Boffa Miskell

Middle Road Substantive Application

Ecological Assessment
Prepared for CDL

22 September 2026



Boffa Miskell is proudly a
Toitū net carbonzero certified consultancy

Document Quality Assurance

This document may be cited as:
Boffa Miskell Limited 2026. *Middle Road Substantive Application: Ecological Assessment*. Report prepared by Boffa Miskell Limited for CDL.

For any information regarding this report please contact:
Eddie Sides | Ecology | Senior Principal | [redacted]

Revision /version:	Issue date:	Prepared by:	Description:	Reviewed by:
V2	24/07/2026	Eddie Sides Senior Principal Ecology	Draft report for client review	-
V3	12/08/2026	Eddie Sides Senior Principal Ecology	Final draft	-
V4	24/08/2026	Eddie Sides Senior Principal Ecology	Final report	Dr Ian Boothroyd Partner Ecology
V5	22/09/2026	Eddie Sides Senior Principal Ecology	Final report for issue	-

Approved for issue:
Eddie Sides | Ecology | Senior Principal | 22 September 2026

Release and Reliance

This report has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Boffa Miskell does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source. *While the Report is subject to a standard disclaimer stating that the report is not for use by persons other than the Applicant, I can confirm that the Report can be relied upon by the Panel and participants for the purposes of considering the Application under the FTAA.*

File name & Project number: [Middle Road Substantive Ecology Report Ver5.docx] BM261038

Template revision: 20230505 0000
Cover photograph: Jo Sunde, Woods, 2025

CONTENTS

1.0 Introduction 1
- 1.1 Statement of Qualifications and Experience 1
- 1.2 Description of Application Site 2
- 1.3 Description of the Proposal 3
- 1.4 Management Plans 7

2.0 Methods 7
- 2.1 Streams 7
- 2.2 Wetlands 7
- 2.3 Vegetation 8
- 2.4 Herpetofauna 8
- 2.5 Bats 8
- 2.6 Avifauna 8

3.0 Existing Environment 9
- 3.1 Terrestrial Vegetation and Habitats 9
- 3.2 Terrestrial Fauna 11
- 3.3 Wetlands 14
- 3.4 Streams 15

4.0 Proposed Activities and Mitigation 21
- 4.1 Vegetation Removal 21
- 4.2 Sediment Discharge 21
- 4.3 Stormwater Discharge 22
- 4.4 Streamworks 23
- 4.5 Artificial Drains 23
- 4.6 Planting 24

5.0 Assessment of Effects 24
- 5.1 Summary of Ecological Values 24
- 5.2 Assessment of Effects 24
- 5.3 Effects Management Hierarchy 27
- 5.4 Requirements under the NESF, NPS-FM and NPS-IB 28
- 5.5 Plan Change 9 29

6.0 Recommendations 30
7.0 Conclusions 31
8.0 References 32

Appendices

Appendix 1: Bird Records
Appendix 2: Tree Species List
Appendix 3: Streambank Recontouring Methodology, Herehere Stream
Appendix 4: Stormwater Basin Outlet Structure (Woods, 2026b)
Appendix 5. Draft Fauna Management Plan

1.0 Introduction

1.1 Statement of Qualifications and Experience

Eddie Sides, Project Ecologist

I am a Senior Principal at Boffa Miskell Limited. Boffa Miskell is a multi-disciplinary consultancy specialising in planning, ecology and landscape architecture. I have been employed at Boffa Miskell since September 2001.

I hold the qualifications of Master of Science (Hons) from [University of Auckland, which I completed in 1994. I am a member of the New Zealand Freshwater Sciences Society.

I have 30 years of professional experience as a consulting ecologist. My experience includes assessment, management and monitoring of ecological effects of development activities including roads, subdivisions industrial and municipal projects. I have appeared as an expert witness on numerous occasions including resource consent hearings, Environment Court and Boards of Inquiry (e.g. Waterview Connection, East-West Link). Recent subdivision projects I have consulted on include Conmara Estate (Clevedon), Kahawai Point (Waiuku), Drury South (Manukau) and Pacific Heights (Orewa).

I confirm that, in my capacity as author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Dr Ian Boothroyd, Ecology Reviewer

I am a Senior Principal Ecologist at Boffa Miskell Limited. Boffa Miskell is a multi-disciplinary environmental consultancy specialising in planning, urban design, landscape design, ecology, biosecurity and engagement. I have been employed at Boffa Miskell since June 2014.

I hold the qualifications of BSc (Hons) Manchester University 1977), MSc Applied Hydrobiology (University of Wales, 1980) and DPhil (Waikato University, 1988). I am an appointed Fellow of the Royal Society of Biology (FRSB) and the Environment Institute of Australia and New Zealand (FEIANZ), a life member of the Freshwater Sciences Society, and a member of the Resource Management Law Association. I am a Certified Environmental Practitioner (CEnvP, Ecology).

I have 35 years of professional experience in the field of resource management, including roles such as manager environmental monitoring and compliance (Hawke's Bay Regional Council), researcher (NIWA), senior lecturer (University of Auckland, and consultant. I am also an experienced independent environmental commissioner and appointed as a Freshwater Commissioner by the New Zealand government. My experience includes environmental assessment and management and decision-making in the New Zealand environment, and I am familiar with environmental protocols, criteria and performance standards. I have led multidisciplinary teams for large and often complex projects.

My experience extends to large land management and subdivision projects, renewable energy, roading, mining, quarrying, water treatment, biodiversity management and offsets, multi-criteria assessments through to investigations and assessments, consent conditions, fast track

applications and presentation of expert evidence at hearings, Environment Court and Boards of Inquiry.

I confirm that, in my capacity as reviewer of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

1.2 Description of Application Site

CDL Land New Zealand Ltd (CDL) is preparing a substantive application under the Fast-track Approvals Act 2024 (FTAA) for a proposed residential development at Middle Road, Havelock North. The Middle Road site comprises approximately 30.6 ha of land across five titles owned by CDL at 92, 108 and 148 Middle Road, and 139 Te Aute Road, Havelock North. The site sits immediately southwest of the established Havelock North residential area, with suburban housing to the north and east and rural-residential properties to the southwest.



Figure 1. Site Location, Middle Road Project.

The adjoining interfaces of the site can be described as follows:

- Middle Road runs along the southeast boundary of the site.
- The rear boundaries of the residential properties on Upham Street run along the northeast boundary of the site.
- Te Aute Road runs partially along the northwest boundary of the site.

- Rural residential properties and a church (Village Baptist Church) interface with the southwest and part of the northwest boundaries of the site.

The site is on the southwest side of Havelock North, approximately 900 m south of the town centre, which contains a range of retail and commercial uses. The wider land uses to the north, east and west of the site generally contain suburban residential areas. The land to the north-west contains a retirement village, and the land to the south-west is generally rural.

The planning report prepared to support the application under the FTAA provides a full site description. With respect to matters relating to Ecology, the following comments are made about the site.

- The site is largely flat and has been intensively farmed, with few remaining ecological features. Farming of the site mostly comprises cropping with some horticulture.
- The main ecological feature is the Herehere Stream, that runs along the northern boundary of the site and joins the Karamū Stream. Other site drains within the site connect to the Herehere Stream and on to the Karamū Stream.
- Vegetation on the site consists of mature trees around the 92 Middle Road, shelterbelts, streambank vegetation and specimen trees. The trees are mainly exotic, less than 25 years of age and do not form large contiguous areas.
- The vegetation here provides some habitat for birds, similar to that found in the surrounding landscape. Bats have not been recorded in the locality and are unlikely to roost here.
- Native lizards were assessed as unlikely to be present, and hand searching and tracking tunnels deployed in potential habitat areas did not record any.
- There is an opportunity to improve riparian functions along the Herehere Stream.

1.3 Description of the Proposal

This report is submitted in support of CDL's Substantive Application (**Application**) under the Fast-track Approvals Act 2024 (**FTAA**). The project is for residential development at 92, 108, 148 Middle Road and 139 Te Aute Road in Havelock North and is referred to as the **'Middle Road'** project.

The Middle Road project will provide for the residential subdivision of the site to enable the development of 317 lots. The intended subdivision layout will provide for a range of lot sizes to enable conventional residential development along with medium density development opportunities. The development will be supported by integrated three-waters and transport infrastructure and an open space network. The proposed master plan is shown in Figure 2. The planning report provides a full description of the proposal.

The Middle Road Project will be developed in two phases:

- Phase 1 – Land Development: CDL will undertake the subdivision, bulk earthworks, infrastructure, roads, stormwater works, reserves, landscaping and creation of the residential lots.
- Phase 2 – Dwelling Construction: CDL's build partners and future landowners will construct dwellings and associated site works in accordance with the consent notices applying the relevant Havelock North General Residential Zone or Medium Density Residential Zone provisions.



Figure 2. Middle Road Master Plan (Woods, July 2026).

File Ref: U:\2026\BM261038_ESI_Middle_Road_Substantive\GIS\BM261038_ecology.aprx BM261038_01_Site_Context_A3L5:10 pm



Boffa Miskell
www.boffamiskell.co.nz

This plan has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. If it is intended to support an application under the Fast-track Approvals Act 2024 it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application. While Boffa Miskell Limited has exercised due care in preparing this plan, it does not accept liability for any use of the plan beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

0 1 km
1:30,000 @ A3

Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND
Site
Watercourse (LINZ)

MIDDLE ROAD ECOLOGY

Site Context

Date: 24 August 2026 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] Drawn: JWa | Checked: ESi

Figure 3

File Ref: U:\2026\BM261038_ESI_Middle_Road_Substantive\GIS\ BM261038_ecology.aprx BM261038_02_Site_A3L5:14 pm



Boffa Miskell

www.boffamiskell.co.nz

This plan has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. If it is intended to support an application under the Fast-track Approvals Act 2024 it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application. While Boffa Miskell Limited has exercised due care in preparing this plan, it does not accept liability for any use of the plan beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

0 100 m

1:5,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Site drains/watercourses
- Watercourse (LINZ)
- Parcels

MIDDLE ROAD ECOLOGY

Site

Date: 24 August 2026 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] Drawn: JWa | Checked: ESi

Figure 4

With respect to matters relating to Ecology the following comments are made about the proposal:

- The proposal will involve large scale earthworks and vegetation removal during construction, and a large increase in impermeable surface area and associated stormwater generation.
- Priorities for ecological outcomes are managing stormwater quality and quantity and improving riparian ecological functions along the Herehere Stream.

The following **Ecological Assessment** will:

- Describe the current ecological values of the site;
- Evaluate the effects of the proposed development on those values;
- Outline the proposed management approach to avoid, remedy or mitigate adverse effects; and
- Present draft management plans and consent conditions for the Project.

1.4 Management Plans

A draft Fauna Management Plan is appended to this report, which includes:

- vegetation removal procedures for managing effects on birds including avoidance of active native bird nests in the months November to March inclusive;
- identification of potential bat roosting trees and acoustic checks of these prior to felling; and
- procedures for native fish capture and relocation from the drains within the site.

2.0 Methods

The methodology outlined below describes the approach used to characterise ecological values within the site and surrounding environment, including streams, terrestrial vegetation and fauna. The assessment draws on site surveys, habitat observations and relevant background information to inform the evaluation of potential ecological effects of the proposed development.

2.1 Streams

Data from Hawke's Bay Regional Council (HBRC) and the Freshwater fish database has been reviewed. The state and ecological values of the receiving environments and their sensitivity to the effects of the project were assessed.

2.2 Wetlands

The site contours, flowpath models and aerial photographs were reviewed to identify potential wetlands. No potential wetlands were identified so further investigations were not undertaken.

2.3 Vegetation

Aerial photographs and ground photographs were reviewed, and a ground survey undertaken on 5 February 2026 to identify tree and shrub species present on the site. The biodiversity value of the vegetation and its potential values as fauna habitat were assessed.

2.4 Herpetofauna

Relevant data was retrieved (September 2024) from the Department of Conservation (DOC) administered BioWeb Database within a 50 km radius of the site and other resources (iNaturalist, community reports), which provides known records of herpetofauna species nationwide. We note that bat database records are useful for assessments but are not comprehensive, and do not establish absence of fauna.

To better assess the potential for native lizards to be present and determine the need for a Lizard Management Plan and Wildlife Permit, a ground survey was undertaken and tracking tunnels deployed on 5 February 2026.

Site investigations were undertaken by Alice Dee. Potential habitat areas were identified and briefly hand searched. These included intact rank grass along road edges and hedgerows, log/woody debris piles, farm debris (metal scrap, stone piles, wood).

A total of 35 tunnels were deployed in potential habitat areas, consisting of seven lines of five tunnels. Tunnels were deployed for two, one-week periods, producing a total of 70 tracking cards. The total effort was 490 tunnel-nights (i.e. 35 tunnels x 14 nights). Tracking cards were recovered on 12 February and 19 February. Cards were analysed to assess presence and abundance of lizards and also pest species (hedgehogs, rats and mice).

2.5 Bats

The DOC-administered BioWeb database was reviewed for records of both long-tailed and short-tailed bats within a 25 km radius of the site. We note that bat database records are useful for assessments but are not comprehensive and do not prove absence of fauna. The presence of roost trees was evaluated and the potential for bat roosting or foraging within the site was assessed on 5 February, 2025.

2.6 Avifauna

Avifauna records were sourced from the Ornithological Society of New Zealand's (OSNZ) Atlas of Bird Distribution in New Zealand, grid square (6160.2840) that encompassed the site and surrounds (C. J. R. Robertson *et al*., 2007), and the eBird New Zealand Bird Atlas effort map grid squares (BH85) that shows bird records to date (Atlas Effort Map - New Zealand Bird Atlas (ebird.org). Accessed 06 September 2024). The grid square is 10 km x 10 km. We note that ebird records are useful for confirming the presence of species, but records are biased toward accessible sites and the data does not prove absence of fauna. Bird observations were recorded during the site visit on 5 February, 2025.

3.0 Existing Environment

3.1 Terrestrial Vegetation and Habitats

The site land use is mainly farmland, used for cropping and grazing. The site also includes a horticultural block with shelterbelts, some residential dwellings with associated ornamental trees and vegetation along the Herehere Stream. The full species list is included in Appendix 2.

Farmland

The majority of the site is farmland, with exotic pasture grasses used for grazing covering much of the area. There are scattered trees in the farmland, with mature exotic species of willow, poplar, and eucalyptus present. Some African boxthorn (*Lycium ferocissimum*) grows amongst blackberry shrubbery in the centre of the northeastern boundary. Along the Middle Road boundary, there is a short row of trees consisting of poplar, silver birch (*Betula pendula*) and cypress and along the Te Aute Road boundary are sporadically spaced young cypress trees approximately 2 – 3 m in height.

The farmland provides minimal habitat for indigenous fauna; some mature trees may provide nesting habitat for avifauna and temporary roosting habitat for bats, if present.

Horticultural block with shelterbelts

The 3.1 ha horticultural block on the western side of the site (139 Te Aute Road) contains a kiwifruit orchard and has a ground cover of exotic pasture grasses. Exotic casuarina sp. hedge rows surround much of the horticultural block.

The hedge rows may provide some limited nesting habitat for indigenous birds and cover habitat for skink species. It should be noted that the hedge rows are maintained and are likely to be machine-pruned once or twice a year, thereby limiting their ecological value as habitat for fauna (due to disturbance).

Residential dwellings

There are four residential dwellings along Middle Road (92, 108 and 148) that area within the site. Vegetation in these properties comprises exotic specimen trees, some fruit trees, garden beds and a few native trees. Notable native trees are large manuka at 148 Middle Road and a large totara at 92 Middle Road, and a few pittosporum. The vegetation surrounding the residential dwellings provides very limited potential habitat for indigenous fauna in terms of both quantity and quality.

Riparian Vegetation

The Herehere Stream runs along the entire northern boundary of the site. The stream banks are predominantly covered in exotic rank grass and weeds. Towards Te Aute Road there is a small cluster of large pines (*Pinus radiata*). The northern bank has only a narrow riparian margin adjoining the existing residential properties, containing rank grass, and some shrubs and trees. The vegetation provides some stream functions such as filtration and banks stabilisation but only provides limited shade. The stream channel may be flooded at times and is therefore unlikely to provide lizard habitat.

	*Photo 1. 108 Middle Road - View across south of site toward horticulture block (Google Streetview, 2024)*
	*Photo 2. View across northern part of site from 92 Middle Road (Google Streetview, 2024).*
	*Photo 3. 92 and 84 Middle Road – citrus and ornamental trees, eastern corner of site. View northwards (Google Streetview, 2024).*
	*Photo 4. Site from Te Aute Road, Herehere Stream on left. View eastwards (Google Streetview, 2024).*

3.2 Terrestrial Fauna

3.2.1 Herpetofauna

Bioweb[1] records were retrieved for a 50 km radius surrounding the proposed site. Within this radius, there are records for ten species of indigenous lizards, comprising six skink species and four gecko species.

No lizard species have previously been recorded within or adjacent to the site. Five species are known to be present within 15 km of the site (Table 2), including northern grass skink (*Oligosoma polychroma*), northern spotted skink (*O. kokowai*), Hawke's Bay skink (*O. auroraense*), ngahere gecko (*Mokopirirakau* 'southern north island") and barking gecko (*Naultinus punctatus*). In the wider area, lizard records were typically in areas of indigenous vegetation or around areas of recent infrastructure and in coastal areas. Outside these areas, herpetofauna records were scarce, likely reflecting both land use (much of the area is modified pastural grassland) and a lack of survey effort or lizard- specific investigations.

The invasive plague skink (*Lampropholis delicata*) which are classed as an "unwanted organism" (Biosecurity Act 1993), are commonly found throughout the upper North Island. Introduced frog species, including southern bell frog and the southern brown tree frog are present in the wider area and may be present within the Site. These species are non-native species and as such are not a constraint to the proposed development and are not further considered for this assessment.

Table 1. Lizard species potentially present within 15 km of the site.

Species	Common name	Threat class (National)	Nearest record	Preferred habitats
Oligosoma polychroma	Northern grass skink	Not Threatened	Cape Kidnappers	Dry open areas with low vegetation (e.g., grasslands) or debris such as logs or stones for cover
Oligosoma kokowai	Northern spotted skink	At Risk - Relict	Haumoana Beach	Boulder beaches, sand dunes, open coastal forest and scrub, as well as grassland, shrubland and scree slopes at inland sites
Oligosoma auroraense	Hawke's Bay skink	Threatened – Nationally Endangered	Cape Kidnappers/Te Mata Peak	Coastal dunes, grassland, shrubland, scrub, pasture, and the edges of coastal forest.
***Mokopirirakau* "southern North Island"**	Ngāhere gecko	At Risk - Declining	Cape Kidnappers	Forest and scrub, especially kānuka / mānuka
Naultinus punctatus	Barking gecko	At Risk - Declining	Cape Kidnappers	Forest and scrub, especially kānuka / mānuka.

The proposed development area is predominantly pastoral land, subjected to grazing and tilling. Grazed (low stature) pasture is not considered to provide suitable cover and food resources for indigenous lizard populations. Hedge rows, rank grass and garden beds can provide potential habitat for Northern grass skink which are relatively tolerant of disturbance. Hawkes Bay skink

[1] Bioweb database accessed September 2026.

has also been recorded in dense grass habitats throughout their known distribution in the North Island.

It is very unlikely that arboreal geckos are present, due to the isolation of the site from any known or suitable gecko habitat in the surrounding area.

Based on this desktop assessment, there is low probability of herpetofauna species being present in the grazed areas; moderate probability of Northern grass skink being present in the rank grass, hedge row and garden bed areas; and a low probability of threatened species such as Northern spotted skink or Hawke's Bay skink being present, because of their limited distributions.

Site investigations

Areas of Low and Medium habitat value were identified (Figure 5) as summarized in Table 2.

Table 2. Potential lizard habitat and values. Refer to Figure 5 for locations.

Habitat Type	Habitat Value
Rank grass on farmland, exposed to repetitive disturbance from grazing, mowing, earthworks and flooding of farm ditches.	Low Value
Rank grass on roadside and riverside	Medium Value
Farm Debris – car wrecks, concrete piles	Medium Value
Wood piles	Medium Value

No lizards were observed during hand searching.

No lizards were recorded on tracking cards. Results also indicated low animal pest numbers on the site. Three pest species were detected. Hedgehogs were found in 6% of cards, Rats were found in 1%, and Mice were found in 34% of tracking cards (Table 3).

Table 3: Total number of records for fauna types, from 70 ink cards deployed at Middle Road.

Hedgehog	Rat	Mouse	Insect	Lizard
4	1	24	13	0

Based on the quality, extent and fragmentation of lizard habitat, paired with the results of the tracking tunnel survey, this site is unlikely to contain lizards. The proposed works are therefore expected to have negligible impact on lizard populations.



This plan has been prepared by Boffa Miskell Limited on the instructions of our Client. In accordance with the agreed scope of work. It is intended to support an application under the Fast-track Approvals Act 2024 it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application. While Boffa Miskell Limited has exercised due care in preparing this plan, it does not accept liability for any use of the plan beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

Boffa Miskell

www.boffamiskell.co.nz

0 50 m

1:3,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Site
- Potential bat roost trees
- Tracking tunnel
- Refuge piles

Potential Lizard Habitat

- Low value
- Moderate value

MIDDLE ROAD ECOLOGY

Ecology Survey

Date: 24 August 2026 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] Drawn: JWa | Checked: ESi

Figure 5

3.2.2 Bats

The closest long-tailed bat (*Chalinolobus tuberculatus*) record is 9 km west of the site, recorded in 2025. There are three further records c. 19 km to the south of the site at Mohi bush, recorded in 2016. The site is within the potential foraging range of populations recorded at this site. There are no short-tailed bat (*Mystacina tuberculata*) records within 25 km of the site. There is generally a lack of survey data for bats around the coastal Napier, Hastings and Havelock North areas, and suitable bat habitats may not have been surveyed.

Vegetation within and near the site includes several large trees that may contain roost features. Individual trees were identified and geolocated on 5 February 2026. A total of 15 separate potential roost trees and one shelter belt (eastern property) of potential roost trees containing refuge features such as holes or crevices were identified, these being old farm trees.

Considering the distance to known bat populations and the limited suitable habitats present within the site and the surrounding area, long-tailed bats are unlikely to be utilizing the site for roosting or foraging. The habitat is unsuitable for short-tail bats, which prefer indigenous forest habitats.

3.2.3 Avifauna

Habitats for avifauna within the site and the surrounding landscape include pasture and predominantly exotic trees and shrubs.

A total of 37 species of indigenous birds were identified within the local eBird grid-square. Of the 37 indigenous bird species on record, 23 are classified as Not Threatened, 13 are classified as Threatened, At-Risk and one (Kōtuku or White heron *Ardea albais*) classified as Threatened, Nationally Critical under the New Zealand Threat Classification System (Robertson *et al*., 2021). The site is unlikely to provide habitat for these threatened species, although several of these species may traverse the site at times.

Species observed during a site visit on the 5 February are listed in Table 4.

While habitats on the site are unfavourable for most native species, species such as cormorant and heron (due to proximity to the coast/Tukituki River) may potentially utilise the large trees and the Herehere Stream, and during construction, banded dotterel (which are known to be present in the area) may potentially nest in the earthworks area.

3.3 Wetlands

The Resource Management Act 1991 defines wetland as "… *permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions".* The site is flat and has been tilled and contains no areas of wetland vegetation. Soils appear to be permeable, and a system of drains is installed. There are no areas within the site that meet the definition of wetland or Natural Inland Wetlands as defined in the National Policy Statement for Freshwater Management (NPS-FM, amended 2025).

Table 4. Bird species list from a site visit on the 5 February 2026. *Primary habitat used by each species is shaded dark green and secondary habitat is shaded light green. List sorted by National Conservation status (Robertson et.al., 2021).*

SPECIES - Robertson et al. 2012	Scientific Name	CONSERVATION STATUS - Robertson et al. 2021	Native forest	Exotic Forest	Scrub / shrubland	Farmland / open country	Freshwater / wetlands	Coastal / Estuary	Oceanic	Urban/Residential
Spur-winged plover	*Vanellus miles novaehollandiae*	Not Threatened								
Purple swamphen | Pūkeko	*Porphyrio m. melanotus*	Not Threatened								
Pied stilt | Poaka	*Himantopus h. leucocephalus*	Not Threatened								
Welcome swallow | Warou	*Hirundo n. neoxena*	Not Threatened								
North Island fantail | Pīwakawaka	*Rhipidura fuliginosa placabilis*	Not Threatened								
Parsons bird | Tui	*Prosternadera novaeseelandiae*	Not Threatened								
Paradise shelduck | Pūtangitangi	*Tadorna variegata*	Not Threatened								
Swamp harrier | Kāhu	*Circus approximans*	Not Threatened								
Skylark	*Alauda arvensis*	Introduced And Naturalised								
Black bird	*Turdus merula*	Introduced And Naturalised								
Sparrow	*Passer domesticus*	Introduced And Naturalised								
Myna	*Acridotheres tristis*	Introduced And Naturalised								

3.4 Streams

3.4.1 Herehere Stream

Herehere Stream (photos 5 to 8) was included in HBRC studies undertaken in 2024-2016 (HBRC, 2016a and 2016b). The report found that the Herehere Stream had a rocky substrate, unlike most streams in the area, that provided instream habitat opportunities for fauna and helps maintain dissolved oxygen concentrations. Instream habitat function scores were relatively high (Table 3). Macroinvertebrate indicator metrics were low (MCI-sb of 66). The MCI metrics ranked the stream fourth of 16 sites surveyed by HBRC in 2016. Fish recorded were common bully, inanga, and shortfin eel. Nutrient levels were high and the level of *E.coli* contamination was also notably high. This suggests that water quality factors are having adverse effects on stream ecosystems. Data is summarised in Table 3.

WSP undertook a recent stream study in 2025 (WSP, 2025a). In the Herehere Stream they recorded 10 freshwater fish and crayfish species (six being native and three exotic), 9 barriers to fish passage and 34 stormwater discharges. Barriers to fish movement downstream of the site were not identified as high priority, indicating partial but not significant barriers to fish movement between the Karamū Stream and the project area. Stream Ecological Valuation (SEV) scores were 0.30 at H1 (downstream of Te Aute Road), 0.37 at H2 (upstream of Middle Road at Grant Street Reserve) and 0.49 at H3 (upstream of Iona Road). Scores below 0.4 indicate “poor” integrity of functions, and 0.4 to 0.6, “fair”. They noted the lower reached were straighter, deeper

and slower, with aquatic plants such as hornwort, water celery and curly pondweed prolific in places. They described the stream as a highly modified stream system in a highly modified environment, with low ecological health and fish passage, yet containing at risk fauna and having moderate instream habitat value and assessed the overall ecological value as Moderate. WSP also found ongoing stream channel movement and bed level changes (WSP, 2025b).

A feature of the stream is the Herehere flood control dam, located to the east of the town.

The Herehere Stream catchment was identified as a long-term priority catchment for sediment and a low priority catchment for nutrient reduction in the Tūtaekurī, Ahuriri, Ngaruroro, Karamū or TANK Plan Change 9 Planning Maps (Schedule 27, Map 1 and Map 2, HBRC, 2022).

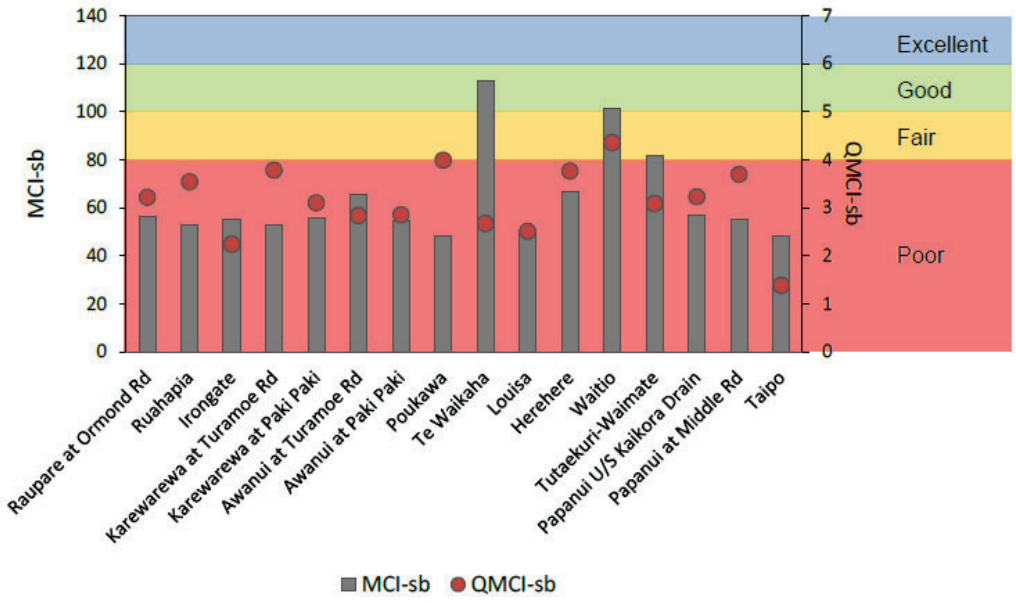


Figure 3. Macroinvertebrate community index results from Hawkes Bay Regional Council (2016).

3.4.2 Other Watercourses within the Site

Other watercourses comprise drains (Bake and Pomeroy Drains) in the north of the site connecting to the Herehere Stream (Photos 9 to 12), and the Iona development stormwater management area and connecting drains (Gilpin Drain) located in the south of the site (Photo 13 to 15). The latter pass under Te Aute Road and join the Karamū Stream to the north.

Hawkes Bay Regional Council manages these watercourses within the site as artificial stormwater drainage assets. We are advised by Woods Consultants that there is no recent consent documentation, survey titles, strategic documents (including the regional and district plans) or Council correspondence indicating that these watercourses are natural features.

These watercourses are therefore classified as artificial and not as streams or rivers under the RMA (1991). In terms of ecological values they perform conveyance functions and provide habitat for aquatic plants and animals. These are likely to be tolerant fauna often found in lowland watercourses in agricultural catchments, such as shortfin eel. There are unlikely to be any threated species present.

Table 5. Summary of environmental data for Herehere Stream from HBRC (2016a and 2016b).

Channel width (m)	2.4
Channel depth (m)	0.12
Flow velocity (m/s)	0.106
Pesticides	Below detection limits
Nutrients	Nutrient concentrations were above ANZECC lowland stream trigger levels and near the median for streams in the Karamū catchment. Median E.coli was high.
Dissolved oxygen	Median DO 7 mg/l. The minimum % DO was 51%, the highest of six streams in the TANK study.
Clarity black disk (m) low-flow mean	2.6
Temperature (deg C) median	22
Ecosystem Respiration and Gross Primary Production	In the healthy range with the lowest values of streams in this survey.
Aquatic Plant abundance (percent cross section cover)	c.10
Aquatic Plant species recorded	*Apium* spp, green filamentous algae
Habitat	Rocky substrate provided invertebrate habitat and fish cover and increased hydraulic heterogeneity. Riparian shade was relatively high although the buffer was narrow. Channel modification was moderate. The overall score was 113, the third highest of 16 sites surveyed.
Macroinvertebrate communities	Amphipods (*Paracalliope*) and snails (*Potamopyrgus*) were the most abundant taxa. Taxa Richness was13. MCI-sb was 66. QMCI-sb was c.3.5, in the poor range but slightly above most other sites (ranking fourth of 16 sites; see Figure 3). Only two EPT taxa recorded and were rare (0.2% of sample abundance. The EPT taxa were *Hudsonema* and *Zephlebia*), moderately sensitive taxa that were not recorded at other sites in the survey.
Fish	Common bully, inanga, shortfin eel recorded in an electrofishing survey at Te Aute Road in 2007. Longfin eel and common smelt have also been recorded in other streams in the locality, together with the exotic species goldfish and mosquitofish (HBRC website).



Photo 5. Herehere Stream at Middle Road. December 4, 2025.

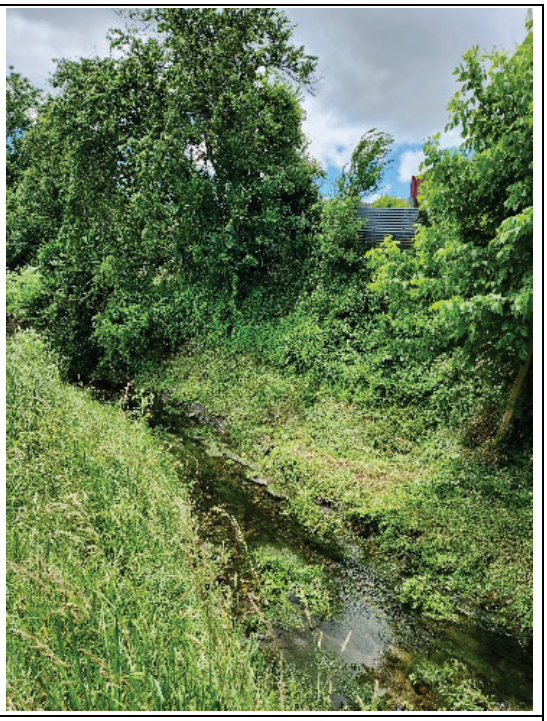


Photo 6. Herehere Stream downstream of Middle Road. December 4, 2025.

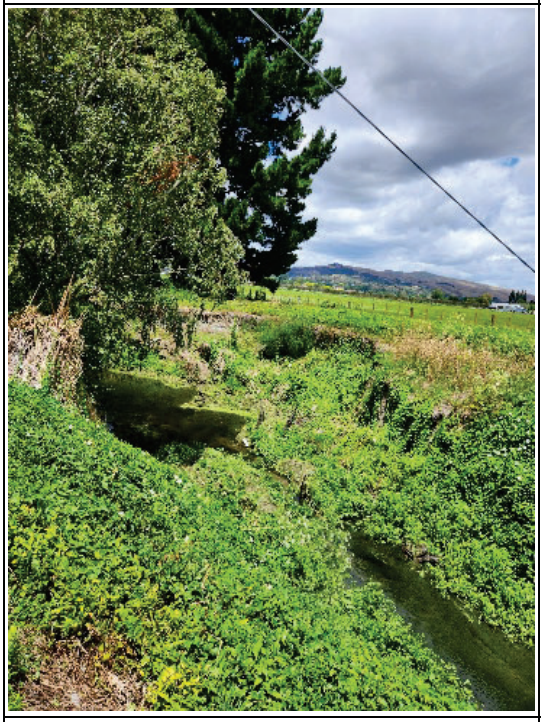


Photo 7. Herehere Stream upstream of Te Aute Road. December 4, 2025.



Photo 8. Herehere Stream downstream of Te Aute Road. December 4, 2025.



Photo 9. Landscape and drains within the site, view eastwards. December 4, 2025.



Photo 10. Landscape and drains within the site, view southwards. December 4, 2025.

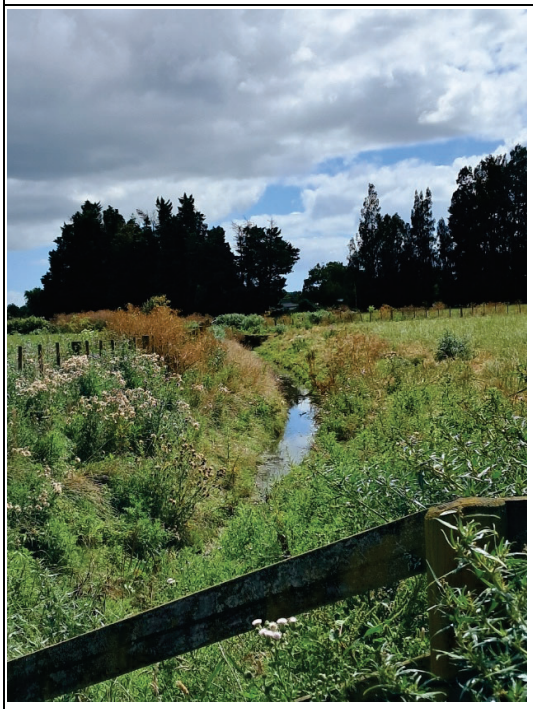


Photo 11. Farm drain within the site, view eastwards. February 5, 2026.



Photo 12. Farm drain on western boundary of McKenna Block. February 5, 2026.



Photo 13. Farm drain outlet into Herehere stream. February 5, 2026.



Photo 14. Stormwater management area for Iona subdivision, south of site. December 4, 2025.



Photo 15. Stormwater management area for Iona subdivision, south of site. December 4, 2025.



Photo 16. Outlet from stormwater management area for Iona subdivision, south of site. December 4, 2025.



Photo 17. Herehere Stream At Reynolds Road (c. 500 m upstream of site). The vertical fall over 0.5m height is likely to impair fish passage. Google Streetview, 2024.



Photo 18. Herehere Stream, upper catchment at Aintree Road. Google Streetview, 2024.



Photo 19. Karamū Stream at Havelock Road, view upstream. Approximately 1.3 km from site. (Google streetview).

3.4.3 Karamū Stream

The Karamū Stream is located downstream of the site, north of Te Aute Road. The Karamū Stream is an important lowland waterway and is the receiving environment for the Herehere Stream and other watercourses within the site. The stream is relatively large and receives multiple inflows from rural and urban tributaries. The stream channel has been modified but riparian planting has been undertaken to improve its ecological functions. The Karamū Stream also contains a range of fish species (shortfin and longfin eels, common bully, common smelt, inanga and brown trout have been recorded; Hawkes Bay Regional Council website).

4.0 Proposed Activities and Mitigation

4.1 Vegetation Removal

It is proposed to remove most trees within the project area to facilitate bulk earthworks and to remove future hazards from limb and treefalls in a residential area. Most of these trees are exotic species, being farm shelterbelts or ornamental trees.

It is proposed to mitigate the effects of vegetation removal by undertaking targeted fauna checks prior to felling, specifically checks of potential bat roosting trees with acoustic devices, and avoidance of trees with active nests during the main nesting season. If necessary, this may include setbacks from trees adjacent to the boundary but outside of the site.

New planting throughout the development, including alongside the Herehere Stream and the extensive Reserve areas, will also mitigate the effects of vegetation removal.

4.2 Sediment Discharge

Land disturbing activities such as earthworks can result in increased sediment generation during rainfall events. The removal of vegetation cover allows easier mobilisation of sediment, which

may then be carried into streams where elevated suspended sediment concentrations and sediment deposition on the streambed can have adverse effects on fauna and habitats.

The low gradient of the Project site provides relatively low sediment generation potential compared to a site with steeper slopes. Erosion and sediment control practices will further reduce sediment generation (i.e. sediment mobilised by erosion processes) and yield (i.e. the amount discharged after treatment). These measures are presented in the Erosion and Sediment Control Plan (Woods, 2026).

The following statement was provided by Woods (2026a*):*

Excavation and stabilisation of the dry basins will be the first earthworks completed at the site. Sediment retention ponds and decanting earth bunds will then be established and will generally discharge to the dry basins, except for a few decanting earth bunds along Te Aute Road which will discharge to the existing road. These devices will be used to treat the sediment laden runoff during bulk earthworks, utilising settlement and chemical treatment to remove the suspended particles within the water. These devices will discharge to the established dry basins which will impound the water discharging from the devices. Water impounded by the dry basins will be pumped to water trucks and used for dust control during bulk earthworks. Silt fences will be installed around the perimeter of the dry basins and along the top of the Herehere stream bank to provide filtration to any runoff that would reach that level during a significant storm event.

All devices will be designed and constructed in accordance with the Hawke's Bay Regional Council Waterway Guidelines Erosion and Sediment Control Document April 2009 and will achieve the required sediment removal rates set out within.

Bulk earthworks are expected to take a total of 19 months. The site will be earthworked in sections, likely having no more than 50% of the site area open at any one time.

Following earthworks, exposed soils will be immediately stabilised by grassing. These measures will minimise sediment generation and yield during construction. In the long term, urbanisation may result lower sediment yield than some agricultural landuses (MfE, 2019).

4.3 Stormwater Discharge

Stormwater generated during rainfall events can have both quantity and quality effects within the stream receiving environments. Stormwater runoff from impervious surface cover such as roofs, roads and driveways can increase, picking up surface contaminants from vehicles and other sources. Catchment urbanisation can result in reduced stream baseflows, increased peak flows, channel erosion and elevated contaminant concentrations (e.g. trace metals, hydrocarbon, sediment and bacteria (https://www.waikatoregion.govt.nz/environment/water/stormwater/).

The existing drains will be replaced by stormwater management basins and swales in a similar location. The intention is to maintain site drainage patterns that reflect the natural landform and hydrological processes and discharge locations while providing treatment and flood storage. The location of these basins is indicated in the master plan (Figure 2).

Stormwater quantity will be managed using swales to slow flows and dry basins to store and release flood flows, thereby avoiding an increase in peak flows from pre-development levels. This will avoid an increase in erosion in the Herehere Stream or flooding effects downstream of the site.

Stormwater quality will be managed using a treatment train approach of grassed swales, proprietary filter devices and dry basins. We understand that these systems will be designed to

meet the objectives and requirements of the HDC and HBRC guidance documents. The following statement was provided by Woods (2026):

"The primary stormwater network has been sized to convey flows up to the 5-year ARI event. All water in the primary network will be treated via Atlan BaffleBoxes (or approved similar) before discharging to the dry basins. The BaffleBoxes are designed to achieve removal rates of:

- *99% for Gross Pollutants*
- *73% for TSS*
- *59% for Total Phosphorus*
- *39% for Total Nitrogen*
- *66% for Microplastics*

In addition to this, the dry basins and low-flow channels within provide a further element of treatment. The low-flow channels have very shallow gradient and will be planted, thus these will provide a level of dissolved metal absorption and further TSS removal. Treatment effectiveness of the treatment train will be reported on in the SWMP. "

The removal of sediment from stormwater by the combination of baffle boxes and dry basins will exceed 75% (Woods, 2026b).

4.4 Streamworks

It is proposed to recontour the southern bank of the Herehere Stream (i.e. within the site) to achieve the following outcomes:

- Remediate active erosion areas.
- Reduce susceptibility of erosion-prone areas to bank failure.
- Provide slope angles suitable for topsoil and planting.
- Improve amenity and safety.
- Provide for an integrated riparian zone design to include a maintenance access, shared path, and riparian planting zone.

Disturbance of in-stream habitats will be minimised by isolating the channel, using a barrier of stacked coir logs that will then be repositioned and utilised in the bank recontouring. It is proposed to stage the earthworks so that each section of streambank would only be exposed for one day before being covered by coir matting. This approach will minimise the risk of erosion in the case of rainfall events. Details of this approach are included in Appendix 3.

An outlet from the stormwater management devices will also be constructed. This will comprise a wingwall structure and stilling basin. The streambanks will be shaped to minimise erosion risks. It is proposed to avoid placement of riprap within the Herehere Stream. Details of the outlet design are provided in Appendix 4.

4.5 Artificial Drains

The artificial drains within the site are not classified as streams and reclamation is a permitted activity. The reclamation of the drains within the site is required to form the subdivision including

the stormwater management basins. Nonetheless, the drains may contain large numbers eels and possibly other native fish (and possibly pest fish). To minimise fish mortality to the extent practicable, native fish will be captured using traditional-style Fyke nets and other live-capture methods and released at appropriate locations in the Karamū Stream. Pest fish will be euthanised and disposed of hygienically. The native fish capture and relocation methodology will be described in the Fauna Management Plan.

4.6 Planting

Planting across the site will include street trees, planting within amenity and reserve areas, and riparian planting along the Herehere Stream. Planting plans have been developed in accordance with HDC planting guidelines (Beca, 2025). The planting design is presented in the Landscape Concept Report, (Boffa Miskell, 2026), which includes the overall intent, strategy, landscape masterplan, detailed plans and typologies, and planting palettes. The report includes cross sections showing proposed planting including key areas such as the stormwater basins and the Herehere Stream. In addition to the Landscape Concept Report, the Landscape Specification (Boffa Miskell, 2026a) specifies the standards and quality assurance for delivery of the landscape components of the project, including site preparation, plant and animal pest control, topsoil, plant propagation, planting and maintenance. The planting design emphasises indigenous biodiversity and riparian functions for the Herehere Stream, including stream shade and bank stability.

5.0 Assessment of Effects

5.1 Summary of Ecological Values

Habitat on the site is predominantly farmland used for grazing and cropping, with low ecological values. Trees comprise specimen trees in the farmland, horticultural shelterbelts and amenity planting around dwellings. Habitats are generally unfavourable for native terrestrial fauna. There is a low probability of long-tailed bats being present; a moderate probability of native birds in low numbers during the nesting season; and low probability of native skinks such as the northern grass skinks, with habitats limited to the unmanaged grass areas. The watercourses within the site are not classified as streams but are likely to support native fish populations, particularly shortfin eels. The Herehere Stream is the most important ecological feature of the site, supporting a freshwater ecosystem including several native fish species, and connecting upstream habitats to the Karamū Stream. It has relatively low ecological health indicators due to farming and urbanisation and the stream fauna is generally not considered to be sensitive to the potential effects of the project.

5.2 Assessment of Effects

5.2.1 Effects on Indigenous Vegetation

The managed grazing, cropping and horticulture areas have negligible ecological values. There are no potential adverse ecological effects in these areas.

The trees on the site are primarily exotic species planted for gardens and shelterbelts and have negligible indigenous biodiversity value.

5.2.2 Effects on Lizards

The site investigation found no substantial areas of habitat such as undisturbed grasses, or wood or construction debris. Tunnel traps placed along the adjacent fenceline found no evidence of skinks. Rank grasses were present along the stream channel, but this area is probably unsuitable due to flooding. In summary we have not identified any high-quality habitats or observed any lizards during hand searches or deployment of tracking tunnels. The area has been highly disturbed by agriculture and is poorly connected to any potential sources for recolonization. Based on this evidence it appears unlikely that native lizards are present, or the population is at such a low density (i.e. not detectable in our investigation) that effects on species populations in the area would be negligible.

No further lizard management is required. No permits for lizard salvage are required and a Lizard Management Plan is not required.

5.2.3 Effects on Bats

Same large trees are present on the site, which provide potential bat roost habitat. These trees are a considerable distance from known bat locations and are relatively isolated and fragmentary habitat features in the landscape. Nevertheless, these bats travel significant distances and move roost trees frequently. Long-tailed bats have the highest national threat classification (Threatened – Nationally Critical), and a precautional approach is appropriate. We recommend pre-felling bat roost checks in accordance with the DOC Bat Roost Protocols (DOC, 2024). Potential roost trees on the site have been identified and geolocated by an ecologist. The pre-felling protocols require acoustic monitoring to be undertaken immediately prior to felling to ensure that no roosting bats are present in these trees. In our assessment this will reduce the potential effects on long-tailed bats to Very Low.

5.2.4 Effects on Birds

While there is a moderate probability of native birds nesting in trees on the site, there is a very low probability of nesting birds being a threatened native species. To manage potential effects, we recommend a precautionary approach. We recommend that if earthworks and vegetation clearance is undertaken during the bird nesting season (August – March), nest checks of all trees should be undertaken to determine if native birds are nesting. If active native bird nests are detected, works must cease in a 20m buffer around the nest until chicks have fledged or the nest has failed. In our assessment the avoidance of nesting birds will reduce the potential effects on indigenous species to Very Low.

5.2.5 Effects on Streams

Physical modification

We understand that no structures are proposed within the bed of the Herehere Stream.

Streambank recontouring will be undertaken to reduce erosion risk and facilitate planting. This will involve regrading the south streambank bank to a more gentle slope of around 1:3, while avoiding works within the streambed to the extent practicable. Temporary erosion control in the form of coir logs and will be placed at the toe of the southern streambank during these works, and the slopes covered in coir matting and planted. The duration of soil exposure with be minimised. The logs and matting are biodegradable and will provide erosion protection and seed control while the plants are establishing and will eventually decompose. These works will reduce ongoing sediment inputs from bank erosion and the planting will have a positive effect on stream functions.

The artificial watercourses within the site will be removed, with these largely replaced by swales and basins. These will provide hydrological functions in a similar location to the existing main Bake and Pomeroy drains that extend from the centre of the site, to the Herehere Stream. These watercourses are not classified as streams, and therefore, the removal of the drains is permitted. The drains are likely to contain shortfin eels. In order to minimise the adverse effects of native fish mortality, a native fish relocation should be undertaken. This will involve trapping and relocating fish to an appropriate location, which will likely be the Karamū Stream. This stream is nearby and within the same stream network and has a large habitat volume with no obstacles to fish dispersing from the release point.

Hydrological Effects

Peak stormwater flows will be managed to pre-development levels using dry detention basins. Streambank stability will be improved by grading and planting, which will reduce the risk of erosion in the receiving environment.

Water flows from the upstream catchment will continue to be the dominant influence on the hydrology of the Herehere and Karamū Streams. Flows are naturally variable with low flows in summer, and high peak flows associated with rainfall events. The new impervious surface area will result in quicker runoff from the site, but overall hydrological patterns will remain similar, and minimum and maximum flows will not change as minimum flows are derived from the upstream catchment (independent of the Middle Road development) and peak flows from the development will be managed to the pre-development level. Provided that any erosion-prone areas within the site are managed the potential for changes to water quantity to have adverse effects on stream habitats or ecology is Very Low.

The extent of impervious surface cover within the development will be managed through the detailed design process to support appropriate stormwater management and ecological outcomes.

Construction Sediment

Earthworks will involve large-scale exposure of soil and will potentially result in an increase in sediment discharged from the site, mainly during and after rainfall. Earthworks will likely be completed in two seasons and will be subject to erosion and sediment control practices designed in accordance with Hawke's Bay Regional Council Erosion and Sediment Control Guidelines (2009). The site has relatively low sediment generation potential due to its low gradient. Due to the proposed erosion and sediment control, it is likely that the volume of sediment discharge will be similar or lower than agricultural practices that also expose the soil, such as tilling. The site constitutes less than 5% of the Herehere Stream catchment, therefore most of the sediment load during rainfall events is likely to be derived from the upstream catchment. Sediment loads are likely to stay within the wide natural range and unlikely to exceed natural peak levels seen during large rainfall events. Sediment discharges from the site are unlikely to form significant deposits that alter instream habitats or raise suspended sediment outside of the natural range. The instream communities are expected to be tolerant of potential increases in suspended sediment.

While there may be some temporary and localised adverse effects within the Herehere Stream, the level of effects on ecological values is likely to be low, and no effects are likely within the Karamū Stream.

Urban Stormwater Contaminants

Stormwater contaminant loads will increase as a result of the development. Treatment of stormwater to reduce contaminant loads will be considered at detailed design and will include a treatment train approach, with a sequence of treatment elements in series (Woods 2026a). Because of this proposed treatment, contaminant concentrations are likely to be similar or lower than those from other urban areas within the Havelock North area. Discharges will occur periodically during and after rainfall events. There is also likely to be considerable dilution and dispersion within both the Herehere Stream and Karamū Stream at such times because of the large upstream catchment areas. The ecological communities in the receiving environments are relatively tolerant of variations in water quality due to existing environmental conditions, including high water temperature and low dissolved oxygen, identified as the most important stressors in streams in the Karamū catchment by HBRC (2016). While some localised effects on macroinvertebrate communities may be detectable, we do not expect any substantial decrease in metrics such as the MCI, or effects on native fish communities. Any localised effects that occur would not extend into the Karamū Stream.

5.2.6 Effects of Planting

The proposed riparian planting of around 275 m of stream length on the south bank of the Herehere Stream within the CDL landholdings will benefit the Herehere Stream by reducing erosion and providing shade that will reduce water temperature and aquatic plant growth (thereby moderating dissolved oxygen concentrations).

Planting in other areas of the site such as public open spaces, streets and gardens is likely to significantly increase the total number of trees and overall vegetation cover within the site. This will increase habitat complexity and structure and also the diversity of resources, for example feeding, roosting and nesting habitats for birds. Planting species that provide food resources could potentially benefit native birds such as tui and kereru. Planting will therefore have a positive effect on terrestrial biodiversity and ecological function. Planting plans have been developed in accordance with HDC planting guidelines (Beca, 2025) and are presented in the Landscape Concept Report (Boffa Miskell, 2026).

5.3 Effects Management Hierarchy

The potential effects of the project can be avoided or minimised following the Effects Management Hierarchy (EMH) approach. The measures proposed to manage effects under the EMH are summarised below.

Actions to Avoid effects to the extent practicable:

- Pre-clearance checks to avoid removal of trees with active bird nests;
- Pre-clearance checks to avoid removal of trees with active long-tailed bat roosts;
- Avoidance of works within the Herehere Stream bed (excepting erosion control, if required).
- Impervious surface area limited through the detailed design process.

- Peak flow attenuation to pre-development levels using stormwater detention basins.

Actions to Minimise effects to the extent practicable:

- Implementation of erosion and sediment control measures during earthworks to minimise effects on downstream environments.
- Stormwater quality treatment to mitigate increases in stormwater contaminant loads.
- Stormwater design with open dry basins and swales to utilise natural systems and processes rather than piping.
- Maintaining hydrological patterns by locating stormwater systems in similar locations to the existing watercourses.

Remediation, i.e. restoring the environment where damage has occurred, will include the bank recontouring to reduce the existing erosion potential, and to remediate the streambank around the proposed detention basin outlet following completion of works. The construction management plan will also provide contingency actions to remedy environmental effects that occur during construction operations.

No offsetting or compensation is proposed. The EMH requires these are provided, if possible, where residual adverse effects that cannot be avoided, minimised or remedied remain more than minor. In our assessment the residual effects of this project are below this threshold.

In addition to managing adverse effects under the EMH, positive effects are anticipated from vegetating previously unplanted areas and creating connected green spaces and corridors.

5.4 Requirements under the NESF, NPS-FM and NPS-IB

Effects on Natural Inland Wetlands

The National Policy Statement for Freshwater Management 2020 (NPSFM; amended 2025) provides definitions of Natural Inland Wetlands and of the Effects Management Hierarchy.

Provisions of the National Environmental Standards for Freshwater 2020 or (NESF; amended 2025) regulate the following activities:

- Earthworks within a natural inland wetland resulting in its drainage (Prohibited);
- Taking, use, damming or diversion, or discharge of water with 100 m of a natural inland wetland affecting its hydrological function (Non-complying); and
- Earthworks or vegetation clearance outside of but within 10 m of a wetland (Non-complying).
- Where activities are non-complying, management of effects using the Effects Management Hierarchy.

There are no wetlands within the site or within 100 m of proposed earthworks so these regulations do not apply.

Stream Loss and effects on Fish Passage

There will be no loss of extent of rivers or streams. The internal watercourses within the site are artificial drains and are not classified rivers or streams.

The Herehere Stream will be retained in its current alignment within the development. Enhancement riparian planting is also proposed in line with HDC guidelines[2]. No structures that could affect fish passage are proposed within the Herehere Stream.

There will be loss and modification of artificial watercourses within the site and a new stormwater management system including swales and basins will be constructed. The effects on fish within these watercourses will be mitigated by fish relocation under the Fauna Management Plan (Appendix 5).

Terrestrial Biodiversity

The National Policy Statement of Indigenous Biodiversity (NPS-IB) relates to Significant Natural Areas (SNAs) and management of terrestrial biodiversity values. There are no SNAs within the site. We have assessed that the project is unlikely to have adverse effects that are more than minor on any At-Risk species. The Fauna Management Plan provides procedures to further mitigate potential effects on birds, bats and lizards. The proposed planting along the Herehere Stream will increase vegetated habitat in the project site, and this will have some benefits to terrestrial fauna such as providing food resources for tui.

5.5 Plan Change 9

Hawkes Bay Regional Council issued Plan Change 9 related to water management in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū (TANK) catchments on 9 September 2022 (it currently has legal effect pending appeals). The plan change contains provisions that target erosion control to reduce the adverse of sediment on aquatic ecosystems, and to improve management of stormwater to reduce adverse effects of urban runoff.

Plan Change 9 legislates a collaborative approach to improve freshwater management, setting objectives limits and targets that reflect kaitiaki principles and a continuous improvement approach to development of natural resources and protection of indigenous biodiversity. It sets water use and quality targets for waterbodies in Schedule 26 (Obj Tank 4). It seeks to promote improved management of riparian zones (Obj Tank 8). It seeks to improve ecosystem health in the Karamū and Clive Rivers catchment (Obj Tank 13).

Policy 2 in the Priority Management Approach includes establishing riparian vegetation to reduce macrophytes and temperature in the Karamū/Clive rivers. Policy 11 states the Council will promote and support establishment of riparian vegetation.

Policy 28 supports improvement of stormwater management for urban infrastructure.

Catchment Rules in section 6.10 include TANK 21 Stormwater Activities that addresses erosion, flood conveyance, and visual water quality issues.

The urban stormwater and erosion and conveyance matters are addressed in the application by the Stormwater Management Plan, and riparian vegetation in the landscape concept report (Boffa Miskell, 2026). Overall, the application will improve stormwater management and provide riparian vegetation and therefore aligns with key provisions of the Plan Change 9 as identified above.

[2] Karanema Havelock North Streams Planting Guide (Beca, 2025)

6.0 Recommendations

The following bullet points list measures that are recommended to minimise potential ecological effects associated with the development.

General Works:

- Undertake vegetation clearance and fish relocation in accordance with the Fauna Management Plan.
- Ensure sediment and erosion control measures are implemented in accordance with an Erosion and Sediment Control Plan.
- Take all practical measures to prevent contaminants from entering any watercourses during site works.
- Prepare a spill management plan detailing spill prevention measures and response procedures in the event of accidental discharges of contaminants to the watercourse.

Stream Works:

- Undertake bank recontouring in accordance with the proposed streamworks methodology and design the stormwater basin outlet into the Herehere Stream to minimise the risk of erosion within the watercourse.
- Minimise the extent of any erosion protection materials placed within the stream channel, including stream bed and banks.
- Provide for riparian planting in a Landscape Planting Plan in accordance with planting guidance documentation provided by HDC.

The above matters have largely addressed through the Project Team as part of the design of the Middle Road project, however, Conditions of Consent to guide the development during the Land Development Phase should specifically require compliance with environmental management plans that must be approved by consenting authorities, specifically:

- Erosion and Sediment Control Plan.
- Streamworks Plan.
- Fauna Management Plan.
- A Landscape Planting Plan.

7.0 Conclusions

The majority of the site is flat agricultural land with negligible ecological values. The vegetation featured on the site include shelterbelts, a kiwifruit orchard, farmland trees, and trees around residential dwellings. These trees are mostly exotic and have low indigenous biodiversity values. Investigations of native fauna habitat found that while some trees had suitable features for bat roosting, bats are unlikely to roost in this area. Exotic birds are likely to nest here, together with some native species that are known in Havelock North. Ground habitat searches and tracking tunnel assessments found no evidence of native lizard populations.

The vegetation will be cleared for bulk earthworks. As no lizards were found in our surveys, a Lizard Management Plan or Wildlife Act authority for lizard management is not required. The potential for effects on native bird or bat populations is low and will be managed through clearance procedures to avoid disturbance of nesting birds or roosting bats.

The main ecological feature of the site is the Herehere Stream, which extends for about 580 m along the northern boundary of the site. The stream is a significant watercourse in the Havelock North area that extends for several kilometers upstream and connects to the Karamū Stream about 300 m downstream of the site. It has been recently assessed by WSP (2025) as having moderate values that are affected by modification, water temperature and low dissolved oxygen levels, while nevertheless supporting threatened fish species. It is proposed to restore riparian planting along the stream, mainly on the south side adjoining the development, which will provide benefits such as thermal regulation and aquatic plant control. The planted vegetation will comprise native species, with a mix of shade trees and low-lying groundcover to provide for flood conveyance and public safety and will be detailed in a Landscape Planting Plan.

Other potential effects on streams include construction sediment discharge, urban stormwater contaminant discharges, and hydrological changes resulting from the increase in impervious surface area. Sediment generation potential is relatively low due to the low gradient of the site, and erosion and sediment control and treatment systems will minimise discharges. Sediment discharges will be periodically elevated in association with rainfall events over the period of bulk earthworks (to be completed in one or two seasons). The contribution above background sediment loads is likely to be relatively low, and effects on aquatic communities are likely to be minor. Peak flows will be managed to pre-development levels using stormwater detention basins. Urban stormwater contaminants will be managed using a treatment train approach and are likely to be similar or lower than discharges from other urban areas in Havelock North. The aquatic communities here are relatively tolerant and effects on values such as biodiversity and integrity are likely to be low. Because of the large dilution within the Karamū Stream, no effects are likely to be detectable below the confluence.

In conclusion, we have assessed the potential effects of the proposed development on terrestrial vegetation and fauna, and stream ecological values. The potential for terrestrial ecological effects is low and can be managed through vegetation clearance procedures. Stormwater discharge effects will be minimised using a treatment train approach. Fish will be relocated from the drains within the site prior to earthworks. There are no wetlands within the site. The Effects Management Hierarchy is satisfied, and residual effects will be low or negligible. The proposed riparian planting will have positive effects on the Herehere Stream.

8.0 References

Beca, 2025. Karanema Havelock North Planting Guide. Prepared by Beca Design Practice in partnership with Heretaunga Hastings District Council. Version A. March 2025.

Boffa Miskell, 2026. Landscape Concept Report. Prepared for CDL by Boffa Miskell Limited. 31 July 2026. Draft.

Boffa Miskell, 2026a. Landscape Specification. Prepared for CDL by Boffa Miskell Limited. 31 July 2026. Draft.

DoC, 2024. Protocols for minimising the risk of felling occupied bat roosts (Bat Roost Protocols). Approved by the New Zealand Department of Conservation's Bat Recovery Group. Version 4: October 2024.

Hawkes Bay Regional Council, 2009. Hawke's Bay Waterway Guidelines Erosion and Sediment Control. Prepared by Aqua Terra International Ltd. HBRC Plan Number 4109. April 2009.

Hawkes Bay Regional Council, 2016a. Life Supporting Capacity in Lowland Streams With a focus on the Karamū Catchment. Environmental Science - Water Quality and Ecology. HBRC Report No. RM16-05 – 4782 January 2016.

Hawkes Bay Regional Council, 2016b. Ngaruroro, Tutaekuri, Karamū River and Ahuriri Estuary Catchments State and Trends of River Water Quality and Ecology. HBRC Report No. RM 16-08. Plan Number 4787. Environmental Science - Water Quality and Ecology. July 2016.

Hawkes Bay Regional Council, 2013. Karamū Characterisation Report Supporting Information for Water Allocation HBRC Report No. EMT13/24 – 4557. November 2013.

MfE, 2019. Sediment Attributes and Urban Development. Prepared by Morphum for Ministry for the Environment. Project number P02173. September 2019.

Robertson, C.J.R. & Bull, P.C., 2007. The Atlas of Bird Distribution in New Zealand.

Stark, J. D.; Boothroyd, I. K. G; Harding, J. S.; Maxted, J. R.; Scarsbrook, M. R. 2001: Protocols for sampling macroinvertebrates in wadeable streams. New Zealand Macroinvertebrate Working Group Report No. 1. Prepared for the Ministry for the Environment. Sustainable Management Fund Project No. 5103. 57p

Woods, 2026. Middle Road Project. Erosion and Sediment Control Plan. DWG No. P25-496-00-1800-EW. Prepared for CDL Land. Date 21/08/2026.

Woods, 2026a. Email received from Fergus McArthur dated 24 July 2026.

Woods, 2026b. Email received from Fergus McArthur dated 19 August 2026.

WSP, 2025a. Havelock North Streams Assessment. Ecological Baseline, Constraints and Opportunities. Prepared for Hastings District Council. August 2025.

WSP, 2025b. KARANEMA HAVELOCK NORTH STREAMS EROSION REVIEW 2025. Prepared for Hastings District Council. 22 August 2025.

Appendix 1: Bird Records

All 37 indigenous birds recorded within the Study Area, and which may be present within the proposed Site (eBird grid square). Primary habitat used by each species is shaded dark green and secondary habitat is shaded light green. List sorted by National Conservation status (Robertson et.al., 2021).

SPECIES - Robertson et al. 2012	Scientific Name	CONSERVATION STATUS - Robertson et al. 2021	Native forest	Exotic Forest	Scrub / shrubland	Farmland / open country	Freshwater / wetlands	Coastal / Estuary	Oceanic	Urban/Residential
Kōtuku | White heron	*Ardea alba*	Nationally Critical								
New Zealand dabchick | Weiweia	*Poliocephalus rufopectus*	At Risk - Nationally Increasing								
Long-tailed cuckoo | Koekoeā	*Eudynamys taitensis*	At Risk - Nationally Vulnerable								
Grey duck | Pārera	*Anas superciliosa*	At Risk -Nationally Vulnerable								
White-fronted tern | Tara	*Sterna s. striata*	At Risk - Declining								
Red-billed gull | Tarāpunga	*Larus novaehollandiae scopulinus*	At Risk - Declining								
New Zealand pipit | Pīhoihoi	*Anthus n. novaeseelandiae*	At Risk - Declining								
Black-billed gull | Tarāpuka	*Larus bulleri*	At Risk - Declining								
Banded dotterel | Pohowera	*Charadrius bicinctus bicinctus*	At Risk - Declining								
New Zealand falcon | Kārearea	*Nestor meridionalis septentrionalis*	At Risk - Recovering								
Little shag | Kawaupaka	*Phalacrocorax melanoleucos brevirostris*	At Risk - Relict								
Black shag | Māpunga	*Phalacrocorax carbo novaehollandiae*	At Risk - Relict								
Black-fronted dotterel	*Elseyornis melanops*	At Risk - Naturally Uncommon								
Little black shag | Kawau tūī	*Phalacrocorax sulcirostris*	At Risk - Naturally Uncommon								
White-faced heron | Matuku moana	*Egretta novaehollandiae*	Not Threatened								
Welcome swallow | Warou	*Hirundo n. neoxena*	Not Threatened								
Swamp harrier | Kāhu	*Circus approximans*	Not Threatened								

SPECIES - Robertson et al. 2012	Scientific Name	CONSERVATION STATUS - Robertson et al. 2021	Native forest	Exotic Forest	Scrub / shrubland	Farmland / open country	Freshwater / wetlands	Coastal / Estuary	Oceanic	Urban/Residential
Spur-winged plover	*Vanellus miles novaehollandiae*	Not Threatened								
Silvereye | Tauhou	*Zosterops lateralis lateralis*	Not Threatened								
Shining cuckoo | Pīpīwharauroa	*Chrysococcyx l. lucidus*	Not Threatened								
Sacred kingfisher | Kōtare	*Todiramphus sanctus vagans*	Not Threatened								
Purple swamphen | Pūkeko	*Porphyrio m. melanotus*	Not Threatened								
Pied stilt | Poaka	*Himantopus h. leucocephalus*	Not Threatened								
Paradise shelduck | Pūtangitangi	*Tadorna variegata*	Not Threatened								
North Island tomtit | Miromiro	*Petroica macrocephala toitoi*	Not Threatened								
North Island fantail | Pīwakawaka	*Rhipidura fuliginosa placabilis*	Not Threatened								
New Zealand wood pidgeon | Kererū	*Hemiphaga novaeseelandiae*	Not Threatened								
Parsons bird | Tui	*Prosternadera novaeseelandiae*	Not Threatened								
Morepork | Ruru	*Ninox n. novaeseelandiae*	Not Threatened								
Grey warbler | Riroriro	*Gerygone igata*	Not Threatened								
Grey teal | Tētē-moroiti	*Anas gracilis*	Not Threatened								
Australasian shoveler	*Spatula rhychotis*	Not Threatened								
Black-backed gull | Karoro	*Larus d. dominicanus*	Not Threatened								
Australasian gannet	*Morus serrator*	Not Threatened								
Black swan | Kakīānau	*Cygnus atratus*	Not Threatened								
Bellbird | Korimako	*Anthornis m. melanura*	Not Threatened								

Appendix 2: Tree Species List

Common Name	Scientific Name	Conservation Status (DOC 2024, 2023, National Pest Plant Accord species 2020)
Crack willow	*Salix fragilis* × *S. euxina*	Environmental weed, NPPA pest plant
African boxthorn	*Lycium ferocissimum*	Environmental weed
Casuarina sp.	-	Exotic
Cypress sp.	-	Exotic
Elm sp.	-	Exotic
Eucalyptus sp.	-	Exotic
Kohuhu / black matipo	*Pittosporum tenuifolium*	Native – Not Threatened
Kowhai	*Sophora microphylla*	Native – Not Threatened
Macrocarpa	*Cupressus macrocarpa*	Environmental weed
Manuka	*Leptospermum scoparium*	Native – Not Threatened
Maple sp.	-	Exotic
Melia	*Melia azedarach*	Exotic
Mimosa	*Albizia julibrissin*	Exotic
Monkey Apple	*Syzygium smithii*	Environmental weed, NPPA pest plant
Olive sp.	-	Exotic
Oriental raisin tree	*Hovenia dulcis*	Exotic
Poplar sp.	-	Exotic
Radiata pine	*Pinus radiata*	Environmental weed
Silver birch	*Betula pendula*	Environmental weed
Southern magnolia	*Magnolia grandiflora*	Exotic
Sycamore sp.	-	Exotic
Totara	*Podocarpus totara*	Native – Not Threatened

Appendix 3: Streambank Recontouring Methodology, Herehere Stream

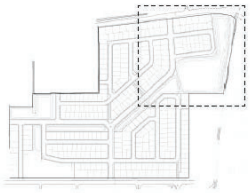
DRAFT

DETAIL PLANS

NORTHERN STORMWATER RESERVE

KEY FEATURES

1. LOOP WALK, 2M WIDE HOGGIN PATH
2. COMMUNITY SPACE, SEATING
3. MULTISPORT SPACE
4. PLAY ALONG THE WAY
5. FRUIT TREES
6. LOW NATIVE PLANTING TO BASIN EDGE WITH SPECIMEN TREES ALONG THE BOTTOM BANK
7. HEREHERE STREAM RESTORATION PLANTING



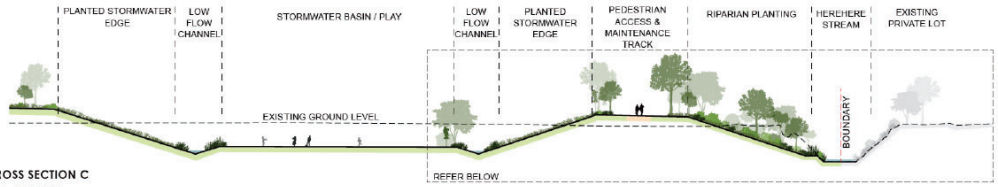


DRAFT

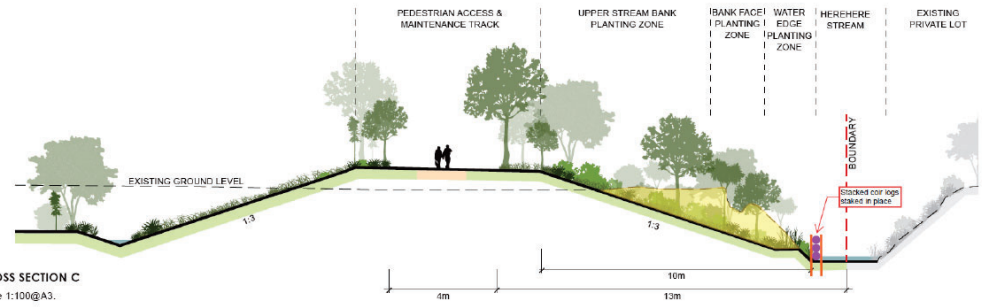
DETAIL PLANS

STORMWATER RESERVE SECTION





CROSS SECTION C
Scale 1:200@A3.



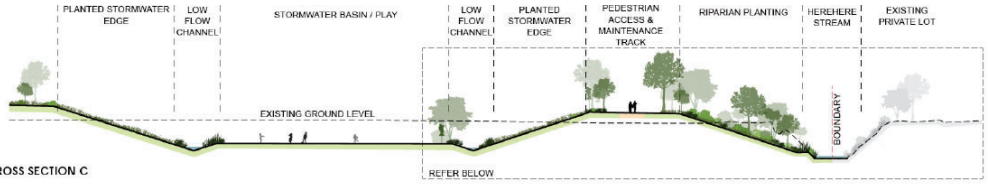
CROSS SECTION C
Scale 1:100@A3.

DRAFT

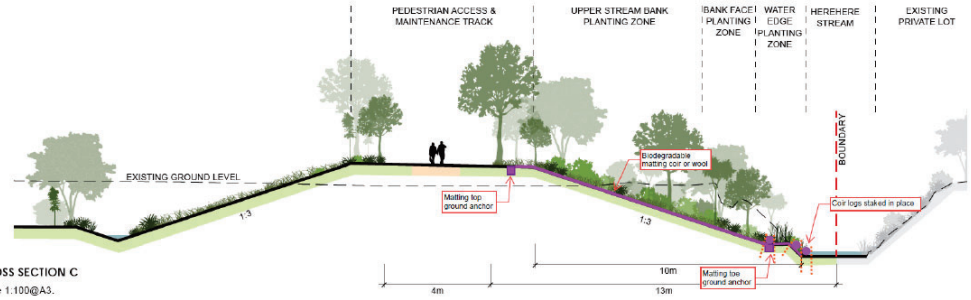
DETAIL PLANS

STORMWATER RESERVE SECTION





CROSS SECTION C
Scale 1:200@A3.



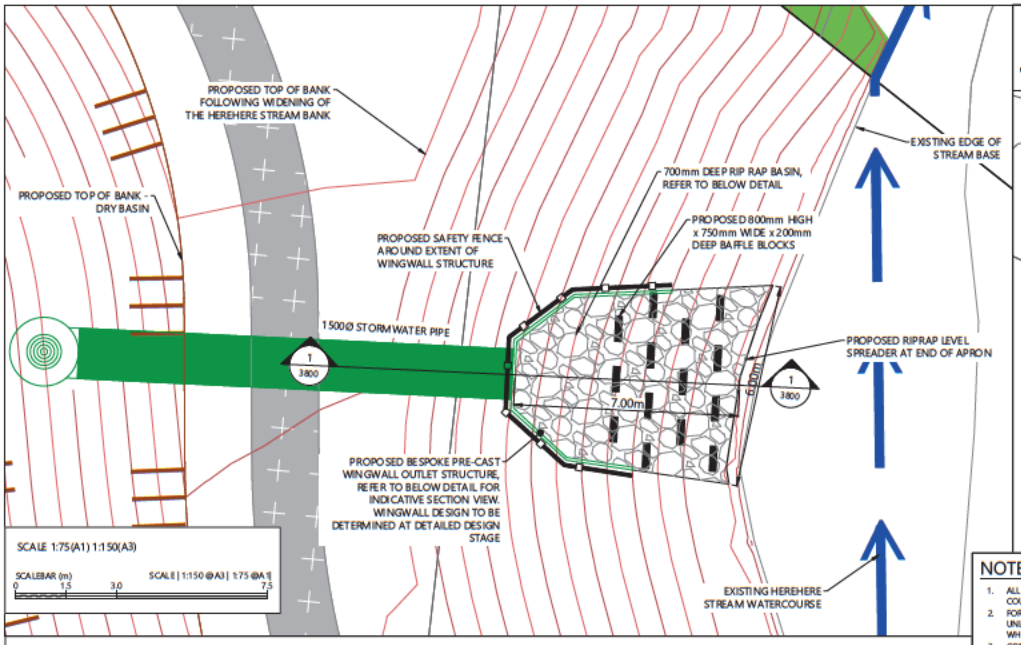
CROSS SECTION C
Scale 1:100@A3.

DRAFT



Appendix 3: Streambank Recontouring Methodology, Herehere Stream

Appendix 4: Stormwater Basin Outlet Structure (Woods, 2026b)

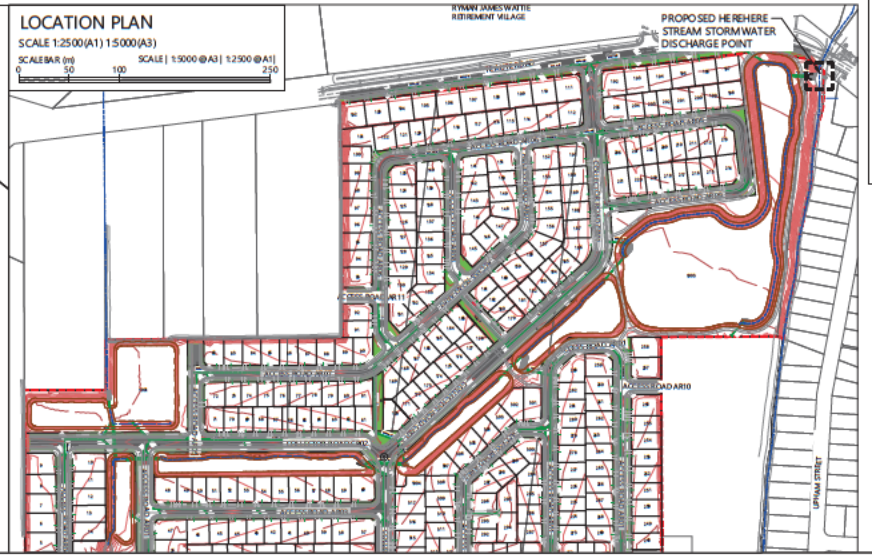


LOCATION PLAN

SCALE 1:2500(A1) 1:5000(A3)

SCALEBAR (m) 0 50 100 250

SCALE | 1:5000 @A3 | 1:2500 @A1

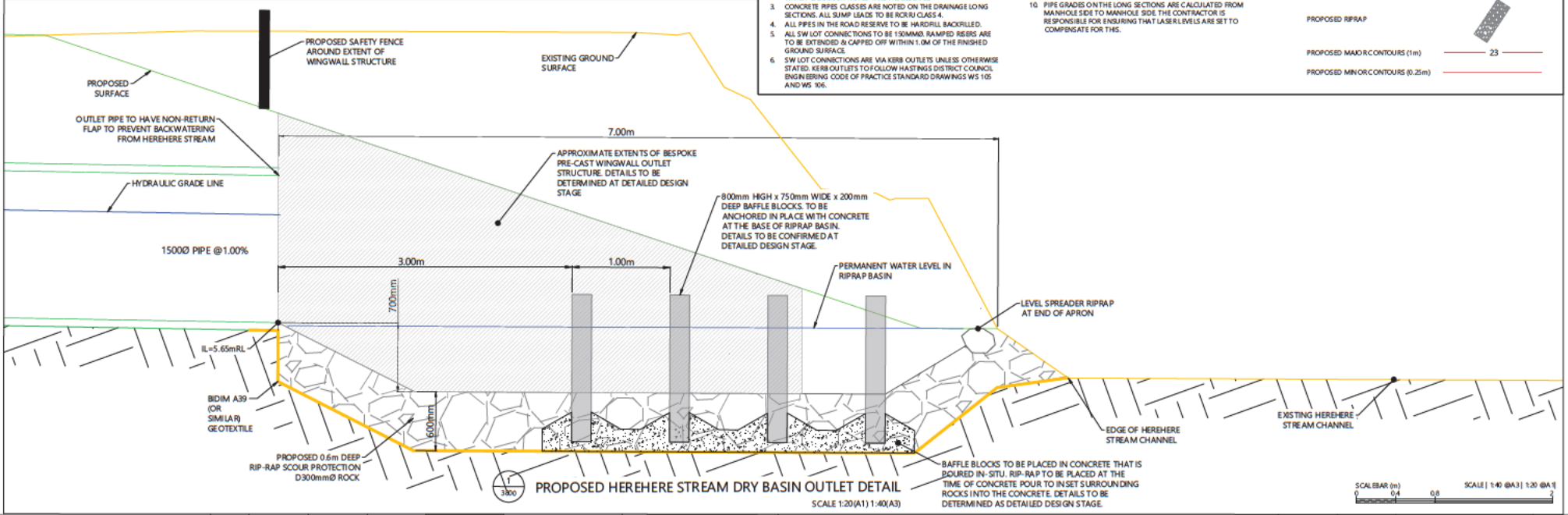


NOTES

1. ALL WORKS & MATERIALS TO COMPLY WITH HASTINGS DISTRICT COUNCIL STANDARDS.
2. FOR PIPE BEDDING DETAILS REFER TO STANDARD DETAIL SHEETS UNLESS OTHERWISE NOTED ON THE DRAINAGE LONG SECTIONS IN WHICH CASE SUCH NOTES TAKE PRECEDENCE.
3. CONCRETE PIPES CLASSES ARE NOTED ON THE DRAINAGE LONG SECTIONS. ALL SUMP LEADS TO BE RCRRJ CLASS 4.
4. ALL PIPES IN THE ROAD RESERVE TO BE HARDRILL BACKFILLED.
5. ALL SW LOT CONNECTIONS TO BE 150MMØ. RAMPED RISERS ARE TO BE EXTENDED & CAPPED OFF WITHIN 1.0M OF THE FINISHED GROUND SURFACE.
6. SW LOT CONNECTIONS ARE VIA KERB OUTLETS UNLESS OTHERWISE STATED. KERB OUTLETS TO FOLLOW HASTINGS DISTRICT COUNCIL ENGINEERING CODE OF PRACTICE STANDARD DRAWINGS WS 105 AND WS 106.
7. ALL MANHOLES TO BE 1050MMØ UNLESS OTHERWISE NOTED ON THE DRAINAGE LONG SECTION IN WHICH CASE SUCH NOTES SHALL TAKE PRECEDENCE.
8. THE CONTRACTOR IS TO PEG MANHOLES & CHECK FINISHED LEVELS (MH LID LEVELS) PRIOR TO ORDERING MANHOLES.
9. ALL MANHOLE LIDS IN CYCLEWAYS AND SHARED PATHS MUST HAVE A CYCLIST FRIENDLY COVER.
10. PIPE GRADES ON THE LONG SECTIONS ARE CALCULATED FROM MANHOLE SIDE TO MANHOLE SIDE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT LASER LEVELS ARE SET TO COMPENSATE FOR THIS.

LEGEND

- SITE BOUNDARY
- PROPOSED STORMWATER LINE AND PIT 3/1
- PROPOSED RIPRAP
- PROPOSED MAJOR CONTOURS (1m) 23
- PROPOSED MINOR CONTOURS (0.25m)



PROPOSED HEREHERE STREAM DRY BASIN OUTLET DETAIL

SCALE 1:20(A1) 1:40(A3)

REVISION DETAILS		INT	DATE		
1	ISSUED FOR COUNCIL COMMENT	NV	21/08/2026	DESIGNED	LZM
				DRAWN	LZM
				CHECKED	BLO
				APPROVED	BF

BUILDING B, LEVEL 1
8 NUGENT ST, GRAFTON,
AUCKLAND 1023
+64 9 308 9229
WOODS.CO.NZ

CDL LAND NEW ZEALAND LIMITED

MIDDLE ROAD PROJECT

HEREHERE STREAM STORMWATER OUTLET DETAIL

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	HASTINGS DISTRICT	
DWG NO	P25-496-00-3800-DR	

Plot Date: 3:20:33 pm,19 August 2026, LOUISZS

File: C:\1250\NIEROY\DAT\AWP-ARC-APP-02\P25-496 - MIDDLE RD FAST TRACK_25600\02 DRAWINGS\01 ENG\P25-496-00-3800 STORMWATER DETAILS.DWG

Appendix 5. Draft Fauna Management Plan

Boffa Miskell

Middle Road Substantive Application

Fauna Management Plan
Prepared for CDL

22 September 2026



Boffa Miskell is proudly a
Toitū net carbonzero certified consultancy

Document Quality Assurance

This document may be cited as:
Boffa Miskell Limited 2026. *Middle Road Substantive Application: Fauna Management Plan*. Report prepared by Boffa Miskell Limited for CDL.

For any information regarding this report please contact:
Eddie Sides | Ecology | Senior Principal | info@boffamiskell.co.nz

Revision /version:	Issue date:	Prepared by:	Description:	Reviewed by:
Draft	06/08/2026	Eddie Sides Senior Principal Ecology	Draft report issued to client	Katrina McDermott Principal Ecology
Final Draft	12/08/2026	Eddie Sides Senior Principal Ecology	Final report issued to client	Katherine Muchna Senior Principal Ecology
Final	22/09/2026	Eddie Sides Senior Principal Ecology	Final report	-

Approved for issue:
Eddie Sides | Ecology | Senior Principal | 22 September 2026

Release and Reliance

This report has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. If it is intended to support an application under the Fast-track Approvals Act 2024, it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application.

While Boffa Miskell Limited has exercised due care in preparing this report, it does not accept liability for any use of the report beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

File name & Project number: [BM261038 Middle Road Fauna Management Plan_v4.docx]

Template revision: 20230505 0000
Cover photograph: Middle Road site, © Woods, 2025]

CONTENTS

1.0 Introduction 1

1.1 Background 1

1.2 Overview of Fauna Management 4

1.3 Wildlife Act and Fauna Protections 4

2.0 Site Fauna and Habitats 5

2.1 Lizards 5

2.2 Bats 5

2.3 Avifauna 6

2.4 Fishes 6

3.0 Bird Management 6

3.1 Nest Check Protocols 6

3.2 Monitoring and Documentation 7

4.0 Bat Management 7

4.1 Bat Roost Protocols 7

4.2 Monitoring and Documentation 8

4.3 Incidental Discovery Protocol 8

5.0 Lizard Management 8

5.1 Incidental Discovery Protocol 8

6.0 Terrestrial Fauna Reporting requirements 9

7.0 Native Fish Capture and Relocation Plan 9

7.1 Introduction 9

7.2 Methodology 11

7.3 Pest Fish 12

7.4 Demucking Supervision 12

7.5 Biosecurity 13

7.6 Incidental Discovery 13

7.7 Reporting 13

8.0 References 14

Appendices

Appendix 1: Bat Management Flow Chart

1.0 Introduction

1.1 Background

CDL Land New Zealand Ltd (CDL) is preparing a substantive application under the Fast-track Approvals Act 2024 (FTAA) for a proposed residential development at Middle Road, Havelock North. The Middle Road site comprises approximately 30.6 ha of land across five titles owned by CDL at 92, 108 and 148 Middle Road, and 139 Te Aute Road, Havelock North (Figure 1). The site sits immediately southwest of the established Havelock North residential area, with suburban housing to the north and east and rural-residential properties to the southwest.

An ecological report on the site has been prepared (Boffa Miskell, 2026). The following ecological features were noted:

- The site is largely flat and has been intensively farmed with cropping and grazing and some horticulture. There are few remaining ecological features of value.
- The main ecological feature on the site is the Herehere Stream. This runs along the northern boundary of the site and joins the Karamū Stream about 300 m further downstream. Other site drains within the site connect to the Herehere Stream and on to the Karamu Stream.
- Vegetation on the site consists of mature trees around the 92 Middle Road, shelterbelts, streambank vegetation along Herehere Stream and specimen trees. The trees are mainly exotic, less than 25 years of age and do not form large contiguous areas.
- This vegetation provides some habitat for birds, similar to that found in the surrounding landscape.
- Bats have not been recorded in the locality and are unlikely to roost here.
- Native lizards were assessed as unlikely to be present, and hand searching and tracking tunnels deployed in potential habitat areas did not detect any.
- The site contains drainage channels that are not classified as streams but are likely to provide habitat for native species such as shortfin eels (*Anguilla australis*).

Most of the vegetation within the site will be removed during earthworks, together with the drains. The Herehere Stream bank will be recontoured but works within the streambed will be largely avoided.

This Fauna Management Plan (FMP) describes the methods to mitigate or minimise adverse construction effects on indigenous fauna, including lizards, bats and birds and fish. This will be achieved by implementing industry-accepted best practice methods and undertaken by suitably qualified and experienced specialists.

File Ref: U:\2026\BM261038_ESI_Middle_Road_Substantive\GIS\BM261038_ecology.aprx BM261038_01_Site_FMP2:27 pm



Boffa Miskell

www.boffamiskell.co.nz

This plan has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. If it is intended to support an application under the Fast-track Approvals Act 2024 it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application. While Boffa Miskell Limited has exercised due care in preparing this plan, it does not accept liability for any use of the plan beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

0 100 m

1:5,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Site drains/watercourses
- Watercourse (LINZ)
- Parcels

MIDDLE ROAD ECOLOGY

Site Location and Aquatic Features

Date: 06 August 2026 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] | Drawn: JWa | Checked: ESi

Figure 1



This plan has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. It is intended to support an application under the Fast-track Approvals Act 2024. It may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application. While Boffa Miskell Limited has exercised due care in preparing this plan, it does not accept liability for any use of the plan beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

Boffa Miskell

www.boffamiskell.co.nz

MIDDLE ROAD ECOLOGY

Terrestrial Habitat Features and Values

Date: 06 August 2026 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] | Drawn: JWa | Checked: ESi

Figure 2

1.2 Overview of Fauna Management

Fauna management comprises the following:

- Birds – tree removal outside of nesting season (March to July inclusive) OR nest check and avoidance protocols (August to February).
- Bats – identification of potential roost trees. Acoustic surveys required prior to felling. Acoustic surveys limited to the period when bats are active (September to April). Incidental discovery protocols.
- Lizards – incidental discovery protocols.
- Fish – native fish capture and relocation prior to earthworks.

Terrestrial fauna management must be completed prior to and during vegetation clearance.

Fauna management must be undertaken within seasonal time constraints to avoid periods when lizards and bats are inactive (May-October, inclusive), and as far as possible, when native birds are nesting.

Vegetation removal and earthworks activities must be managed to allow sufficient time to survey and capture (where applicable) fauna prior to site works.

If fauna salvage is required, the release site must be of a suitable quality and extent to support the population of the species to be relocated.

The project ecologist will confirm that these surveys have been undertaken and confirm what further action (if any) is required as a result of the findings.

The Project Ecologist will notify the Project Manager in writing to confirm that fauna management is complete and habitat clearance may commence.

1.3 Wildlife Act and Fauna Protections

Native animals including bats, birds, lizards, frogs and some invertebrate species are ‘absolutely protected’ under the Wildlife Act (1953, s63 (1) (c)), and their habitats are protected by the Resource Management Act (1991) and administered by the DOC and local authorities (WRC and Hauraki District Council, HDC), respectively.

A Wildlife Act Approval is required to handle, catch, release or kill native wildlife including lizards, birds, bats and frogs. Wildlife Act Approvals include conditions that need to be met to ensure the safety of wildlife. These conditions may include limiting who may undertake the activity (e.g. experienced persons only), a maximum number of animals that can disturbed and the timing, methodology and quantity of surveys.

The Fast Track Approvals Act (2024) was enacted to facilitate the delivery of infrastructure and development projects with significant regional or national benefits, combining the requirements of several other Acts in a single Approvals process. Information required for Wildlife Act Approvals are included in Schedule 7. This includes the purpose and nature of the proposed activities, the effects of the proposed activities on protected wildlife, and methods proposed to avoid and minimise adverse effects. This requires species protected under the Wildlife Act and known or predicted to be present to be listed 2(1)(d), and impacts on threatened, data deficient, and at-risk wildlife species (as defined in the New Zealand Threat Classification System) to be assessed.

This FMP describes how potential adverse effects on protected fauna will be mitigated.

No Wildlife Act Approvals are sought as part of this application.

2.0 Site Fauna and Habitats

As described in the Ecological Assessment Report (Boffa Miskell, 2026), most of the site comprises grazed pasture with negligible fauna habitat value.

Potential habitat is provided by trees, debris and rank grasses around the margins of the site . These may provide habitats for native lizards, bats and birds. The drains may provide habitat for native fish. The potential species present and potential impacts are described below.

2.1 Lizards

Desktop review, manual searches and tracking tunnel surveys were undertaken (Figure 2). No lizard species have previously been recorded within or adjacent to the site. Five species are known to be present within 15 km of the site, including northern grass skink (*Oligosoma polychroma*), northern spotted skink (*O. kokowai*), Hawke's Bay skink (*O. auroraense*), ngahere gecko (*Mokopirirakau* "southern north island") and barking gecko (*Naultinus punctatus*). No lizards were detected in hand searching or tracking tunnel surveys. Based on the quality, extent and fragmentation of lizard habitat, paired with the results of the tracking tunnel survey, this site is unlikely to be occupied by lizards.

2.2 Bats

There is a noticeable lack of recorded surveys for bats around the coastal Napier, Hastings and Havelock North areas and areas of potential suitable bat habitats nearby may not have been surveyed.

The closest long-tailed bat (*Chalinolobus tuberculatus*) records are c. 19 km to the south of the Sites boundary at Mohi bush in 2016. Long-tailed bats have been known to travel in excess of 50 km from their roost sites and therefore are in the foraging range of a known bat population.

The nearest short-tailed bat (*Mystacina tuberculata*) records are over 70 km from the project site. This species prefers indigenous forest habitats and is extremely unlikely to be present.

Vegetation within and near the site includes several large trees that contain roost features. Individual trees were identified and geolocated on 5 February 2026. A total of 15 separate potential roost trees and one shelter belt on the eastern side of the property contain refuge features such as holes or crevices.

The potential for long-tailed bats to be utilizing the site is very low.

2.3 Avifauna

A total of 37 species of indigenous birds have been identified within the local OSNZ and eBird grid-square, with 13 classified as Threatened, At-Risk and one (kōtuku / white heron (*Ardea albais*)) classified as Threatened, Nationally Critical (Robertson *et al*., 2021). The site is unlikely to provide habitat for these threatened species, although several of these species may traverse the site at times.

The site lacks perching / roosting / feeding / nesting habitat for many native birds. Some native birds, including cormorant and heron species may utilise large trees as nesting habitat due to proximity to the coast/Tukituki River. Additionally, during construction, banded dotterel which are known to be present in the area, may nest in the earthworks area.

2.4 Fishes

Watercourses within the site comprise drains (Bake and Pomeroy Drains) in the north of the site connecting to the Herehere Stream, and the Iona development stormwater management area and connecting drains (Gilpin Drain) located in the south of the site. The latter pass under Te Aute Road and join Karamu Stream to the north.

These drains provide slow-flowing, soft bottomed habitats with overhanging grasses. Nutrient concentrations and summer water temperatures are likely to be high, and minimum dissolved oxygen concentrations, low.

A range of species have been recorded in the connected habitats (Herehere Stream and Karamu Stream), these being: common bully (*Gobiomorphus cotidianus*), inanga (*Galaxias maculatus*), shortfin eel (*Anguilla australis*), longfin eel (*A. dieffenbachii*), common smelt (*Retropinna retropinna*), goldfish (*Carassius auratus*, exotic) and mosquitofish (exotic), and freshwater crayfish or kōura. Of these, longfin eel and common smelt are classified as At Risk-declining (Dunn *et al*, 2025), inanga as Threatened-Nationally Vulnerable, and Gambusia as an *Unwanted Organism* under the Biosecurity Act 1993.

Shortfin eel, goldfish and mosquitofish may be abundant in these drains, while other species are likely to be rare.

3.0 Bird Management

3.1 Nest Check Protocols

Vegetation clearance within the works footprints shall, as far as practicable, take place outside the native bird breeding season (August-February inclusive).

For tree felling occurring in the months of March to July, no bird management is required.

If vegetation clearance is undertaken during the main breeding season, a bird and nest survey will be undertaken by an appropriately qualified and experienced ecologist. The bird and nest survey protocols are:

- Any vegetation scheduled for removal will be surveyed for native bird nests within 24 hours prior to clearance.
- If an active native bird nest is identified during the visual inspection, all vegetation removal within 20m of the nest will cease until the ecologist has confirmed that the nest has failed, or the chicks have fledged. This area will be clearly demarcated to ensure the vegetation is not accidentally felled.
- Once an area of vegetation has been confirmed clear of active native bird nests (i.e. the chicks have fledged or the nests have failed), vegetation clearance will commence as soon as possible to prevent birds laying a second clutch.

3.2 Monitoring and Documentation

The findings of each site clearance will be documented and reported. The following information will be included: if any active bird nests, or occupied crevices were observed; if vegetation clearance was delayed because of an active nest was observed; the date of clearance; and if any bird nests were missed. Survey details (climatic conditions, time and date, and search effort) will also be recorded.

4.0 Bat Management

4.1 Bat Roost Protocols

Bat management procedures shall be in general accordance with the current DOC guidelines "Protocols for minimising the risk of felling occupied bat roosts (Bat Roost Protocols)" (v4: 2024).

Tree felling must be carried out between 1 October and 30 April when bats most active so are easier to detect and less vulnerable to disturbance[1].A flow chart showing the process for tree removal is provided in Appendix 1 (from DoC, 2024).

- Acoustic bat monitors (ABMs) should be used to detect bat activity in the first instance. These must be installed by someone accredited with Competency 3.1[2] to determine bat presence around trees due to be felled.
- Surveys should be undertaken over a minimum of two consecutive valid survey nights[3] with no bat activity to have confidence that bats are not roosting in the clearance area.
- If there is uncertainty, and indications of a bat roost (e.g., crevice with staining), a trained arborist may climb the trees to check for bats under the direction of an approved bat specialist. The bat specialist must be accredited with Competency 3.3.

[1] Bat surveys can be undertaken in North Island when temperatures exceed 8 degrees for the first four hours after sunset (Borkin et al 2023), on still, dry nights. Acoustic recorder (ABM) should begin recording no less than half an hour before sunset.

[2] A set of competencies developed by the NZ Bat Recovery Group to ensure that anyone working with bats is competent to do so.

[3] See climatic conditions above.

- If a bat is detected, surveys must continue until the bat(s) has moved to a new roost, as indicated by two nights with no bat passes.
- If bats continue to use the roost, there is uncertainty about whether bats have left the roost, or there is high bat activity in the area, an ecologist accredited with all level 3 competencies will advise on how to proceed, consistent with the Bat Roost Protocols. The Operations Manager at DOC Hauraki will be advised.
- Trees can be felled if no bats are present. Trees must be felled on the day of inspection / on the day following the last night of survey.
- Felled trees must be checked for bats. Accidental discovery and mortality protocols are provided in Section 9.

4.2 Monitoring and Documentation

No further action / monitoring is required after trees are felled and checked for bats. Reporting will include a record of any trees that contain bat roosts and details the size, location and type of tree. Where no bats are detected within potential bat roost trees within the vegetation clearance areas then survey data will be provided separately.

4.3 Incidental Discovery Protocol

If a bat (intact, injured or dead) is discovered on the ground or in vegetation at any point during site clearance or geotechnical works, works will pause immediately and the DOC Hotline called (0800 DOC HOT, 0800 362 468). Works will not resume without approval from DOC. More detailed instructions for managing bat discovery during vegetation maintenance works can be found in the 2024 DOC Bat Roost Protocols (V4) and Bat care for first responders (Wildlands, 2019).

5.0 Lizard Management

While native lizards have been assessed as unlikely to be present, it is possible that individuals may be discovered (injured or deceased) during Project works, and an ecologist will not be on site to assist. In the event of fauna injury / mortality, the following procedures should be followed.

5.1 Incidental Discovery Protocol

If an injured native skink or gecko is discovered, the animal should be placed in a box or container with holes in the lid and moist earth/leaf litter from the site and kept in a cool, shaded place. The Project ecologist should be contacted immediately, and they will notify DOC. If a dead animal is discovered, it should be placed in a ziplock bag in a secure container and the project ecologist contacted. The project ecologist will contact DOC and organise an examination if required.

All skink observations must be recorded and a qualified ecologist consulted to confirm likely native or exotic status. If a skink observed during site works is assessed as likely to be native, all works within 10 m of that area will cease and that part of the site and any connecting habitats will be fenced off until a suitably qualified ecologists can undertake a search.

6.0 Terrestrial Fauna Reporting requirements

Methods and results of all ecological surveys related to site clearance will be recorded and reported to Hawkes Bay Regional Council.

Records will include:

- Details of bird nests and bat roosts and actions taken to avoid damage to active nests / roosts.
- Details of any accidentally discovered fauna and steps taken following discovery.

7.0 Native Fish Capture and Relocation Plan

7.1 Introduction

Native fish will be captured and relocated prior to reclamation of the drains within the site in accordance with this Native Fish Capture and Relocation Plan (NFCRP).

The aim of fish capture and relocation is to mitigate the adverse effects of earthworks on fish populations by minimising fish mortality to the extent practicable.

A combination of capture methods is expected to be used. The process will be supervised by a qualified and experienced freshwater ecologist. The methods, sequencing and effort are outlined below but may be modified if there are opportunities to improve effectiveness and efficiency.

Fish must be handled, stored, transported and released with due care and biosecurity measures implemented to prevent the spread of pests and diseases.

It is proposed to release fish into the Karamu Stream, which contains a large volume of suitable habitat in which fish can disperse and find resources and avoid predation. The Karamu Stream is within the same network so there will be no transfer between populations or into areas where species are not already present. Multiple release points will be used if necessary, depending on fish numbers.

The fish management methods described here will be finalised in consultation with Tangata Whenua in their role as kaitiaki.

7.1.1 Approach

The fish capture and relocation is expected to comprise the following steps:

1. Programme the works during clear weather window and low flow conditions.
2. Inspect drains to confirm suitable habitats and methods.
3. Isolate fishing reaches with temporary netting or earth bunds.
4. Conduct netting where depth is suitable.
5. Conduct electrofishing and/or hand netting in coordination with dewatering.
6. Conduct demucking with ecologist supervision.
7. Complete filling.
8. Report results to Hawkes Bay Regional Council.

7.1.2 Permits

The fish capture and relocation must be undertaken by an ecologist holding the appropriate Permits from Fish and Game NZ and the Ministry for Primary Industries.

Electrofishing machine operators must also hold a valid electrofishing certificate.

7.1.3 Roles and Responsibilities

The Project Manager shall:

- Schedule the works for a period of low flows and fine weather forecast.
- Arrange site preparation including isolation of the works area diversion of stream flows, installation of coffer dam and dewatering.
- Communicate the earthworks programme, methodology, hazards and any matters that may affect work undertaken under this NFCRP with the ecologists.
- Provide the completion report to Hawkes Bay Regional Council.

The Project Ecologist shall:

- Confirm with the Project Manager that that site conditions are suitable and safe before commencing.
- Undertake fish capture and relocation using industry standard methodologies and within the conditions of this NFCRP and operating permits.
- Confirm to the site engineer that fish capture and relocation has been completed and streamworks may proceed.
- Provide a completion report to the project Manager.

7.1.4 Anticipated Fish Capture

There is approximately 800 m of drain environment to be fished. Given the existing habitat conditions and extent of stream, we expect to capture high numbers of shortfin eel (*Anguilla australis*), and low to moderate number of other native and exotic species.

7.2 Methodology

7.2.1 Stream Inspection

A suitably qualified freshwater ecologist shall inspect the stream reach and determine the extent of fishable reaches, location of isolation netting, and methods to be used in each fishing reach.

Habitat includes any flowing or standing water that fish may survive in. Habitat must have clear areas or suitable depth for deployment of fyke nets. If necessary, machines may be used to clear vegetation.

If fish habitat is present, fish capture and relocation will be undertaken, following the methods described below.

If no fish habitat is present or if the conditions are unsuitable for the proposed capture methods (e.g. too shallow), native fish capture will not be undertaken. Conditions will be photographed and documented, and demucking supervision will be undertaken.

7.2.2 Capture Methods

The drain section will be isolated using a coffer dams or temporary netting.

Baited fyke nets will be deployed at a minimum of 50 m intervals for a minimum of 4 nights. This may be extended up to a maximum of 8 nights.

Baited Gee minnow traps will also be deployed at 50 m intervals but may be discontinued if not found to be effective.

Repeat electrofishing passes will be undertaken in coordination with dewatering. It may be undertaken prior to dewatering or after partial dewatering. If pumps are used for dewatering the intake should be equipped with a 3 mm mesh cover or cage. The aim of dewatering is to provide an optimal depth for electrofishing and/or concentrate fish into capture areas.

7.2.3 Release Site

Fish will be released into the Karamū Stream. This stream is part of the same stream network and is likely to have sufficient habitat volume to hold additional fish and allow them to disperse. Multiple release sites will be used if necessary.



Photo 1. Karamu Stream, proposed release site.

7.2.4 Storage and Transport

All captured fish will be held in a large bucket or bin with a lid. Fish handling and duration of holding will be minimised to reduce fish stress. All fish shall be released within 4 hours. Multiple buckets will be used to prevent crowding. Fish of different species and sizes will be separated to avoid predation while in storage or transport. Fish will be handled with wet hands. Buckets will be kept in the shade if practicable and water temperature will be monitored. A battery powered aerator used. Use of chemical additives is not proposed.

7.3 Pest Fish

Pest species will be euthanised using Aqui-S, a commercial non-toxic anaesthetic based on clove oil that is used on salmon farms. Diseased fish may also be euthanised. Dead fish will be disposed of hygienically.

7.4 Demucking Supervision

Once fish capture is completed (or if it is not practicable), the drains will be demucked under ecologist supervision. Demucking will be undertaken using an excavator with a hardpan bucket, with the material from the streambed spread in a layer adjacent to the stream channel. The material will be visually searched by the ecologist, and any fish observed will be hand fish captured and relocated.

7.5 Biosecurity

All fish salvage equipment shall be thoroughly cleaned before and after use to prevent transfer of invasive aquatic organisms. Any visible soil or organic material will be removed. Items to be treated with diluted bleach or sterigene solutions and thoroughly dried. No equipment exposed to Waikato waterways will be used, to ensure there is no contamination with gold clam (*Corbicula fluminea*).

7.6 Incidental Discovery

If further native fish are discovered by contractors after demucking, they will be captured and held in a bucket of water, and the ecologist advised. The ecologist will advise on release conditions.

7.7 Reporting

A completion report will be provided to Hawkes Bay Regional Council by the consent holder within 20 days of completion of works under this FMP. The report shall include:

- Date and time of capture.
- Name of ecologist undertaking fish capture.
- Permit authorities.
- Stream habitat conditions at time of capture.
- Release site location and habitat conditions.
- Capture methods.
- Fish species and number captured and relocated.
- Fish euthanised.
- Fish mortality during capture.
- Assessment of capture effectiveness.

Catch and relocation data shall be submitted to the NIWA Freshwater Fish Database.

8.0 References

Boffa Miskell Limited 2026. Middle Road Substantive Application: Ecological Assessment. Report prepared by Boffa Miskell Limited for CDL.

Borkin, K. M., Giejsztowt, J., McQueen-Watton, J., & Smith, D. H. (2023). Influence of weather on long-tailed bat detection in a North Island exotic forest. New Zealand Journal of Ecology, 47(1).

Dunn et al, 2025. Conservation status of New Zealand freshwater fishes, 2023. NEW ZEALAND THREAT CLASSIFICATION SERIES 46. NZ Department of Conservation. Revised February 2026.

DoC, 2024. Protocols for minimising the risk of felling occupied bat roosts (Bat Roost Protocols) Version 4: October 2024 approved by the New Zealand Department of Conservation's Bat Recovery Group. https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/bats/bat-recovery/protocols-minimising-risk-felling-occupied-bat-roosts.pdf

Robertson *et al*, 2021. Conservation status of birds in Aotearoa New Zealand, 2021. NEW ZEALAND THREAT CLASSIFICATION SERIES 36. NZ Department of Conservation. December 2021.

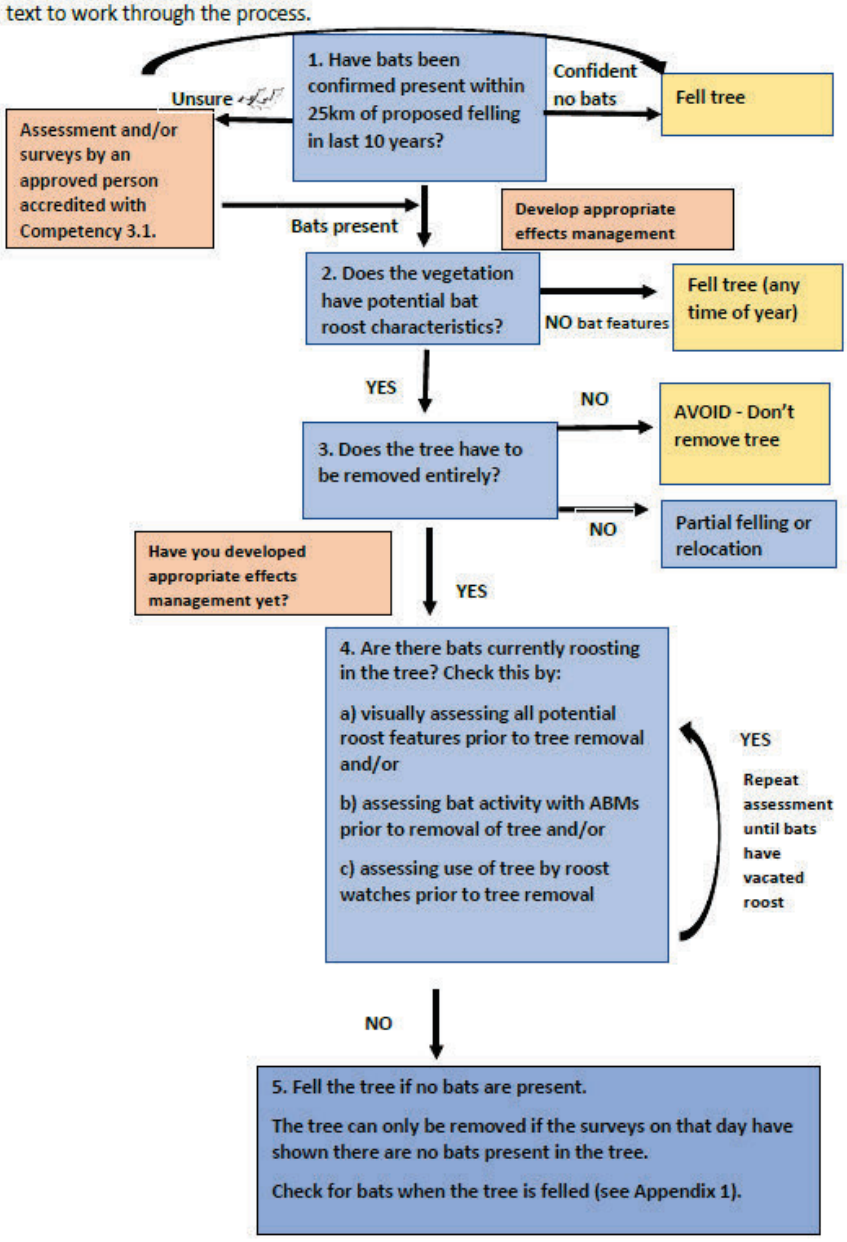
Wildlands (2019). Advice for first responders. Appendix 6 of Initial veterinary Care for New Zealand bats.

Appendix 1: Bat Management Flow Chart

DoC, 2024. Protocols for minimising the risk of felling occupied bat roosts (Bat Roost Protocols) Version 4: October 2024 approved by the New Zealand Department of Conservation's Bat Recovery Group.

Figure 1. Tree removal in bat areas flow chart

Each numbered step relates to a step in the Decision Tool for Tree Removal. Follow each step fully in the text to work through the process.



Together. Shaping Better Places.

Boffa Miskell is a leading New Zealand environmental consultancy with nine offices throughout Aotearoa. We work with a wide range of local, international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, Te Hīhiri (cultural advisory), engagement, transport advisory, climate change, graphics, and mapping. Over the past five decades we have built a reputation for creativity, professionalism, innovation, and excellence by understanding each project's interconnections with the wider environmental, social, cultural, and economic context.



www.boffamiskell.co.nz

Whangarei	Auckland	Hamilton	Tauranga	Wellington	Nelson	Christchurch	Queenstown	Dunedin
09 358 2526	09 358 2526	07 960 0006	07 571 5511	04 385 9315	03 548 8551	03 366 8891	03 441 1670	03 470 0460