal or reclamation) on those natural ecosystems. The contributing catchment to the wetlands should not be significantly altered, as they are hydrologically supported by either the tidal regime or permanent stream flows, the development should not result in the complete or partial drainage of the wetland. Indirect adverse effects, for example, sedimentation and stormwater contaminants, are proposed to be mitigated through appropriate controls and following best practice guidelines to ensure adverse effects on aquatic life are no more than minor.

[7] Ministry of Conservation v Mangawhai Harbour Restoration Society Incorporated (2021) NZHC 3113

The proposed development has the opportunity to significantly increase the ecological value of the natural wetlands, permanent streams and terrestrial habitats through appropriate native riparian and buffer planting around the freshwater habitats, SEA and along the esplanade bordering the CMA.

Within the site, two streams, one natural freshwater wetland, coastal wetlands and artificial channels have been identified. No other wetlands per the NPS-FM or streams per the AUP OP were present throughout the sites. The proposed development has avoided the reclamation of permanent streams and the drainage of natural wetlands, as the development has appropriately taken the objectives of the NPS-FM into account during the design stage.

The proposed activities should not result in the complete or partial drainage of the natural wetlands as direct works within the wetlands have been avoided and the contributing catchment will not be significantly altered. Despite the likely Non-complying activity status under the NES-F, the development is consistent with the outcomes expected of the NES-F and the NPS-FM and will allow for the retention and protection of identified ecological features, including natural wetlands and streams. The proposed development is expected to have low adverse effects on the ecological values of the sites, and if restoration, enhancement and protection of the ecological features is carried out (i.e. native riparian and buffer planting and removal of undersized culverts), the development will likely provide an overall net-positive biodiversity gain.

Regards,

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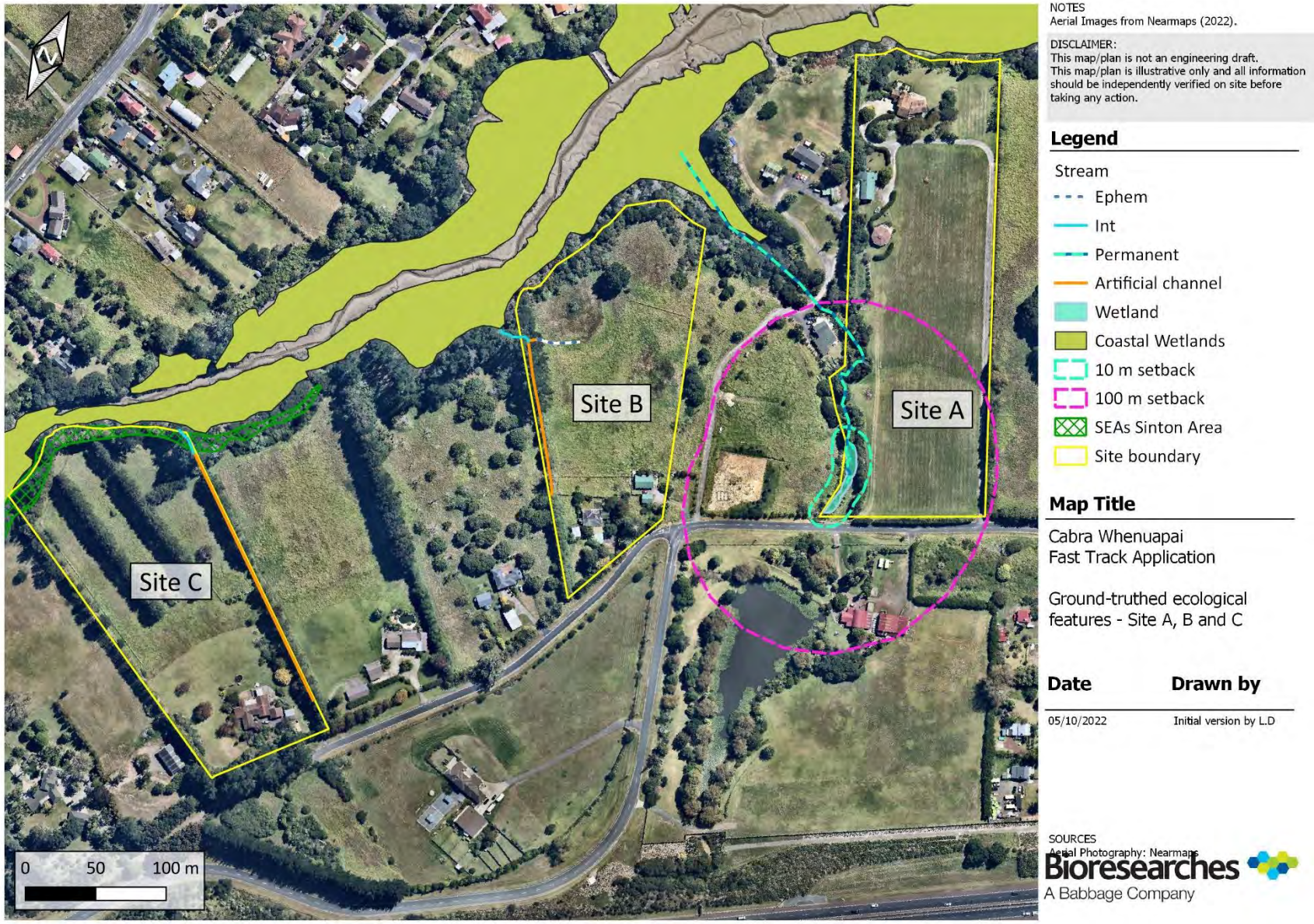
Level 3, 68 Beach Road | s 9(2)(a) | s 9(2)(a)

APPENDICES

Appendix I. Identified Ecological Features within Site A, Site C and Site D.



Appendix II. Identified Ecological Features within Trig Road.

NOTES
Aerial Images from Nearmaps (2022).

DISCLAIMER:
This map/plan is not an engineering draft.
This map/plan is illustrative only and all information should be independently verified on site before taking any action.

Legend

- Artificial channel
- Site boundary

Map Title

Cabra Whenuapai
Fast Track Application

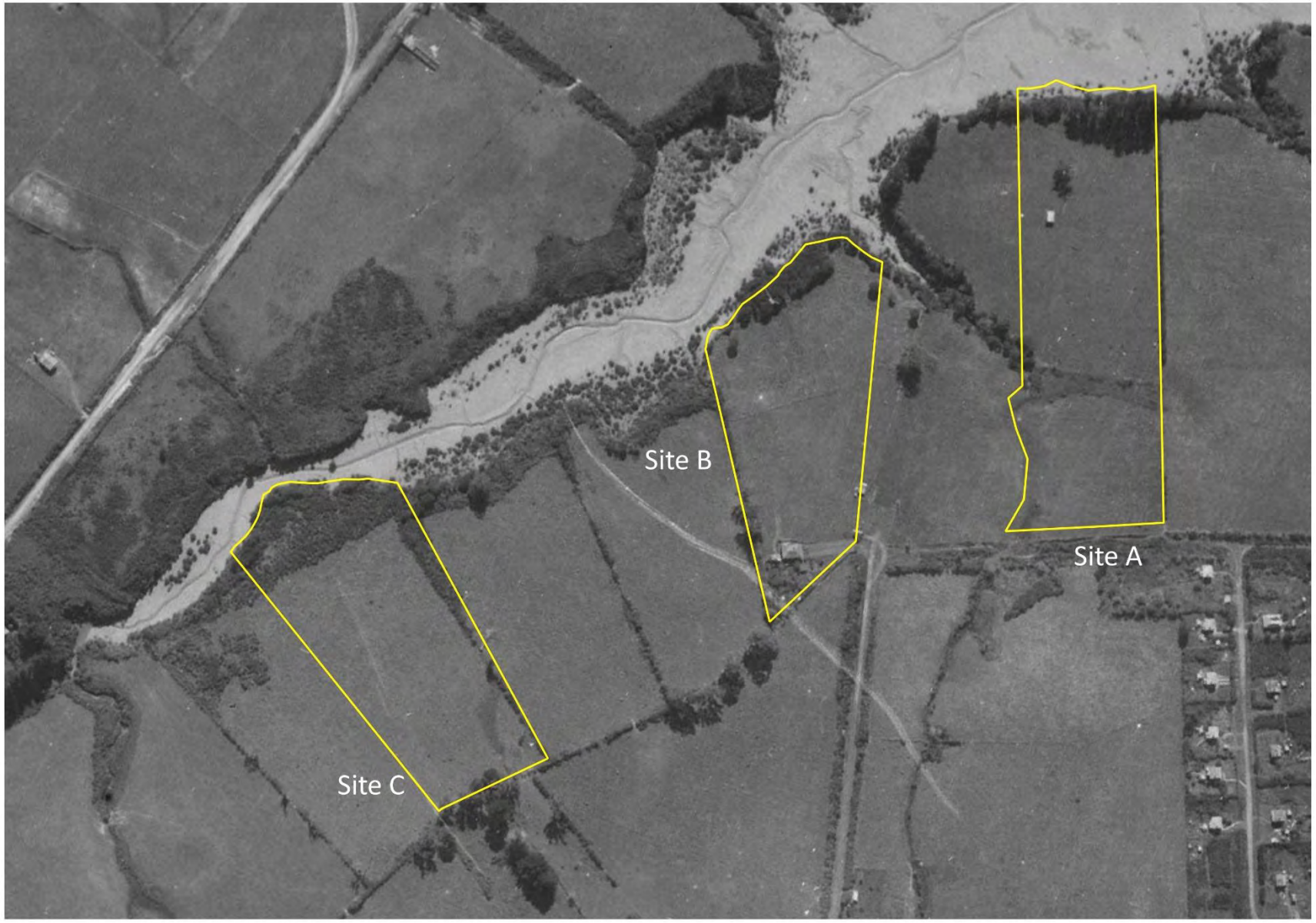
Ground-truthed ecological features -Trig Road

Date	Drawn by
05/10/2022	Initial version by L.D

SOURCES
Aerial Photography: Nearmaps

Bioresearches
A Babbage Company

Appendix III. Historic aerial image of Site A, Site C, and Site D from 1940. Image sourced from Retrolens.



Appendix IV. Historic aerial image of Tri Road site from 1959. Image sourced from Auckland Council Geomaps GIS viewer.

Appendix V. Photos of Identified Ecological Features

Terrestrial Ecology

Photo 1. Typical terrestrial vegetation within Site A

Photo 2. Typical terrestrial vegetation within Site B

Photo 3. Typical terrestrial vegetation within Site C

Photo 4. Typical terrestrial vegetation within Trig Road

Freshwater Ecology

Photo 5. Permanent reach within Site A.

Photo 6. Natural wetland within Site A

Photo 7. Short intermittent reach within Site B.

Photo 8. Artificial channel on the boundary of Site B.

Photo 9. Artificial Channel within Site C

Photo 10. Small intermittent channel within Site C

Photo 11 & Photo 12. Artificial channels within Trig Road

Estuarine Ecology

Photo 13 & Photo 14. Typical coastal wetland habitat within 100 m of Site A, Site B and Site C.