



Weiti Precinct: Village 1 Fast Track Consent Application  
Assessment of Ecological Effects for Referral  
Prepared for Ara Weiti Development Limited




2 November 2022





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# Executive Summary

The Weiti Village 1 Fast Track proposal would facilitate the development of 220 dwellings within Policy Area 2 (Village 1) of Sub-precinct B, a land parcel of approximately 33.5 ha located within the Karepiro catchment. The proposal also includes one super lot earmarked for a retirement village and a small commercial area.

Terrestrial and freshwater ecological values within the Village 1 precinct ranged from low to moderate. Natural wetlands associated with the eastern and western tributaries were heavily weed infested and assessed as currently with low ecological value.

The Coastal Marine Area (CMA) contains coastal wetlands from the mouth of the Karepiro Stream to the upstream extent of the CMA. The coastal wetland continues further upstream of the CMA boundary where large swathes of saltmarsh dominate. These coastal wetlands will be unaffected by the construction and operation of the proposed village.

The proposed development of Village 1 within Sub-precinct B will result in:

- Avoidance of any impacts on the SEAs (T\_6405 and T\_6406).
- Avoidance of impacts on identified natural wetlands.
- Potential realignment of a reach of the western tributary (with the remainder to be retained) – as discussed below.
- Retention of the entire length of the eastern tributary.
- Enhancement of five identified natural inland wetlands.
- Riparian planting along the western and eastern streams from the SEAs to confluence with Karepiro Stream.
- Enhancement of fish passage where relevant.
- Provision of predator and weed management programmes.
- Implementation of management for erosion and sediment management.
- Implementation of stormwater collection and treatment.

It has been identified through the design process to date, that a small section of the western tributary (from its emergence from the SEA (T\_6406) may be realigned (vertically &/or horizontally). The detail of this minor realignment is subject to the final design of the earthworks and geotechnical requirements of the development. However, any works will retain the stream length and hydrology, within a newly formed channel, and the riparian margin replanted and enhanced. Consent will be sought for the diversion as part of the consent application if this project is referred by the Minister.

The proposed Village 1 development will avoid the natural wetlands, and with the proposed enhancements (notably to the wetlands) and the proposed sediment and stormwater treatment for the village development, the effects on the ecological values will be minimal.

Potential effects on estuarine and marine ecological values relate to the discharge of sediment during construction and associated contaminants in stormwater during the operational phase. Plans for the treatment of sediment and stormwater discharges prior to discharge (as part of adaptive management responses) means that adverse effects on estuarine and marine communities or ecological values are unlikely to occur.

The proposed development meets the provisions of the National Policy Statement for Freshwater Management, the National Environmental Regulations for Freshwater and the Auckland Unitary Plan (operative) including the provisions of the Weiti Precinct (I547).

In conclusion, the proposed Village 1 development within Policy Area 2 of Sub-precinct B will not result in adverse effects on the ecological values of the precinct area, and the provisions of the respective legislation and plans are met.

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2022a)

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# 1.0 Introduction

This assessment of ecological effects has been prepared by Boffa Miskell Limited (“BML”) for Ara Weiti Development Limited (“AWDL”), the applicant, as part of an application to the Minister for the Environment for referral under the Covid-19 Recovery (Fast-track Consenting) Act 2020. This assessment will review the potential ecological effects that would result from the development, including effects on terrestrial, freshwater, wetland and marine environments.

Boffa Miskell has a long history with this site, having been involved in developing designs and associated provisions for Weiti since 2005, including advising on master planning and resource consent matters and developing the previous Special 8 zone for the former Rodney District Council, and now the Weiti Precinct (1547) in the operative Auckland Unitary Plan (AUP(OP)). More specifically this has included:

- a. master planning, subdivision layout and landscape design for Village 1 and preparation of a land use and subdivision resource consent application (June to November 2013);
- b. preparation of Weiti Bay (Karepiro Policy Area) Ecological Management Plans to meet ecological related consent conditions for the 150-lot development in Weiti Bay (September 2014 – 2017);
- c. Weiti Bay Landscape implementation and ecological monitoring and reporting (2015-2018); and
- d. preparation and presentation of landscape, ecology and planning evidence to the Proposed Auckland Unitary Plan (“PAUP”) hearings committee in 2016.

The aim of the current proposal is to enable the development of a medium density residential development and associated areas of public open space, revegetation and public facilities and amenities. The proposed Village 1 plan layout illustrates the development within the proposed Sub-precinct B of the Weiti Precinct.

In this report we detail the regulatory definitions and provisions relevant to ecology that are applicable to the proposed development, provide a classification of the watercourses and wetlands present, lay out the existing and potential ecological values, summarise the effects of the proposed development on the ecological values, and outline how the outcomes relate to the provisions of the relevant statutory provisions.

This report and other drawings and maps assembled as an A3 Folio of Drawings to Accompany the Fast Track Application (“A3 Folio”) should be referred to in relation to this report.

## 2.0 Regulatory policy and definitions

### 2.1 National Policy Statement for Freshwater Management 2020

#### 2.1.1 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 inclusion 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.

#### 2.1.2 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):

- (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 Village 1 residential development at Weiti meets the requirements of objective 2.1(1)(a) and provides for the health and well-being of the water body and freshwater ecosystem.

#### 2.1.3 Relevant policies

Part 2, 2.2 of the NPS-FM lays out the policy requirements. All policies are relevant to the proposed Village 1 residential 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 6:** There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted: *Natural inland wetlands are protected and no adverse effects will occur to the natural inland wetlands.*

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

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

Our assessment below shows that these policies are upheld, and we have assessed the effects of the construction and operation of the Village 1 residential development as minimal and meeting the requirements of the NPS-FM.

#### 2.1.4 Definitions

##### **RMA and NPS-FM wetland definitions**

The RMA definition states:

- Wetland includes permanently or intermittently wet areas, shallow water, and land margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

The NPS-FM definition<sup>1</sup> states:

- **Natural wetland** means a wetland (as defined in the Act) that is not:
  - (a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or
  - (b) a geothermal wetland; or
  - (c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain-derived water pooling.
- **Improved pasture** means an area of land where exotic pasture species have been deliberately sown or maintained for the purpose of pasture production, and species composition and growth has been modified and is being managed for livestock grazing.

In clarifying these definitions, we note that the RMA wetland definition is relevant, that natural wetlands are not restricted to indigenous ecosystems or biota, and no reference is made to the significance, quality or condition of the wetland feature.

We note that, at the time of writing, MfE has recently issued the *Managing our wetlands: A discussion document on proposed changes to the wetland regulations*. Amongst other things, this discussion document proposes changes to the definition provided for natural wetland in the NPS-FM. MfE has also published '*Defining 'natural wetlands' and 'natural inland wetlands'*' as a guidance document to support the interpretation of the NPS-FM and NESF. We note that both of these MfE publications carry no regulatory or legal standing and we understand that this has been recently confirmed by the Environment Court in two recent decisions<sup>2</sup>. However, the documents are helpful in understanding the intent behind the wetland definition.

##### **Wetland constructed by artificial means**

The guidance document provides the following clarification on constructed wetlands:

- Wetlands constructed by artificial means were excluded to avoid discouraging anyone from constructing a wetland or restricting the ability to maintain a wetland or waterbody constructed by artificial means for a specific purpose

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<sup>1</sup> NPS-FM, s3.21(1)

<sup>2</sup> *Federated Farmers v Northland Regional Council* [2022] NZEnvC 016 at [29] and *Greater Wellington Regional Council v Adams* [2022] NZEnvC 25 at [136].

- While constructed wetlands may develop values over time and provide ecosystem services, it is not the intent of the NPS-FM or NESF to regulate activities that affect constructed wetlands; and
- ‘Constructed wetlands’ are intended to include waterbodies that have been deliberately constructed by artificial means for a specific purpose and that may require maintenance over time (for example, vegetation or silt removal) to continue to fulfil that purpose.

The guidance document goes on to list specific examples of constructed wetlands as ‘*areas of wetland habitat in or around bodies of water created for, or in connection with.... stormwater management, water storage ponds and other artificial water storage facilities, including open drainage channels and engineered soil conservation structures.*’

### **Induced wetlands**

The guidance document makes special reference to ‘induced<sup>3</sup> wetlands’ as:

- wetlands that have resulted from any human activity, except the deliberate construction of a wetland or waterbody by artificial means (see section 5). They are considered ‘natural wetlands’.

The guidance goes on to say: ‘In a highly modified landscape, as we have across New Zealand, wetlands often result from human activities or changes to the landscape. Many wetlands that we have today have historically been induced through these activities, such as deforestation, and have often developed significant values over time and warrant protection.’ Thus, the guidance considers that induced wetlands are captured by the definition of ‘natural wetland’ and do not meet the exclusion for ‘constructed by artificial means’.

### **NPS-FM natural inland wetlands**

The NPS-FM requires that:

- (1) Every regional council must include the following policy (or words to the same effect) in its regional plan(s):

*“The loss of extent of natural inland wetlands is avoided, their values are protected, and their restoration is promoted” (with exceptions).*

The policy direction provides for some exceptions, of which the proposed development are unlikely to meet.

## 2.2 National Objectives Framework

Subpart 2 of the NPS-FM requires certain attributes to be managed within a compulsory National Objectives Framework (NOF). The NOF requires that water quality is maintained or improved to established water quality attribute bands for a variety of parameters. The NPS-FM requires that Councils apply compulsory values to stream management units in their respective regions as part of the NOF (Subpart 2, 3.9(1)). Those compulsory values relevant to freshwater ecology are:

**Ecosystem health** refers to the extent to which a Freshwater Management Unit (FMU) or part of an FMU supports an ecosystem appropriate to the type of water body (for example, river, lake, wetland, or aquifer).

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<sup>3</sup> ‘induced’ is used here with its meaning ‘bring about or give rise to’.

There are five biophysical components that contribute to freshwater ecosystem health, and it is necessary that all of them are managed. They are:

*Water quality* – the physical and chemical measures of the water, such as temperature, dissolved oxygen, pH, suspended sediment, nutrients and toxicants.

*Water quantity* – the extent and variability in the level or flow of water.

*Habitat* – the physical form, structure, and extent of the water body, its bed, banks and margins; its riparian vegetation; and its connections to the floodplain and to groundwater.

*Aquatic life* – the abundance and diversity of biota including microbes, invertebrates, plants, fish and birds

*Ecological processes* – the interactions among biota and their physical and chemical environment such as primary production, decomposition, nutrient cycling and trophic connectivity.

In a healthy freshwater ecosystem, all five biophysical components are suitable to sustain the indigenous aquatic life expected in the absence of human disturbance or alteration (before providing for other values).

**Threatened species** refers to the extent to which an FMU or part of an FMU that supports a population of threatened species has the critical habitats and conditions necessary to support the presence, abundance, survival, and recovery of the threatened species. All the components of ecosystem health must be managed, as well as (if appropriate) specialised habitat or conditions needed for only part of the life cycle of the threatened species.

We note that Auckland Council has yet to identify FMUs in their regional plan and accordingly, has not specified attribute bands. Nevertheless, we would expect that attribute bands for the eastern and western tributaries (as part of the Karepiro Stream catchment) to be in the higher bands.

## 2.3 National Environmental Standards Freshwater

### ***NESF regulations on natural wetlands***

The NESF provides some specific regulations for natural wetland activities, notably:

- Earthworks within a natural wetland, and the taking, use, damming, diversion or discharge of water outside, a natural wetland, that results in complete or partial drainage of all or part of the wetland, is prohibited (Reg. 53).
- Earthworks outside, but within 100 m setback from a natural wetland, and the taking, use, damming, diversion or discharge of water outside, but within a 100 m setback from a natural wetland, that results in complete or partial drainage of all or part of the wetland, is a non-complying activity (Reg. 52).
- Vegetation clearance within, or within a 10 m setback from, a natural wetland, earthworks within, or within a 10 m setback from, a natural wetland, and the taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland is a non-complying activity (Reg. 54).

We also draw attention to the specific requirements for the following fish passage (NPS-FM, 3.26). Here Councils are required to include words in their regional plans that:

*'fish passage is maintained, or improved by instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats'*

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

### 2.4.1 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.

## 2.4.2 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.
- (8) Recognise and provide for the management and control of kauri dieback as a means of maintaining indigenous biodiversity.

## 2.5 Weiti Precinct Provisions

### 2.5.1 Purpose

As outlined in the AUP(OP) the Wēiti Precinct (I547) is an important landscape area and contributes to achieving the maintenance of a greenbelt between the North Shore and the urban extent of the Hibiscus Coast. As outlined below, the Wēiti Precinct contains Significant Ecological Areas (SEAs) that are to be enhanced by additional planting.

The Wēiti Precinct has three sub-precincts:

- (1) Sub-precinct A – Karepiro: This sub-precinct has larger site sizes, provides for residential activities and is zoned Residential - Rural and Coastal Settlement.
- (2) Sub-precinct B – Village: The sub-precinct provides for a mix of residential and commercial activities near its geographical centre, with lower intensity residential activities towards its outer edges. The sub-precinct is also zoned Residential - Rural and Coastal Settlement.
- (3) Sub-precinct C - Conservation and Forestry: The sub-precinct forms the balance of the area. It provides for activities that are consistent with the open space character including conservation, outdoor recreation, farming and small-scale forestry activities. This sub-precinct is zoned Rural - Rural Conservation.

### 2.5.2 Key objectives

The following proposed objectives are relevant to the ecology of the precinct:

Objectives (I547.2)

- (1) *The greenbelt and vegetated cover in the area between the Okura River and the urban Hibiscus Coast is maintained.*
- (4) *Key natural and heritage features and the distinctive character of the precinct are protected from inappropriate subdivision and development.*
- (5) *Phased and progressive enhancement and expansion of existing significant ecological areas is required and their long-term preservation and management is ensured.*
- (6) *Adverse effects of land modification, development and land use activities on the natural*

*environment, including landform, water courses, significant vegetation and the Coastal Marine Area are avoided, remedied or mitigated.*

*(7) Adverse effects of stormwater runoff during and after development are avoided.*

*(12) Appropriate wastewater and water infrastructure is provided to development on significant values within the receiving environment.*

### 2.5.3 Key policies

The following proposed policies are relevant to the ecology of the precinct:

#### General

*(2) Enable activities of a nature, scale, intensity and location which allow the greenbelt to be retained.*

*(3) Require subdivision and land use activities to be carried out in a manner which avoids the adverse effects of stormwater runoff on receiving environments.*

*(4) Require subdivision and activities to be connected to a public reticulated wastewater system.*

*(5) Require subdivision and activities to be connected to a public reticulated water system.*

*(6) Subdivision and activities should avoid, remedy or mitigate adverse effects on the surrounding road network.*

*(7) Require activities to be carried out in a manner which avoids adverse effects on the native flora and fauna of the precinct and the adjoining coastal environment.*

#### Sub-precinct B – Village

*(23) Enable a dense Village environment to be created, having regard to the need to manage stormwater flows and water quality on downstream catchments.*

## 3.0 Ecological values

### 3.1 Ecological context

The Weiti Property lies within the Rodney Ecological District<sup>4</sup> (McEwen 1987). This District contains a moderate diversity of indigenous flora and fauna, including a range of ‘Threatened’, ‘At Risk’ and regionally significant species, as well as several rare ecosystem types. We comment on these as appropriate in our description of the ecological values of the Property.

To the east of the Property is Karepiro Bay and the Long Bay-Okura Marine Reserve and to the south the Okura Department of Conservation (DOC) Reserve and the Okura Estuary. The Property is located just outside Auckland’s rural-urban boundary. When it was first included within the former Rodney District Plan, one of its purposes was to contribute to achieving the maintenance of a greenbelt between the urban extent of the north shore and the growing urban area of the Hibiscus Coast, including Orewa, Silverdale and the Whangaparaoa peninsula. This greenbelt has been termed the “North-West Wildlink”.

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<sup>4</sup> Ecological Districts were established in recognition of the biogeographic differences between various parts of New Zealand, based on shared general biophysical characteristics.

The Hibiscus and Bays Local Board have the long-term objective to “Establish the North-West Wildlink as a continuous greenbelt complemented by improved quality of adjoining estuarine and marine environments”. These ‘Wildlink Wonders’ have been identified based on the important biodiversity values that they possess, for example food sources, refuge habitat and breeding areas.

## 3.2 Terrestrial ecology

### 3.2.1 Vegetation

Two Significant Ecological Areas (SEA T\_6405 and T\_6406) occur in close proximity but are outside of Sub-Precinct B. The remainder of the proposed Village 1 area comprises regenerating pine forest with riparian vegetation alongside the watercourses of the western and eastern tributaries as outlined below.

#### 3.2.1.1 Regenerating Pine Forest

The proposed development area encompasses hillslopes, covered in a mosaic of wilding pine trees, gorse scrub and pampas. In the central part of the Village 1 site, regenerating pines (approximately 10-15 years old) form a dense, closed canopy in places and reach ~ 8 m tall. In the north and west, pines appear somewhat smaller and gorse and pampas cover more dominant. Occasional broadleaved native shrubs (mainly mahoe, hangehange, red matipo and karamu) are interspersed throughout the exotic scrub vegetation.

#### 3.2.1.2 Riparian Vegetation

Native broadleaved scrub and groups of cabbage trees amongst regenerating pine trees form a narrow riparian fringe in both the western and eastern tributaries, though this vegetation is largely shaded out where a dense pine canopy has overtopped it.

### 3.2.2 Terrestrial fauna

Extensive surveys throughout the Weiti Precinct have only recorded plague skinks. The adjacent SEAs (T\_6405 and T\_6406) have high habitat potential and elegant geckos have previously been observed there.

A variety of native and introduced birds are known to occur throughout the Weiti area including silvereye, tui, grey warbler, kereru, kingfisher, pukeko, Australasian harrier, spur-winged plover and fantail. Other observations recorded white-faced heron, mallard, grey duck and NZ dabchicks using the forestry reservoir habitat further up the Karepiro Stream valley. Fernbirds were recorded within wetland areas within the precinct, although not within the western and eastern tributaries. Avifauna values within the proposed Village 1 are low to moderate.

The closest known population of long-tailed bats is located in Riverhead Forest, approximately 12 km from the site. Occasional bat activity has been recorded up to 7 km from Weiti, but no bats have been detected over multiple surveys in close vicinity to the Weiti Precinct. Long-tail bats have large home ranges and travel tens of kilometres in a night between roosting grounds and foraging areas. Given the mobility of long-tailed bats coupled with the vegetation connectivity between the site and Riverhead Forest, there is very low likelihood of bats being present here.

Overall, terrestrial ecological values within the Village 1 precinct are assessed as low to moderate.

### 3.3 Freshwater ecology

The Village 1 residential development is bounded by two watercourses, referred to as the western and eastern tributaries (Figure 1). Both watercourses are tributaries of the Karepiro Stream which itself discharges to Karepiro Bay. As noted above, none of Sub-Precinct B is within an SEA but other parts of these watercourses do flow from SEAs (SEA T\_6406 and SEA T\_6405 respectively).

During December 2018 and January 2019, and again in 2022, the length of the eastern watercourse and the lower western tributary were walked and the observations of surface water and channel characteristics etc were recorded. The Auckland Council 'Overland Flow Path' GIS layer and earlier ecological surveys (macroinvertebrates and stream ecological valuations) also informed the assessment. The methodology for classifying these watercourses (as permanent, intermittent or ephemeral watercourses) is set out in Appendix 1 and the outcome shown in Figure 1.

We observed that some reaches of the mainstem of both the western and eastern tributaries contained no flowing water but a well-defined channel with no rooted terrestrial vegetation was evident along most of their lengths, and that natural pools were present. Accordingly, we confirm the tributaries as intermittent watercourses.

Both the streams have been affected by previous land management practices, which may have resulted in an increase in the extent of riverine wetlands in low-gradient valley floor areas (see below). Apart from this, streams have little or no modification. Water quality from the forested catchment is likely to be very good, and the high macroinvertebrate diversity was consistent with good water quality. Fish abundance and diversity was limited by accessibility and low flow and habitat volume. Both tributary streams are in good condition, but stream habitat volume and life-supporting capacity is limited outside the mainstem of the Karepiro Stream. Native fish diversity is high in the main Karepiro Stream but limited in the two tributaries due to low or intermittent flows and dense wetlands which tend to impair fish movement. Nevertheless, the deeper pools provided suitable habitat in the lower reaches, especially of the eastern tributary.

Overall freshwater ecological values within the Village 1 precinct are moderate.

### 3.4 Freshwater Wetlands

In response to the provisions of the NPS-FM, the length of the eastern watercourse and the lower western tributary were walked again in 2022, specifically to identify and mark out the natural wetland areas. These wetlands are shown in Figure 1. In assessing their classification as natural wetlands we undertook the delineation method incorporated by reference by the NPS-FM (MFE 2020) and set out in Appendix 2 of our report. At each location we undertook an on-site rapid test to determine the dominant vegetation, and in several cases a check to confirm the presence of hydric soils. Our rapid test was undertaken as a visual overview of the vegetation present at the location. As the rapid test was passed on each occasion, we identified wetland areas as meeting the definition of the RMA wetland. We did not undertake any further steps of the protocol, nor did we undertake any representative plots as the outcome was clear.

Following the rapid test we explored whether these features meet the exclusion from being classified as natural wetland. Three matters are particularly relevant: are the wetlands constructed by artificial means, are the wetlands 'induced' through some human activity, and are they part of an area of improved pasture? We are confident that while the wetlands have not been deliberately constructed (i.e., they have not been dug out for a specific purpose) it is likely that these wetlands have been formed by human activity.

Investigations based on the relative levels suggest that the forestry road and original culvert have not contributed to the formation of the wetland since the backwater effects from even a perched culvert would remain well below the wetland levels. Even with a culvert blockage, the backwater effects would not be higher than marginally above the road level, still well below the wetland levels. The formation of the new road and culverts would contribute to the efficient drainage of the stream and are unlikely to be the cause of 'induced' wetlands.

Most of the pine forest was harvested in 2005 - 2010, and even with the implementation of best practice harvesting methods, this would have resulted in a large volume of wood debris and sediment deposition in the gullies. This probably contributed to the development of the current wetlands, together with removal of shade from mature pine trees allowing growth of low stature wetland plants. Therefore, it is highly likely that the earlier pastureland use and the later forest harvesting have contributed to the development of the wetlands within the western and eastern tributaries.

Our assessment is that were not purposefully constructed by artificial means, but rather induced by land management practices.

Similarly, we are confident that the wetlands do not form part of improved pasture as defined by the NPS-FM.

Accordingly, our conclusion is that the wetland areas within the western and eastern gullies do not meet the exclusions of the NPS-FM wetland definition and therefore should be classified as 'natural inland wetlands'.

Despite the classification as natural inland wetlands under the NPS-FM, the ecological values of these areas are low.

We note that at the time of writing, no correspondence or dialogue with Auckland Council has been entered into that would confirm the Council's acceptance of these features as natural wetlands.

### 3.5 Estuarine wetlands

Upstream of the Karepiro Stream mouth (but outside of Village 1) there are wetlands in the Coastal Marine Area (CMA), as recognised by the latest interpretation by the High Court of the National Policy Statement Freshwater (NPS-FW)<sup>5</sup>. That decision confirmed that the NESF applies to natural wetlands in the CMA. Auckland Council have taken an interim interpretation to include mangroves and saltmarsh species within the CMA in response to the High Court decision.

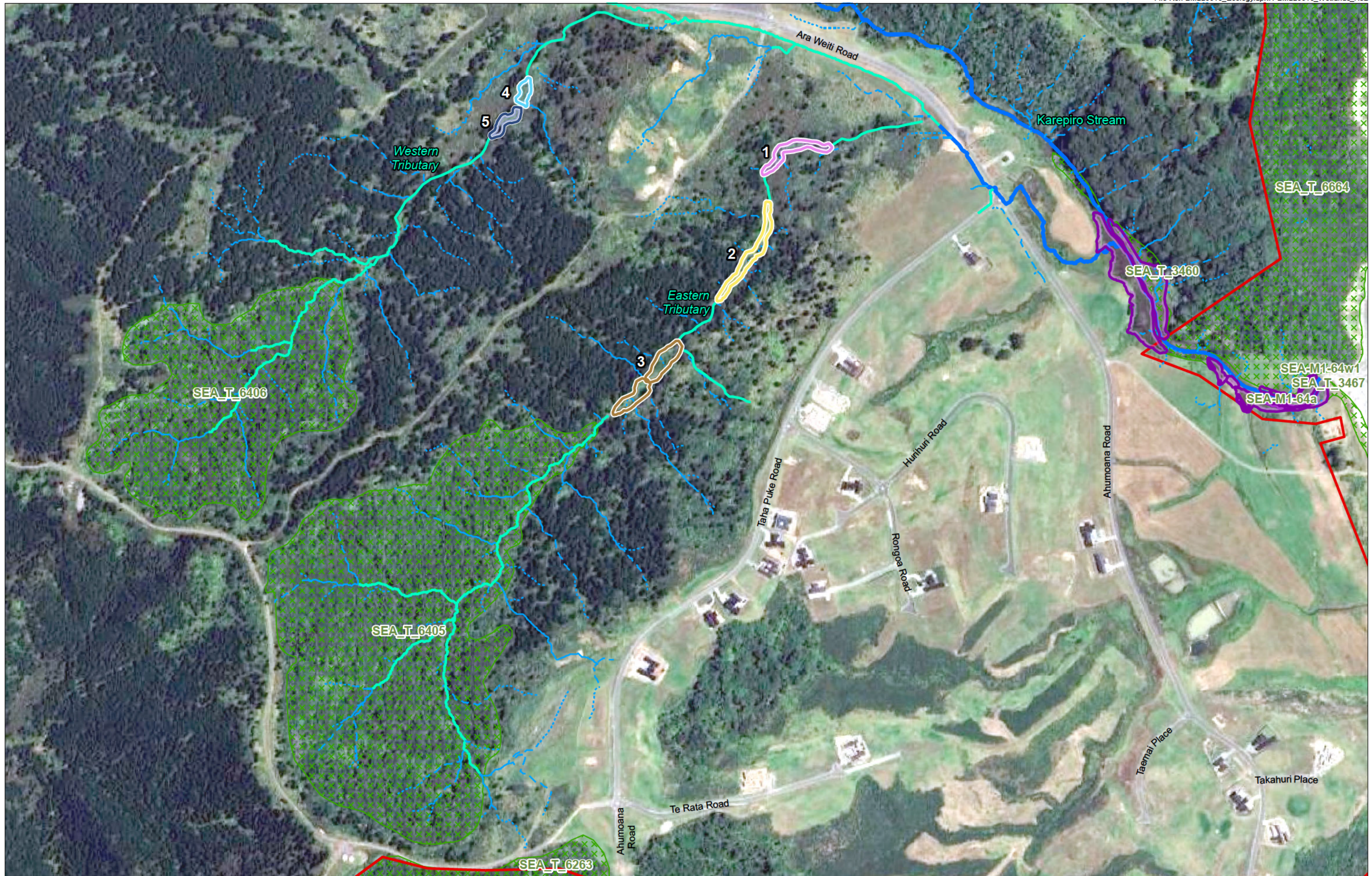
Although these estuarine wetlands are not within Village 1, given that they form part of the receiving environment for earthworks erosion and sediment control during construction and operational phase stormwater we have assessed the vegetation and mapped the wetlands in the CMA upstream of the vicinity of the Karepiro Stream mouth.

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<sup>5</sup> *Minister of Conservation v Mangawhai Harbour Restoration Soc Inc* [2021] NZHC 3113

The CMA contains coastal wetlands from the mouth of the Karepiro Stream to the upstream extent of the CMA (Figure 1). Wetland areas (2431.04 m<sup>2</sup> or 0.24 ha) are predominantly saltmarsh dominated by sea rush (*Juncus kraussi*) and oioi (*Apodasmia similis*), with patches of saltmarsh ribbonwood (*Plagianthus divaricatus*). Small patches of mangroves (*Avicinnia marina*), remuremu (*Selliera radicans*) and glasswort (*Sarcocornia quinqueflora*) were also observed. The coastal wetland continues further upstream of the CMA boundary where large swathes of saltmarsh dominate.

The ecological value of these wetland areas in the CMA are assessed as moderate.



## 3.6 Marine ecology

Karepiro Stream discharges to Karepiro Bay. Karepiro Bay lies between the Okura and Weiti Rivers, and forms part of the Long Bay Okura Marine Reserve and SEA-M areas (see Map 2 of the A3 Folio). The area contains a variety of coastal habitats typical of the north Auckland east coast environment, including sandy beaches, rocky reefs, estuarine mudflats and mangroves. The intertidal receiving environment of Karepiro Stream/Estuary exhibits natural variability in infaunal invertebrate community composition and some variance in sediment grain size (as expected from a moderately exposed beach).

The low tide channel from the discharge of the Karepiro Stream to the intertidal sandflats is highly variable in location and there is some variability in benthic invertebrate species composition in this area.

The intertidal habitat adjacent to Karepiro Stream is dominated by fine and medium sand grain sizes (c.95%). As the habitat transitions from the stream mouth across expansive sand flats towards the subtidal within Karepiro Bay, the proportion of medium sand decreases, and the proportion of very fine sand increases. The concentration of common stormwater contaminants in intertidal and subtidal sediment is low (below Australia and New Zealand Guidelines (ANZG) default guideline value (DV)<sup>6</sup>).

Adjacent to Karepiro Stream benthic invertebrate assemblages are dominated by naturally transient bivalve populations (pipi primarily) in the near shore intertidal habitat, with amphipods, polychaete worms and bivalves present at the Karepiro Stream mouth. Subtidal habitats are dominated by polychaete worms and amphipods.

Karepiro Bay is recognised as a long-term sink for fine sediments from surrounding Okura and Weiti catchments (Swales et al. 2008). Despite Karepiro Bay being a sink for fine sediments, the invertebrate assemblage detected in intertidal and subtidal areas of Karepiro Bay (Hewitt 2008) indicated the presence of taxa that are sensitive to sedimentation, such as heart urchins, wedge shell and pipi.

Silt and clay from earthworks could make it through erosion and sediment control protective measures and deposit in Karepiro Bay. However, we did not find significant increase in the proportion of silt and clay in the benthic sediment, nor changes in the benthic invertebrate community composition such as decreases in the abundance of species that are sensitive to silt and clay and increases in the abundance of species tolerant of silt and clay in the 2014-2018 data.

We have monitored the ecology in the marine receiving environment (infaunal benthic invertebrates, sediment grain size and sediment contaminants) between 2014 and 2018.

Preliminary findings from the 2018 end of earthworks marine ecology survey showed:

- Very small changes in the proportion of silt and clay in benthic sediment have been detected over time. The 2018 results indicate silt and clay comprises 1.5% to 3.4% of the total sediment composition at three out of four intertidal sites (silt and clay was not detected at the fourth site), whereas in the baseline data (2014) intertidal sites did not contain measurable silt and clay. Silt and clay comprised 0.01% at subtidal site 4 and 2.5% at subtidal site 5 compared to the baseline in 2014 where no silt and clay was detected. At subtidal site 6, silt and clay proportion was lower in 2018 (2.9%) compared

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<sup>6</sup> ANZG (2018)

to the baseline (4.9%). At all sites, the proportion of silt and clay was lower in 2018 compared to 2017, and where present, form a very small proportion of benthic sediment.

- There was no indication in the intertidal benthic invertebrate community composition that there are ecological changes related to the very small variability in the proportion of silt and clay in benthic sediments. Indicator species sensitive to silt and clay (including pipis and cockles) remain present at intertidal sites over time, whilst species tolerant of silt and clay (such as the polychaetes *Magelona dakini* and *Prionospio aucklandica*) have remained relatively constant or reduced in abundance over time.

## 4.0 Proposed Village 1 Plan

The proposed Village 1 development will establish a series of elevated building platforms that follow the contour and enable these to be predominantly north-facing. The lower density residential areas are located on the gentler slopes.

Protecting the streams and enhancing water quality is a key design driver for the sub-precinct. Riparian planting is proposed for the western and eastern streams within the Village 1 area (see below), and the retention and enhancement of the existing wetlands is a key outcome proposed for the development.

A number of stormwater management ponds are proposed within the sub-precinct, located at the entrance to the Village at Ara Weiti Road (where an existing pond is located) and the others within the eastern section of the site adjacent to the open space reserve as shown in the indicative scheme plan. The two ponds will follow Auckland Design Manual best practice of designing them to appear like natural bodies of water. The eastern stormwater wetland will provide a focal point for the surrounding residential lots and will tie into the wider pedestrian and open space network.

The Village 1 development will require changes to the existing site conditions and topography and will be undertaken to avoid, minimise and mitigate through ecological enhancements. The effects and enhancements of the proposed development on the ecological values are summarised below.

## 5.0 Proposed activities

### 5.1 Overview

The Weiti Bay Village 1 Development consists of the earthworks and civil works in order to form 220 residential lots, a retirement village and a small commercial centre. Approximately 28 ha of bulk earthworks is required to form a developable landform. In addition, stormwater and wastewater infrastructure will be provided on site.

## 5.2 Earthworks

The proposed earthworks for the development of the site are detailed in Woods (2022) and summarised here:

- Clearing of approximately 33.5 ha of partially regrown pine forest slash zone.
- Bulk cut to filling of approximately 600,000 m<sup>3</sup> over 28 ha staged over the development construction.
- Construction of seven Sediment Retention Ponds sized for approximately 5 ha each and other measures in order to reduce erosion and sedimentation of the existing waterways and coastal environment.
- Construction of Geotechnical Remediation structures and drainage in order to stabilise the landform.
- Protection and enhancement of existing drains, overland flow paths and wetlands within the lot area.
- Culverting of approximately 20 m of the eastern watercourse.

Ridley Dunphy (2022) in conjunction with Woods (2022) have developed the erosion and sediment control (ESC) measures to be implemented during earthworks. The ESC approach is based on minimisation of sediment generation and the retention of sediment to minimise sediment yield. Ridley Dunphy's report details a number of non-structural and structural measures to minimise sediment discharge to Karepiro Stream and Karepiro Bay. Key management techniques, such as adaptive management and associated continuous improvement will ensure that ESC measures and methodologies are fully effective.

Previous ESC measures utilised in the development of other parts of the Weiti Property (Sub-Precinct A) between 2015 and 2018, have been the subject of an intensive monitoring and ESC programme (AEMMRP<sup>7</sup> sampling programme including monitoring of the marine receiving environment). The ESC measures provide for capacity to hold and treat sediments prior to release.

It is important for the coastal wetlands at Karepiro Stream mouth that earthworks sediment discharges are minimised as much as possible (under NPS-FM requirements), which is provided by the ESC measures.

## 5.3 Streamworks

### 5.3.1 Stream diversion

It has been identified through the design process to date that a small section of the western tributary from its emergence from the SEA (T\_6406), should be realigned (vertically &/or horizontally). However, any works will retain the stream length and hydrology, within a newly formed channel, and the riparian margin replanted and enhanced.

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<sup>7</sup> Adaptive Environmental Monitoring and Management Response Plan (approved by Auckland Council February 2015 in response to consent condition.

It is noted that the diversion (via a newly constructed channel) of the western stream is provided for by an existing resource consent which has not been implemented (reference REG-60850).

If this project is referred by the Minister, consent will be sought for the realignment that is now being considered for this project. As noted above, whether the realignment works proceed will depend on the final design of the earthworks and geotechnical requirements of the development.

The methods for works to the western tributary are set out by Woods (2022) and repeated in Appendix 3 of our report.

### 5.3.2 Culvert

Other than the potential diversion described above, proposed works within watercourses are limited to a culvert on the eastern watercourse in order to access the community centre area. In order to construct this, the watercourse will be temporarily diverted to enable installation of the culvert and provide for any fish passage measures. The culvert installation and operation will be designed and constructed to meet the requirements of the NESF and the AUP(OP).

## 6.0 Effects of Village 1 development on ecological values

### 6.1 Overall outcomes

The proposed layout of Village 1 is shown in the A3 folio of maps. The proposed Village 1 layout involves:

- Avoidance of any impacts on the adjacent SEAs (T\_6405 and T\_6406).
- Avoidance of impacts on identified natural wetlands and enhancements to these wetlands.
- Retention of the entire length of the eastern tributary.
- Enhancement of six identified natural inland wetlands.
- Diversion of a portion of the western tributary and formation of riparian wetland area.
- Riparian planting along the western and eastern streams from the SEAs to confluence with Karepiro Stream.
- Enhancement of fish passage where relevant (e.g., at locations of streamworks).
- Provision of predator and weed management programmes.

## 6.2 Effects on terrestrial ecological values

### 6.2.1 Vegetation

The development of the Village will result in the clearance of regenerating pine forest, largely dominated by wilding pine trees, gorse scrub and pampas. Some immature native vegetation will be cleared. None of the cleared vegetation is within an SEA and the area has low ecological value.

Except for a single reach of the western tributary, the riparian vegetation of the watercourses will be left intact and enhanced through additional planting along its length with pest and weed control. The diverted length of the western tributary will be subject to riparian planting and enhancement. Vegetation loss is not expected to occur within 10 m of a natural wetland, except where vegetation removal forms part of a wetland restoration and enhancement programme.

Given the minimal extent and the low ecological value of the vegetation to be removed, the effects of vegetation removal will be negligible.

## 6.3 Fauna

The clearance of the regenerating pine forest area has the potential to reduce habitat availability for native lizards and birds. As outlined above, the proposed Village development area has low value for lizards, and no native lizards have been recorded within the Weiti Precinct (I547) (including Precinct B).

We note that the provisions of the Weiti Precinct require the preparation Native Lizard Management Plan (at the time of the first subdivision application of any portion of sub-precinct B) (I547.6.7.10). The standard sets out the requirements for the plan. An indicative table of contents for the LMP is set out in Appendix 4.

The regenerating pine vegetation has low to moderate maturity, but birds may be present (see section 3.2.1 above). While there are no restrictions on the timing of the vegetation clearance within the Weiti Precinct rules, disturbance of nesting birds is an offence under the Wildlife Management Act 1953 and should be avoided. We recommend that a qualified ecologist makes an assessment of the likely bird nesting potential within the vegetation removal area (~~excluding the riparian areas~~), and undertakes monitoring of active bird nests to ensure they are not disturbed until the young chicks have fledged.

As the likelihood of bats being present in the development area is very low, and the vegetation is not generally suitable for roosting, effects on bats are likely to be negligible. No further management for bats is recommended.

## 6.4 Effects on freshwater ecological values

### 6.4.1 Extent of watercourses.

No loss of extent (length) of the western and eastern streams will occur as a result of the proposed Village development. The eastern tributary will remain intact from headwaters (within SEA T\_6405) to its confluence with the Karepiro Stream.

As outlined above, a portion of the western tributary may be realigned (vertically &/or horizontally). However, the stream length and hydrology will be retained within a newly formed channel, and the riparian margin replanted and enhanced.

Accordingly, the proposed plan change, and the development of Village 1 within Sub-Precinct B will not result in the loss of extent of intermittent or permanent watercourse. The western tributary will continue to be sustained through interaction with the headwaters and water table as an intermittent stream.

#### 6.4.2 Streamworks

The proposed streamworks (for both the culvert and the diversion) have the potential for the loss of stream functionality and connectivity, including fish movements, between upstream and downstream reaches. The effects management for avoiding, remedying and mitigating for streamworks is laid out in section 7.

The planned methodology for the streamworks is expected to be:

- Install controls to divert clean water away from works area. This may include installation of silt fence or bunds.
- Should works be required in the stream bed, then a stream diversion should be installed suitable for the duration and scope of works proposed.
- Works should be undertaken from an enhancement methodology, where minimal impact to the stream operation and performance occurs during the works.
- On completion of the enhancement works, the works areas shall be stabilised, and the controls removed.

Assuming that these measures are implemented the effects of proposed streamworks will be negligible.

#### 6.4.3 Sediment

The receiving environments for Sub-Precinct B are the Karepiro Stream, the estuary at the stream mouth and the adjacent coastal marine environment. These receiving environments have high ecological values.

The effects of sediment intrusion on aquatic habitats include the smothering of the habitats, discolouration of the water column, minimising and changing primary production, abrasion to gills and other body parts of fish and macroinvertebrates, and the remobilisation of sediment to impact on downstream environments.

In their assessment of erosion and sediment control for Village 1, Ridley Dunphy (2022) confirm that minimisation of inputs of sediment into the watercourses during development of the Village area will be managed through limiting earthwork areas exposed and through the provision of sediment control devices. Adaptive monitoring and associated continuous improvement will ensure that sediment measures and methodologies are maintained to prevent adverse effects on water quality and ecology of the Karepiro Stream and marine environments. Water quality and other management thresholds will be developed within the adaptive monitoring programme centred on water quality and ecological outcomes and based on standard best practice monitoring methods.

Further details are provided in the reports by Ridley Dunphy (2022).

#### 6.4.4 Stormwater

The proposed stormwater management for Sub-Precinct B is detailed in Woods (2022a,b). A key aim of the proposed stormwater management is to:

*'Minimize the adverse effects on water quality, stream health and ecological values of the receiving environment through the implementation of stormwater management devices; this includes tributaries of the Karepiro Bay.'*

The proposed stormwater management approach for the proposed Village 1 and focuses on water sensitive design with an emphasis on improving the water quality to the receiving environment. The receiving environment is the Karepiro Stream and Karepiro Bay. The development area is not within a SMAF (Stormwater Management Areas: Flow<sup>8</sup>) area; however, a SMAF like approach has been adopted to ensure that stormwater management meets the requirements of the AUP(OP).

Although the proposed stormwater management plan is designed to serve a greater number of residential lots and length of roads, the proposed stormwater management for the proposed Village 1 is designed to meet the requirements of the AUP(OP) and introduces elements that will improve the water management. Accordingly, the proposed stormwater management is unlikely to result in any adverse effects on the water quality, stream health and ecological values of the freshwater, estuarine or marine receiving environments.

Auckland Council has undertaken a comprehensive study to assess the effects of the change in land use and stormwater loads on the downstream Okura Estuary and Weiti River including the Long Bay - Okura Marine Reserve. A comprehensive summary from this study of long-term stormwater discharges from Weiti Village 1 site to the Coastal Marine Area (CMA) has been undertaken by MPS Limited (2022). The summary document concludes from the recent Auckland Council marine modelling study that the long-term model results (50 years) show that for the Village 1 development scenario the predicted deposition/erosion of sediment is less than 1 mm ("very low" condition rating). In addition, the predicted zinc and copper concentrations in the marine receiving environment are significantly below thresholds above which may cause adverse effects on biology. This summary provides further assurance of protection of marine ecology in the receiving environment of Karepiro Bay.

Treated stormwater will be discharged via the Karepiro Stream and coastal wetlands to Karepiro Bay. The coastal wetlands are not expected to be adversely affected by the discharge of treated stormwater in the operational phase of the project.

#### 6.4.5 Hydrology

Woods (2022b) provide the 'Stormwater Management Plan Strategy' for the development. The strategy has a strong emphasis on water quality. However, the approach is to 'achieve equivalent hydrology (infiltration, runoff volume, peak flow) to pre-development (grassed state) levels' is relevant to the maintenance of the natural wetlands in their present hydrological condition. That is, the strategy provides that there will be no drainage or partial drainage of the natural wetlands.

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<sup>8</sup> SMAF areas are mapped catchment areas that drain to streams that have been identified as being particularly sensitive to changes in stormwater flows, have high natural values, and are at potential risk from an increase in impervious area associated with future development.

We also note that the Woods (2022b) report also states that 'locations of outfalls from treatment devices shall be located so that they do not adversely affect the base flow or ground water in relation to the existing waterways and wetlands'. Accordingly, we understand that the proposed stormwater management will not result in a prohibited (NESF regulation 53) or non-complying activity (NESF regulation 52).

## 6.5 Effects on wetlands

As outlined in section 3 above, natural wetlands occur within the western and eastern tributaries. All wetlands will be retained, and drainage of these wetland areas will be avoided. No works will occur within the wetlands, there will be no diversion of water within a 100 m setback from the wetlands and no discharges will occur to the inland wetlands.

The present ecological values of the inland wetlands are low-moderate, and biodiversity and habitat for rare and threatened species will be enhanced with additional planting as well as improved pest and weed control.

The effects of the proposal on inland wetlands will be negligible and the benefits of the project will lead to enhancements of these ecological features.

## 6.6 Effects on estuarine and marine ecological values

Potential effects on estuarine and marine ecological values relate to the discharge of sediment during earthworks during the construction phase and the discharge of sediment and associated contaminants in stormwater during the operational phase. The project team recognises the high ecological values of the estuarine and marine receiving environments and have established robust measure to treat both ESC and stormwater discharges prior to discharge (as part of adaptive management responses). In addition, as outlined above, monitoring of sediment and infaunal benthos has shown that no effects have occurred as part of previous development at Karepiro Bay. Accordingly, with such safeguards in place, it is highly unlikely that there will be significant adverse effects on estuarine and marine communities or ecological values.

# 7.0 Effects management

The proposed Village 1 development at Weiti Bay involves measures to avoid, mitigate and remedy effects on ecological values, and will follow the effects management hierarchy, and are summarised below:

- Avoidance of natural wetlands. Any works within, or within 100 m of natural wetlands of the western and eastern streams will be avoided. The wetlands will be demarcated with tape and as appropriate for earthworks will be demarcated also at 100 m.
- Extent of stream length will be maintained with the inclusion of a diversion of the western stream.
- Provision of fish passage through the proposed culvert.
- Fish salvage and relocation prior to streamworks. A fish salvage and relocation plan will be developed for implementation during streamworks.

- Lizard salvage and relocation. As required by the Weiti Precinct Plan I547.6.7.10 (at the time of the first subdivision application of any portion of sub-precinct B).
- Avifauna management. Vegetation clearance outside of the bird breeding season and/or checks for bird nesting prior to vegetation clearance.
- Implementation of erosion and sediment controls.
- Implementation of stormwater management for flows and quality.

## 8.0 Ecological Enhancement

### 8.1 Enhancements

In addition to the provisions for the management of potential adverse effects outlined above, the following ecological enhancements are proposed as an outcome for the Village 1 development:

- Landscape planting and enhancements as detailed in the landscape assessment report (Boffa Miskell 2022).
- Weed management and enhancement planting in the freshwater wetlands of the western and eastern streams which will improve the ecological values and habitat for fauna (see below).
- Weed and pest management and enhancement planting within the SEAs (SEA T\_6405 and SEA\_T\_6406) which will improve ecological values and habitat for fauna.
- Creation of a boardwalk at rear of dunes of Weiti Bay which will reduce pressure on the ecological habitat (notably the breeding, feeding and roosting habitat for resident and migrating birds) of the dunes and beach of Karepiro Bay by diverting people away from the dune and foreshore area.
- Contribution to the enhancement of the North-West Wildlink through the provision of improved pest and weed management within the existing SEAs.

### 8.2 Enhancements to wetlands

As noted above, as part of the proposed development, enhancements are planned for the existing natural wetlands. These enhancement will take the form of weed management and enhancement planting and may result in removal of vegetation within, or within a 10 m setback from a natural wetland and possibly earthworks or disturbance within 10 m of a natural wetland. Accordingly, these activities will be undertaken as a permitted activity (NESF regulation 38) or as a restricted discretionary activity (NESF regulation 39) for the purpose of restoration of natural wetlands.

## 9.0 Review against statutory provisions

A review of the outcomes against the relevant statutory provisions is provided in Appendix 5. The provisions of the NPS-FM, NESF, AUP(OP) and the Weiti Precinct are met.

## 10.0 Conclusion

In conclusion, the proposed Village 1 development within Policy Area 2 of Sub-precinct B will not result in significant adverse effects on the ecological values of the precinct area, and the provisions of the NESF, NPS-FM and AUP(OP) have been considered and addressed.

## 11.0 References

- Australia and New Zealand Guidelines (ANZG) 2018.
- Boffa Miskell 2022. Weiti Precinct: Village 1 Fast Track Consent Application. Landscape Assessment. Report prepared by Boffa Miskell Ltd.
- Hewitt, J. 2008. Benthic ecology of Weiti Estuary and Karepiro Bay. Prepared by NIWA for Auckland Regional Council technical Report 2008/019.
- MFE 2020. Wetland delineation protocols. Published by Ministry for the Environment, Wellington.
- Ridley Dunphy 2022. Weiti Bay Village 1: Assessment of Erosion and Sediment Control Approach. Report prepared by Ridley Dunphy Environmental Ltd.
- Swales, A.; Gibbs, M.; Ovensen, R.; Budd, R.; Hermansphan, N. (2008b). Sedimentation in the Okura – Weiti – Karepiro Bay system. NIWA Client Report HAM2008-153 for Auckland Regional Council.
- Woods 2022a. Memorandum – Covid-19 fast Track Consent Referral – Earthworks. Weiti Bay Village 1. Memorandum prepared by Woods, March 2022.
- Woods 2022b. Memorandum – Covid-19 fast Track Consent Referral – Civil Infrastructure. Weiti Bay Village 1. Memorandum prepared by Woods, October 2022.

# Appendix 1: Stream classification

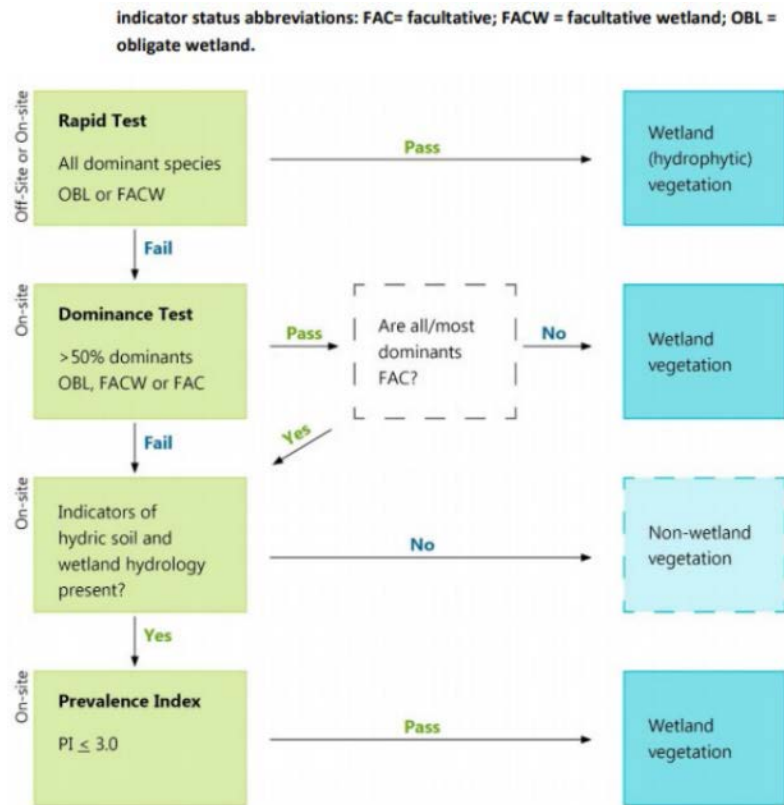
## Stream Classification

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)



# Appendix 3: Proposed Streamworks Methodology (from Woods 2022a)

## Works adjacent to watercourses

The proposed earthworks operations shall be set back from the watercourses and wetlands by at least 10 m. The works adjacent to watercourses shall include:

- Bulk earthworks at least 10 m from wetlands or watercourse.
- Geotechnical drainage outlets including the installation of erosion protection to watercourse banks.
- Stormwater drainage outlets including the installation of erosion protection to watercourse banks.
- Stormwater overland flow path outlets including the installation of erosion protection to watercourse banks.
- Construction of stormwater treatment devices.

## Works within watercourses

The proposed works within watercourses is limited to a culvert on the eastern watercourse in order to access the community centre area. In order to construct this, the watercourse shall be temporarily diverted to enable installation of the culvert and any fish passage measures.

The construction of a watercourse diversion will take place during a period of settled weather long enough to encompass all the works and to ensure flows in the stream will be low and steady.

- 1) The diversion will be constructed up to within 5 m of the bank of the existing watercourse and stabilized ready for flows. This step and step 2 will be constructed for both the upstream and downstream connections of the watercourse diversion.
- 2) The watercourse will then be dammed off above and below the works and de-fished (in accordance with the ecologist's reporting) and dewatered. Additional flows from the watercourse will be temporarily:
  - a. pumped from above the upstream dam to below the downstream dam for works which will be completed within 1 day; or
  - b. diverted through novacoils laid beside the works from above the upstream dam to below the downstream dam for works which will be completed within 1 week; or
  - c. diverted in a temporary watercourse from above the upstream dam to below the downstream dam for works which will be completed in more than 1 week.

When all water has been removed from the watercourse area, the bed will be excavated to competent ground and cloth and hardfill will be placed up to the correct level of the culvert's invert. Then the culvert will be placed and backfilled up to subgrade of the concrete crossing. Rock rip rap will be placed on the batters next to the inlet and outlet of the pipe to ensure there is no scour.

- d. The last 5 m of the diversion will be constructed including breaking through the bank of the existing watercourse and then appropriately stabilized.
- e. When the culvert installation is complete, diversion will stop and be removed, then the downstream dam at the end of the watercourse diversion will be removed first followed by the upstream dam at the start of the watercourse, allowing it once again to flow.

The removal of a stream diversion shall undertake a similar methodology to the installation of the stream diversion; however the stream will be diverted back to its original alignment. A period of settled weather be required prior to the works being undertaken.

Upon backfill of the stream diversion, the stream bed and bank adjacent to the diversion will be stabilized with geotextile and rock rip rap placed to ensure there is no scour in this location. Landscaping can follow on after these works to further stabilize the area

# Appendix 4: Indicative Lizard Management Plan (Table of Contents)

1. Introduction
2. Statutory Framework
3. Lizard management approach
4. Lizard values
  - a. Habitats, presence
5. Potential effects on lizards
  - a. Level and magnitude of effect
6. Monitoring for lizards
7. Lizard salvage, transfer and release methods
8. Lizard release site assessment
9. Contingency measures
10. Post-release monitoring and reporting

# Appendix 5: Response to key statutory provisions

Objective reference	Objective	Outcome
<b>NPS-FM</b>		
3.24(1)	<p>“The loss of river extent and values is avoided, unless the council is satisfied:</p> <p>(a) that there is a functional need for the activity in that location; and the effects of the activity are managed by applying the effects management hierarchy.”</p>	<p>The proposed development of Village 1 of the Sub-Precinct B will not result in the loss of river extent or values. While a section of the western tributary will be lifted to a higher elevation it will be fully reformed and there will be no loss of extent.</p>
<b>NOF</b>		
NOF (Subpart 2, 3.9(1)).	<p><b>Compulsory values</b></p> <p><b>Ecosystem health</b> refers to the extent to which an FMU or part of an FMU supports an ecosystem appropriate to the type of water body (for example, river, lake, wetland, or aquifer).</p> <p>There are 5 biophysical components that contribute to freshwater ecosystem health, and it is necessary that all of them are managed. They are:</p> <p><i>Water quality</i> – the physical and chemical measures of the water, such as temperature, dissolved oxygen, pH, suspended sediment, nutrients and toxicants</p> <p><i>Water quantity</i> – the extent and variability in the level or flow of water</p> <p><i>Habitat</i> – the physical form, structure, and extent of the water body, its bed, banks and margins; its riparian vegetation; and its connections to the floodplain and to groundwater</p> <p><i>Aquatic life</i> – the abundance and diversity of biota including microbes, invertebrates, plants, fish and birds.</p> <p><i>Ecological processes</i> – the interactions among biota and their physical and chemical environment such as primary production, decomposition, nutrient cycling and trophic connectivity.</p> <p>In a healthy freshwater ecosystem, all 5 biophysical components are suitable to sustain the indigenous aquatic life expected in the absence of human disturbance or alteration (before providing for other values).</p> <p><b>Threatened species</b> refers to the extent to which an FMU or part of an FMU that supports a population of threatened species has the critical habitats and conditions necessary to support the presence, abundance, survival, and recovery of the threatened species. All the components of ecosystem health must be managed, as well as (if appropriate) specialised habitat or conditions needed for only part of the life cycle of the threatened species.</p>	<p>The compulsory values of the NOF are met.</p> <p><i>Water quality</i> – the physical and chemical measures of the water, such as temperature, dissolved oxygen, pH, suspended sediment, nutrients and toxicants are all maintained or managed.</p> <p><i>Water quantity</i> – the extent and variability in the level or flow of water. Flow of water in both tributaries and to the Karepiro Stream are maintained as neutral.</p> <p><i>Habitat</i> – the physical form, structure, and extent of the water body, its bed, banks and margins; its riparian vegetation; and its connections to the floodplain and to groundwater for both tributaries are retained.</p> <p><i>Aquatic life</i> – the abundance and diversity of biota is provided for through the above three attributes.</p> <p><i>Ecological processes</i> – the interactions among biota and their physical and chemical environment such as primary production, decomposition, nutrient cycling and trophic connectivity are all retained in both tributaries and to the Karepiro Stream.</p> <p>All components of ecosystem health are maintained for all or part of the life cycle of the threatened species present, including fish passage and enhanced wetland habitat.</p>

	<p>(1) Every regional council must include the following fish passage objective (or words to the same effect) in its regional plan(s):</p> <p>The passage of fish is maintained, or is improved, by instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.</p>	The proposed development of Village 1 of the Sub-Precinct B will maintain fish passage, including through the section of stream that is to be diverted/realigned.
<b>NESF</b>		
<b>Drainage of natural wetlands</b>		
Non-complying activities	<p>52</p> <p>(1) Earthworks outside, but within a 100 m setback from, a natural wetland is a non-complying activity if it—</p> <p>(a) results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland; and</p> <p>(b) does not have another status under any of regulations 38 to 51.</p> <p>(2) The taking, use, damming, diversion, or discharge of water outside, but within a 100 m setback from, a natural wetland is a non-complying activity if it—</p> <p>(a) results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland; and</p> <p>(b) does not have another status under any of regulations 38 to 51.</p>	<p>Planned earthworks within a 100 m setback occur in the upper eastern tributary. The earthworks and water management will be undertaken so as not to result in the complete or partial drainage of all or part of a natural wetland(s).</p> <p>The taking, use, damming, diversion, or discharge of water outside, but within a 100 m setback from the natural wetland(s) will not result in the drainage of all or part of a natural wetland</p>
	<p>54</p> <p>The following activities are non-complying activities if they do not have another status under this subpart:</p> <p>(a) vegetation clearance within, or within a 10 m setback from, a natural wetland;</p> <p>(b) earthworks within, or within a 10 m setback from, a natural wetland;</p> <p>(c) the taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland.</p>	<p>The proposed development of Village 1 of the Sub-Precinct B will not result in:</p> <ul style="list-style-type: none"> <li>• Vegetation cleared within, or within a 10 m setback from, a natural wetland;</li> <li>• earthworks within, or within a 10 m setback from, a natural wetland;</li> <li>• the taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland</li> </ul>
Prohibited activities	<p>53</p> <p>(1) Earthworks within a natural wetland is a prohibited activity if it—</p> <p>(a) results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland; and</p> <p>(b) does not have another status under any of regulations 38 to 51.</p> <p>(2) The taking, use, damming, diversion, or discharge of water within a natural wetland is a prohibited activity if it—</p> <p>(a) results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland; and</p>	<p>The proposed development of Village 1 of the Sub-Precinct B will not:</p> <ul style="list-style-type: none"> <li>• Result in earthworks that will occur with a natural wetland, or within a 10 m setback from a natural wetland;</li> <li>• Result in the taking, use, damming, diversion, or discharge of water within, or within a 100 m</li> </ul>

	(b) does not have another status under any of regulations 38 to 51.	setback from, a natural wetland. • Result in the taking, use, damming, diversion, or discharge of water within a natural wetland.
<b>Restoration of natural wetlands</b>		
Permitted activities	<p>38 Permitted activities</p> <p>(1) Vegetation clearance within, or within a 10 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of natural wetland restoration; and (b) complies with the conditions.</p> <p>(2) Earthworks or land disturbance within, or within a 10 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of natural wetland restoration; and (b) complies with the conditions.</p> <p>(3) The taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of natural wetland restoration; and (b) complies with the conditions.</p> <p>(4) The conditions are that— (a) the activity must comply with the general conditions on natural wetland activities in NES regulation 55; and (b) if the activity is vegetation clearance, earthworks, or land disturbance, the activity must not occur over more than 500 m<sup>2</sup> or 10% of the area of the natural wetland, whichever is smaller.</p> <p>(5) However, the condition in subclause (4)(b) does not apply if the earthworks or land disturbance is for planting.</p>	Anticipated restoration of natural wetlands as part of the proposed development of Village 1 of the Sub-Precinct B will meet the requirements of the permitted activity.
	<p>39 Restricted discretionary activities</p> <p>(1) Vegetation clearance within, or within a 10 m setback from, a natural wetland is a restricted discretionary activity if it— (a) is for the purpose of natural wetland restoration; and (b) does not comply with either of the conditions in regulation 38(4).</p> <p>(2) Earthworks or land disturbance within, or within a 10 m setback from, a natural wetland is a restricted discretionary activity if it— (a) is for the purpose of natural wetland restoration; and (b) does not comply with either of the conditions in regulation 38(4).</p> <p>(3) The taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland is a restricted discretionary activity if it is for the purpose of natural wetland restoration.</p>	Anticipated restoration of natural wetlands as part of the proposed development of Village 1 of the Sub-Precinct B will meet the requirements of the restricted discretionary activity.
<b>Culverts</b>		

	<p>70 Permitted activities</p> <p>(1) The placement, use, alteration, extension, or reconstruction of a culvert in, on, over, or under the bed of any river or connected area is a permitted activity if it complies with the conditions.</p> <p><i>Conditions</i></p> <p>(2) The conditions are that—</p> <ol style="list-style-type: none"> <li>a. the culvert must provide for the same passage of fish upstream and downstream as would exist without the culvert, except as required to carry out the works to place, alter, extend, or reconstruct the culvert; and</li> <li>b. the culvert must be laid parallel to the slope of the bed of the river or connected area; and</li> <li>c. the mean cross-sectional water velocity in the culvert must be no greater than that in all immediately adjoining river reaches; and</li> <li>d. the culvert's width where it intersects with the bed of the river or connected area (<b>s</b>) and the width of the bed at that location (<b>w</b>), both measured in metres, must compare as follows: <ol style="list-style-type: none"> <li>i. where <math>w \leq 3</math>, <math>s \geq 1.3 \times w</math>;</li> <li>ii. where <math>w &gt; 3</math>, <math>s \geq (1.2 \times w) + 0.6</math>; and</li> </ol> </li> <li>e. the culvert must be open-bottomed or its invert must be placed so that at least 25% of the culvert's diameter is below the level of the bed; and</li> <li>f. the bed substrate must be present over the full length of the culvert and stable at the flow rate at or below which the water flows for 80% of the time; and</li> <li>g. the culvert provides for continuity of geomorphic processes (such as the movement of sediment and debris).</li> </ol> <p><i>Information requirements</i></p> <ol style="list-style-type: none"> <li>h. See also regulations 62 and 63 for information requirements that apply to the permitted activity (unless the activity is use).</li> </ol>	<p>The proposed development of Village 1 of the Sub-Precinct B will meet the requirements of the permitted activity.</p>
<b>AUP(OP)</b>		
<b>Loss of freshwater system</b>		
Objective B7.3.1 (2)	Loss of freshwater systems is minimised.	The proposed development of Village 1 of the Sub-Precinct B will not result in any loss of freshwater systems.
Policy B7.3.2 (4)	Avoid the permanent loss and significant modification or diversion of lakes, rivers, streams (excluding ephemeral streams), and wetlands and their margins.	No permanent loss or significant modification (or diversion) of lakes, rivers, streams, and wetlands and their margins will occur as a result of the proposed development of Village 1 of the Sub-Precinct B. Values are maintained or enhanced.
<b>Allocation of freshwater</b>		
Objective B7.4.1	(1) Coastal water, freshwater and geothermal water are used within identified limits while safeguarding the life-supporting capacity and the natural, social and cultural values of the waters.	The proposed development of Village 1 of the Sub-Precinct B will continue to maintain freshwater within identified limits, quality, and safeguard the life-supporting

	<p>(2) The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded.</p> <p>(3) Freshwater and geothermal water is allocated efficiently to provide for social, economic and cultural purposes.</p> <p>(4) The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced.</p> <p>(5) The adverse effects from changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated.</p> <p>(6) Mana Whenua values, mātauranga and tikanga associated with coastal water, freshwater and geothermal water are recognised and provided for, including their traditional and cultural uses and values</p>	capacity and the values of the tributaries and the Karepiro Stream.
Policy B7.4.2	Safeguarding spring flows, surface waterbody base flows, ecosystem processes, life-supporting capacity, the recharge of adjacent aquifers, and geothermal temperature and amenity.	There are no effects on spring flows, surface waterbody base flows, ecosystem processes, life-supporting capacity and the recharge of adjacent aquifers. There are no geothermal features within the proposed Village 1 or the Sub-Precinct B.
<b>Discharge</b>		
Objective E1.3	<p>Manage discharges, subdivision, use, and development that affect freshwater systems to:</p> <p>(1) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1. or</p> <p>(2) enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1.</p> <p>(3) other indicators of water quality and ecosystem health</p>	The proposed development of Village 1 of the Sub-Precinct B will maintain water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1.
Policy E1.2	<p>(1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.</p> <p>(2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.</p> <p>(3) Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.</p>	<p>The development of Village 1 of the Sub-Precinct B will maintain</p> <ul style="list-style-type: none"> <li>• Freshwater and sediment quality</li> <li>• The mauri of freshwater</li> <li>• Stormwater and wastewater networks to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.</li> </ul>

<b>Lakes, rivers, streams and wetlands</b>		
Objective E3.2	<p>(1) Auckland's lakes, rivers, streams and wetlands with high natural values are protected from degradation and permanent loss.</p> <p>(2) Auckland's lakes, rivers, streams and wetlands are restored, maintained or enhanced.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(6) Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.</p>	<p>The proposed development of Village 1 of the Sub-Precinct B (including the proposed stream diversion) will not result in:</p> <ul style="list-style-type: none"> <li>• degradation or loss of waterways.</li> <li>• any residual adverse effects of the development.</li> <li>• reclamation or drainage of watercourses or wetlands.</li> </ul>
Policy D9.2	<p>(1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.</p> <p>(2) Indigenous biodiversity values of significant ecological areas are enhanced.</p> <p>(3) The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.</p>	<p>The proposed development of Village 1 of the Sub-Precinct B will not result in:</p> <ul style="list-style-type: none"> <li>• degradation or loss of any areas of significant biodiversity.</li> </ul>
<b>Significant Ecological Areas</b>		
Objective D9.2	<p>(1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.</p> <p>(2) Indigenous biodiversity values of significant ecological areas are enhanced.</p> <p>(3) The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.</p>	<p>The proposed development of Village 1 of the Sub-Precinct B will result in:</p> <ul style="list-style-type: none"> <li>• No degradation or loss of any areas of significant biodiversity.</li> <li>• Enhancement of significant ecological areas.</li> </ul>
Policy D9.3	Managing effects on significant ecological areas – terrestrial.	The proposed development of Village 1 of the Sub-Precinct B will not result in any effects, loss or degradation of terrestrial significant ecological areas.
<b>Natural stream management</b>		

Objective D4.2	Rivers and streams identified as natural stream management areas with high natural character and high ecological values are protected.	None of the streams within the proposed Village 1 of the Sub-Precinct B are classified as natural stream management areas.
Policy D4.3	<p>(1) Protect the in-stream values and riparian margins of natural stream management areas.</p> <p>(2) Allow water takes and contaminant discharges only where they are of a scale and type that protects the in-stream values of these rivers and streams.</p> <p>(3) Maintain and where possible enhance fish passage between the coastal marine area and the upstream extent of natural stream management areas.</p> <p>(4) Avoid structures and activities in natural stream management areas that disturb, damage, remove or replace the natural bed and course of the river or stream and its associated indigenous riparian vegetation.</p> <p>(5) Provide for infrastructure in natural stream management areas where there is a functional or operational need to be in that location or traverse the area and there is no practicable alternative.</p>	The proposed development of Village 1 of the Sub-Precinct B will protect instream values and riparian margins and maintain fish passage.
<b>Weiti Precinct I547</b>		
Key objectives	<p>Objectives (I547.2)</p> <p>(8) <i>The greenbelt and vegetated cover in the area between the Okura River and the urban Hibiscus Coast is maintained.</i></p> <p>(8) <i>Key natural and heritage features and the distinctive character of the precinct are protected from inappropriate subdivision and development.</i></p> <p>(9) <i>Phased and progressive enhancement and expansion of existing significant ecological areas is required and their long-term preservation and management is ensured.</i></p> <p>(13) <i>Adverse effects of land modification, development and land use activities on the natural environment, including landform, water courses, significant vegetation and the Coastal Marine Area are avoided, remedied or mitigated.</i></p> <p>(14) <i>Adverse effects of stormwater runoff during and after development are avoided.</i></p> <p>(15) <i>Appropriate wastewater and water infrastructure is provided to development on significant values within the receiving environment.</i></p>	The proposed development of Village 1 of the Sub-Precinct B will meet the objectives of the Weiti Precinct.
Key policies	<p>General</p> <p>(1) <i>Enable activities of a nature, scale, intensity and location which allow the greenbelt to be retained.</i></p> <p>(2) <i>Require subdivision and land use activities to be carried out in a manner which avoids the adverse effects of stormwater runoff on receiving environments.</i></p> <p>(3) <i>Require subdivision and activities to be connected to a public reticulated wastewater system.</i></p> <p>(4) <i>Require subdivision and activities to be connected to a public reticulated water system.</i></p> <p>(5) <i>Subdivision and activities should avoid, remedy or mitigate adverse effects on the surrounding road network.</i></p> <p>(6) <i>Require activities to be carried out in a manner which avoids adverse effects on the native flora and fauna of the precinct and the adjoining coastal environment.</i></p> <p>And</p> <p>(23) <i>Enable a dense Village environment to be created, having regard to the need to manage</i></p>	The proposed development of Village 1 of the Sub-Precinct B will meet the key policies of the Weiti Precinct.

	<i>stormwater flows and water quality on downstream catchments.</i>	
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### **About Boffa Miskell**

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Whangarei, Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin, and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

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