

Memorandum

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Attention:	Hong Lu
Company:	Kings Heights Group Limited
Date:	27/03/2023
From:	Ella Sussex & Dr Sarah Flynn
Message Ref:	Preliminary ecological assessment
Project No:	BM230082

Introduction

Boffa Miskell has been engaged by Kings Heights Group Limited to undertake a high-level ecological assessment of the site at 82 Hobsonville Rd, 'the Site'. The aim of this preliminary assessment is to describe flora and fauna values of the Site and to identify potential ecological constraints to development.

Kings Heights Group Limited are proposing the development of a retirement village at 82 Hobsonville Rd. The Site is currently zoned 'Future Urban' under the AUP (OP). The works would encompass the majority of the property, whilst retaining and enhancing a corridor of riparian vegetation surrounding the stream that traverses the middle of the Site. We understand this memorandum will form part of an application to the Minster for the Environment for referral under the Covid-19 Recovery (Fast-track Consenting) Act 2020.

Survey

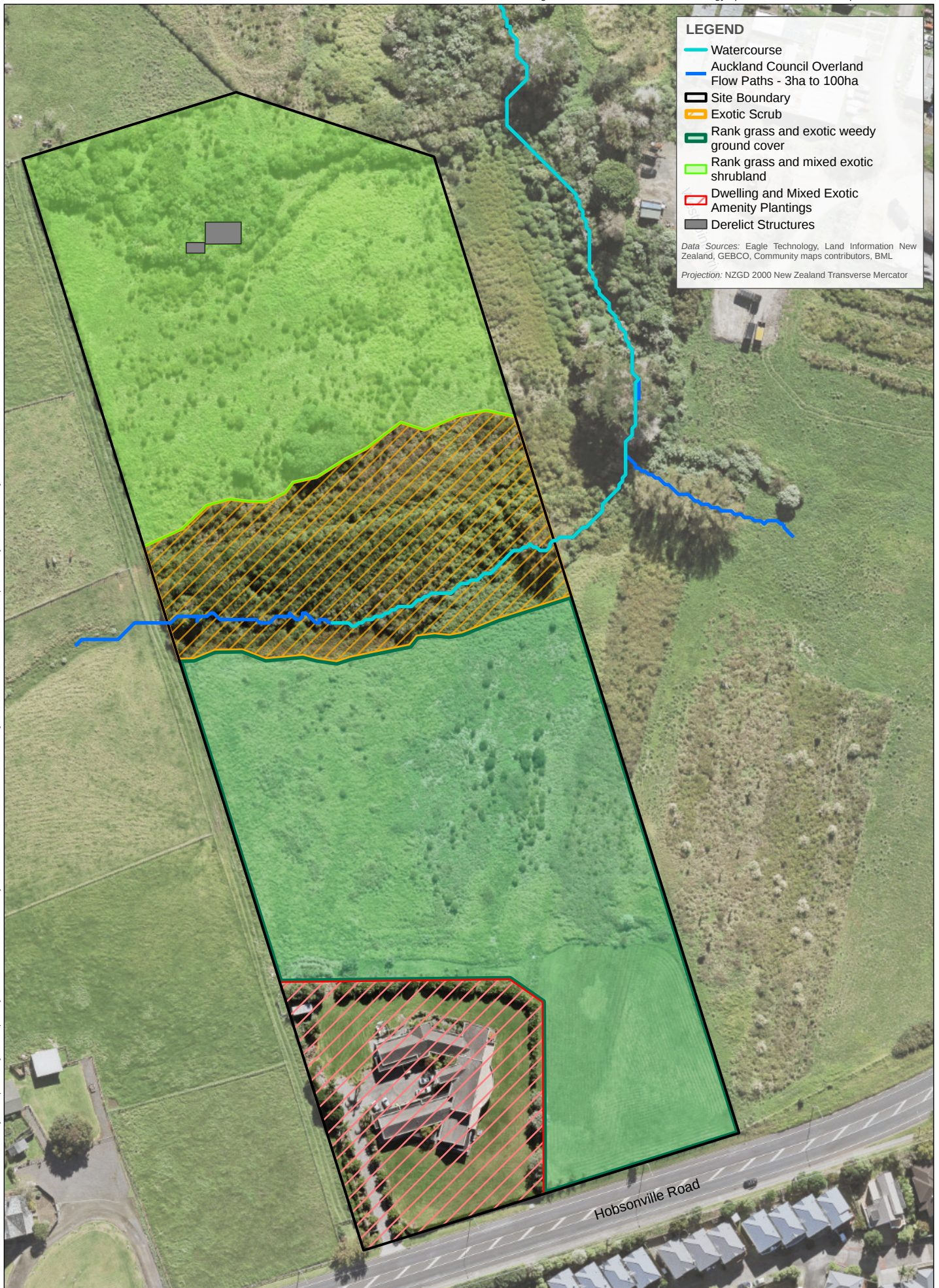
A high-level literature review of the Auckland Unitary Plan (AUP) and further desktop research was undertaken to assess the current and historical ecological values of the site, including any AUP overlays. Following this desktop analysis, Boffa Miskell ecologists undertook a walkover survey of the Site on 25 February 2023. The survey focused on the identification and delineation of any potential wetland features, a description of native vegetation, and investigating possible habitat value for native fauna (including avifauna, lizards and bats). An assessment of the stream within the Site (identified from prior desktop analysis) was also undertaken. Key features of the site are shown in Figure 1.

Ecological values

Vegetation and habitats

No significant native vegetation is present within the Site and it contains no Significant Ecological Area overlays under the AUP (as shown on Auckland Council's Geomaps). Rank grassland (mainly kikuyu, with patches of vasey grass and Yorkshire fog) covers approximately two thirds of the Site. Patches of Chinese privet-dominated scrub and shrubland are interspersed through the grassland north of the watercourse (Figure 1), with patchy infestations of climbing asparagus in the understorey. Large patches of Japanese honeysuckle and briar rose vineland are present amongst the grassland south of the watercourse.

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Dense, exotic-dominated scrub (mainly Chinese privet, with emergent tree privet and monkey apple) surrounds the watercourse. Native shrubs and saplings (mainly matipo and karamu, with sapling pigeonwood) are sparsely present and occasionally emergent throughout the scrub. A heavy infestation of Japanese honeysuckle covers the southern margin of the watercourse, and extends across the scrub canopy and into the stream bed in places. Minimal understorey or ground cover vegetation is present beneath the scrub due to the heavy shade, while leaf litter and woody debris is sparse.

Mixed (mainly exotic) amenity plantings surround the existing dwelling and driveway.

Wetland Assessment

The site walkover traversed modelled flowpaths (as shown on Auckland Council's Geomaps) to determine whether any natural inland wetlands are present (as defined in the National Policy for Freshwater Management, 2020). All flowpaths are covered in deep swards of kikuyu, and were not distinguishable from the surrounding hillslope. There are no wetland features on the site.

Freshwater values

Auckland Council GeoMaps shows an intermittent/ ephemeral stream on the western side of the Site flowing from west to east and transitions to a permanent stream near the middle of the Site. The stream was inspected during the site walkover during a period of steady rainfall. The watercourse has a poorly defined but distinct, soft bottomed stream bed along the length of the reach. The western portion of the reach contained stream flow and pools, while flow disappeared below ground approximately midway along the stream section within the Site so that the eastern section contained no flow (though a poorly defined channel and local pools were present). A pool was noted directly below a culvert on the western boundary of the Site (Figure 2). We determined that the whole of the reach meets the classification of at least an intermittent stream, however we could not confirm whether or not any portion is a permanent stream as the site visit was undertaken during a period of rainfall, so permanence of the flow could not be assessed.

It is our understanding that the proposed development will retain the stream in its entirety with no anticipated loss of stream values or extent. Two bridges are proposed to provide a connection between the two halves of the Site. It was noted that at the point where the stream exits the Site to the east, there has been recent restoration activity undertaken within the riparian margins of the stream adjacent to Westpoint Drive, which appears to have involved substantial weed management and enhancement planting, and the creation of a walkway along the stream bank.

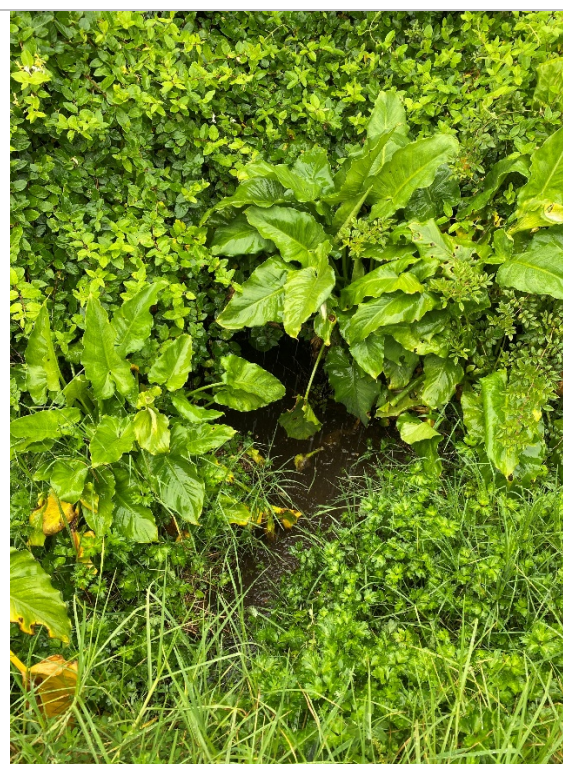


Fig. 2a: Stream pool visible from western culvert.



Fig. 2b: View from western culvert; stream is entirely covered by thick weedy vegetation.



Fig. 3a, b: Poorly defined stream bed photographed from central portion of reach.

Herpetofauna

Desktop analysis

There are currently 100 recognized species of lizards in New Zealand, of which only half are formally described. All lizards, with the exception of the introduced plague skink, are endemic to New Zealand. All native lizards are legally protected the Wildlife Act 1953. A significant component of native lizard fauna is recognised as 'Threatened' or 'At Risk' in the latest national threat ranking lists.

Department of Conservation Bioweb Herpetofauna Database lizard records within 10 km of the site (Table 1) were assessed to provide context for lizard fauna recorded within the site. Records older than 20 years were excluded from the analysis as they are not considered representative of the likely lizard fauna at the site.

Table 1: Indigenous lizard species potentially present within the site.

Species	Common name	Threat class (Hitchmough et al. 2021)	Nearest record	Preferred habitats
<i>Oligosoma aeneum</i>	Copper skink	At Risk – Declining	Nearest record 3 km	Leaf litter, grasslands and forest.
<i>Oligosoma ornatum</i>	Ornate skink	At Risk – Declining	Nearest record 5.5 km	Forest, scrub and complex grassland.
<i>Mokopirirakau granulatus</i>	Forest gecko	At Risk – Declining	Nearest record 4.5 km	Seral scrubland and forest
<i>Naultinus elegans</i>	Elegant gecko	At Risk – Declining	Nearest record 1.5 km	Seral scrubland and forest
<i>Dactylocnemis pacificus</i>	Pacific gecko	Not Threatened	Nearest record 10 km	Seral scrubland and forest



Fig. 4. Rank grass and shrubland habitat.



Fig. 5. Debris from derelict structures.

Site habitat assessment

Potential lizard habitat within the Site is best suited to terrestrial skinks and consists of rank grassland and scrub (Fig 4). Shrubland may provide suitable habitat however potential refugia (i.e., thick leaf litter and woody debris) was largely absent. Arboreal gecko habitat is considered to be poor quality and consisted of mostly exotic trees. Native trees were sparse and small in stature and likely provide little habitat for geckos.

Abandoned buildings and derelict structures on the northern end of the Site may also provide suitable habitat for skinks to shelter and bask (Fig. 5).

Avifauna

The Site is a mix of rank grassland and dense, exotic-dominated scrub surrounding the watercourse. The Site is surrounded by open grazed pasture to the west and northwest, residential subdivision and urban areas to the south and east, and similar exotic scrub to the North.

The area of exotic scrub will likely provide habitat for a range of exotic and common non-threatened native birds commonly found in urban and peri-urban habitats.

The only bird species observed during the site visit were pukeko. We note that heavy rain endured for the duration of the survey, which is likely to have impacted both the level of bird activity and visibility of birds that may have been present.

Bats

New Zealand has two extant species of native bat, the long-tailed bat (*Chalinolobus tuberculatus*) and the lesser short-tailed bat (*Mystacina tuberculata*). Both species are 'Absolutely Protected' under the Wildlife Act (O'Donnell, 2000). Short-tailed bats no longer inhabit mainland Auckland, however long-tailed bats are distributed throughout the Auckland region. Bats are not commonly found in densely populated areas as they are sensitive to mammalian predators and anthropogenic disturbance, particularly light and noise.

Long-tailed bats are classified as Threatened- Nationally Critical because the species is likely to have a 70% decline in numbers within three generations. They roost in cavities or flaky bark of mature exotic and native trees, as well as tree ferns and hollow stumps. Recent Auckland region bat records were sourced from the DOC Bioweb Database (October 2021) to investigate the historic presence of bats in the vicinity of 82 Hobsonville Rd. The closest known populations of long-tailed bats are located in Riverhead Forest (approximately 8.5 km from the site) and the Waitākere Ranges (approximately 10.5 km from the Site). The closest and most recent records of long-tailed bats are a handful of passes detected 3.5 km northwest of the Site in 2020. and 27 passes were detected 3.9 km west of the Site in 2019. All of these detections were recorded near shelterbelts or stands of mature trees on farmland and lifestyle blocks,

Vegetation at the Project Site was assessed as unsuitable for bat roosting. Most trees are small in stature with no obvious roost features, and dense climbing weeds have engulfed the trunks of most trees.

Regulatory policy

National Policy Statement for Freshwater Management 2020

Background

The National Policy Statement for Freshwater Management (NPS-FM) came into force on 3 September 2020. The NPS-FM directs Regional Councils to undertake a variety of policy inclusions or modifications to policy, as well as to undertake specific tasks. The NPS-FM also directs Council to be satisfied that the 'Effects Management Hierarchy' is applied to the existing and potential values.

Objective

The objective of the NPS-FM is to ensure that natural and physical resources are managed in a way that prioritises (NPS-FM 2.1 (1)):

- (a) first, the health and well-being of water bodies and freshwater ecosystems.
- (b) second, the health needs of people (such as drinking water).
- (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The proposed retirement village at 82 Hobsonville Rd meets the requirements of objective 2.1(1)(a) and provides for the health and well-being of the water body and freshwater ecosystem.

Relevant policies

Part 2, 2.2 of the NPS-FM lays out the policy requirements. All policies are relevant to the proposed retirement village environment, but we draw attention to:

Policy 3: Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments: *The proposed development does not result in adverse effects on the receiving environment.*

Policy 7: The loss of river extent and values is avoided to the extent practicable: *The proposed development does not involve the loss of extent of any river system.*

Policy 9: The habitats of indigenous freshwater species are protected: *The proposed development does not result in the loss or any disturbance to freshwater species.*

Our high-level assessment of ecological values and the proposed development shows that the relevant policies of the NPS-FM are upheld.

Auckland Unitary Plan Operative in Part (AUP(OP))

E3. Lakes, rivers, streams and wetlands

The objectives of the lakes, rivers, streams and wetlands chapter of the AUP(OP) are:

- (1) Auckland's lakes, rivers, streams and wetlands with high natural values are protected from degradation and permanent loss.
- (2) Auckland's lakes, rivers, streams and wetlands are restored, maintained or enhanced.
- (3) Significant residual adverse effects on lakes, rivers, streams or wetlands that cannot be avoided, remedied or mitigated are offset where this will promote the purpose of the Resource Management Act 1991.
- (4) Structures in, on, under or over the bed of a lake, river, stream or wetland are provided for where there are functional or operational needs for the structure to be in that location, or traverse that area.
- (5) Activities in, on, under or over the bed of a lake, river, stream and wetland are managed to minimise adverse effects on the lake, river, stream or wetland.
- (6) Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.

A number of policies are relevant to the proposal including:

General

- (1) Avoid significant adverse effects, and avoid where practicable or otherwise remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands within the following overlays:
 - (a) D4 Natural Stream Management Areas Overlay;
 - (b) D5 Natural Lake Management Areas Overlay;
 - (c) D6 Urban Lake Management Areas Overlay;
 - (d) D9 Significant Ecological Areas Overlay; and
 - (e) D8 Wetland Management Areas Overlay.
- (2) Manage the effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands outside the overlays identified in Policy E3.3(1) by:
 - (a) avoiding where practicable or otherwise remedying or mitigating any adverse effects on lakes, rivers, streams or wetlands; and
 - (b) where appropriate, restoring and enhancing the lake, river, stream or wetland.
- (3) Enable the enhancement, maintenance and restoration of lakes, rivers, streams or wetlands.
- ...
- (5) Avoid significant adverse effects, and avoid, remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands on:
 - (a) the mauri of the freshwater environment; and
 - (b) Mana Whenua values in relation to the freshwater environment.

Riparian margins

- ...
- (15) Protect the riparian margins of lakes, rivers, streams, and wetlands from inappropriate use and development and promote their enhancement to through all of the following:
- (a) safeguard habitats for fish, plant and other aquatic species, particularly in rivers and streams with high ecological values;
 - (b) safeguard their aesthetic, landscape and natural character values;
 - (c) safeguard the contribution of natural freshwater systems to the biodiversity, resilience and integrity of ecosystems; and
 - (d) avoid or mitigate the effects of flooding, surface erosion, stormwater contamination, bank erosion and increased surface water temperature.

E15 Vegetation management and biodiversity

The objectives of the Vegetation management and biodiversity chapter of the AUP(OP) are:

- (1) Ecosystem services and indigenous biological diversity values, particularly in sensitive environments, and areas of contiguous indigenous vegetation cover, are maintained or enhanced while providing for appropriate subdivision, use and development.
- (2) Indigenous biodiversity is restored and enhanced in areas where ecological values are degraded, or where development is occurring.

A number of policies are relevant to the proposal including:

- (1) Protect areas of contiguous indigenous vegetation cover and vegetation in sensitive environments including the coastal environment, riparian margins, wetlands, and areas prone to natural hazards.
- (2) Manage the effects of activities to avoid significant adverse effects on biodiversity values as far as practicable, minimise significant adverse effects where avoidance is not practicable, and avoid, remedy or mitigate any other adverse effects on indigenous biological diversity and ecosystem services, including soil conservation, water quality and quantity management, and the mitigation of natural hazards.
- (3) Encourage the offsetting of any significant residual adverse effects on indigenous vegetation and biodiversity values that cannot be avoided, remedied or mitigated, through protection, restoration and enhancement measures, having regard to Policy E15.3(4) and Appendix 8 Biodiversity offsetting.
- (4) Protect, restore, and enhance biodiversity when undertaking new use and development...
- (5) Enable activities which enhance the ecological integrity and functioning of areas of vegetation, including for biosecurity, safety and pest management and to control kauri dieback.
- (6) Enable vegetation management to provide for the operation and routine maintenance needs of activities.
- (7) Manage any adverse effects from the use, maintenance, upgrading and development of infrastructure in accordance with the policies in E15.3, recognising that it is not always practicable to locate or design infrastructure to avoid areas with indigenous biodiversity values.

Our high-level assessment of ecological values and the proposed development shows that the relevant policies of the AUP (OP) are upheld.

Effects management

It is our understanding that proposed retirement village at 82 Hobsonville Rd will involve measures to avoid, remedy and mitigate effects on ecological values, and will follow the effects management hierarchy as summarised below:

- The loss of river extent and values will be avoided for the stream that runs through the Site.
- No suitable bat habit is present on the site, therefore no specific bat assessment or management measures are required.

If native lizard species are found during baseline surveys of the Site this would trigger the need for a Lizard Management Plan (LMP). A LMP will outline mitigation actions to be taken before and during vegetation removal (e.g. salvage and relocation) to avoid harm to lizards, and possibly offsetting and compensation measures (e.g. enhancement) if required.

- Avifauna management will include undertaking vegetation clearance outside of the bird breeding season and/or checks for bird nesting prior to vegetation clearance to remove exotic vegetation.

Ecological enhancement opportunities

Suggested enhancement actions at the Site include weed and pest management and enhancement planting within the riparian corridor for the stream that traverses the Site which will improve the ecological values and habitat for native fauna. This enhancement will extend the restoration activities that have been undertaken within the same stream corridor on the neighbouring site to the east and downstream of the Site.

Appendix 1: Stream classification

Stream Classification

Classification of streams followed the definitions provided in the AUP(OP), as follows:

- *Permanent river or stream* - the continually flowing reaches of any river or stream.
- *Intermittent stream* - Stream reaches that cease to flow for periods of the year because the bed is periodically above the water table. This category is defined by those stream reaches that do not meet the definition of permanent river or stream and meet at least three of the following criteria:
 - (a) it has natural pools;
 - (b) it has a well-defined channel, such that the bed and banks can be distinguished;
 - (c) it contains surface water more than 48 hours after a rain event which results in stream flow;
 - (d) rooted terrestrial vegetation is not established across the entire cross-sectional width of the channel;
 - (e) organic debris resulting from flood can be seen on the floodplain; or

Appendix 2: Wetland delineation protocols

Key steps in hydrophytic vegetation determinations (from NPS-FM Wetland Delineation protocols, MFE 2020)

