Memo

To:	Joel McKinley, Pokeno Developments NZ Ltd	Job No:	2533
From:	Graham Ussher, RMA Ecology Ltd	Date:	20 December 2025
cc:	Renee Fraser-Smith, Tollemache Consultants		
Subject:	Pokeno Housing & Tourism Project: Fast Track referral ecology overview		

1. Introduction

This report has been prepared to support a fast-track referral application for the proposed Pokeno Housing and Tourism Project (hereafter, 'the Project').

Pokeno Developments NZ Limited propose development across their landholdings for the Pokeno Housing and Tourism Project using the Fast Track Approvals Act 2024 (FTAA) (Figure 1).

The overall purpose of this report is to outline the ecology aspects of the development and how potential adverse effects arising from the development and operation of the Project will be managed.

The preliminary ecological assessment contained within this report takes into account the Waikato District and Regional Council rules and policies around indigenous vegetation, watercourses, wetlands and wildlife. Also taken into account are the directives in the national policy statements for freshwater management (the NPS-FM), and indigenous biodiversity (NPS-IB), as well as the National Environmental Standards for Freshwater (NES-F).

This report is high level and that level of detail will follow with the substantive application.

2. Familiarity with sites and qualifications

The author of this report, Dr Graham Ussher, and the ecology team at RMA Ecology Ltd are familiar with the subject sites at Yes Valley, Pokeno West and Havelock Village. We have undertaken site investigations over these areas in recent years, including:

- Yes Valley — 2020 – mapping of streams/ wetlands, observational surveys over northern portion
  2023 – survey of wetlands and indigenous vegetation at 370 Bluff Road
  2020 – survey of wetland, streams, indigenous vegetation at 35 Trig Road
- Havelock Village — 2020-2023 - full ecological surveys across the site, with a focus on wetlands/ streams
- Pokeno West — 2023-2025 – full ecological surveys in eastern half of site & general survey throughout

From these previous investigations, we have an excellent base understanding of the ecology values, ecology challenges, and ecology opportunities that these sites present for a development at these locations.

Our understanding of the ecology of these sites provides a robust foundation for the preliminary assessment provided in this report, and should provide the confidence that the risk of adverse impacts on critical or important ecology matters, values or risk is very low.

In terms of qualifications as ecologists, we provide the following summary of the qualifications and experience of the lead ecologist, Dr Graham Ussher.

- Position Principal Ecologist and Director of RMA Ecology Ltd
- Years of experience 32 years as a practicing ecologist

Over his 30-odd years in the industry, Graham has focused on work in greenfields areas, lowland shrublands and forests, coastal environments, and environments already modified in terms of wildlife habitat. His past experience in wildlife research, Council parklands management and wildlife programmes with the Department of Conservation required work in wilderness and offshore locations, providing a robust benchmark against which to assess effects in more modified land proposed for active development.

Graham has worked for many years with multi-disciplinary projects teams. From this he has a robust understanding of civil construction processes and engineering design for flood, stormwater, and wastewater management, and a base understanding of issues involved with land development, mining and quarrying sectors, resource management planning, civil engineering, renewables (wind, solar, hydro) and contaminated land management.

In recent years, Graham has been sought out for his experience in effects management theory, processes and practical application. He has presented on matters of the effects management hierarchy and offsetting to professional bodies including the Planning Institute and Law societies. He has written or co-written national guidance on ecological effects assessment in New Zealand, as well as national guidance on biodiversity offsetting and compensation frameworks as applied under the RMA. Graham regularly appears as an expert at Hearings, Environment Court and for Fast Track applications (COVID-19 and FTAA), both for applicants, submitters and Council, and more recently as a panel member.

3. Proposed development

The Project includes three discrete precincts around Pokeno, Waikato. These are Yes Valley, Pokeno South / Havelock, and Pokeno West (see Appendix A for concept development plans). A summary of the activities that will be involved in the development of these precincts is provided below.

Yes Valley

- The proposed activities would occur over landholdings at 42a Potter Road and 242, 370 Bluff Road and include:
    - A tourism resort including a range of activities such as hotel accommodation (200 room hotel), glamping/motorhome areas, a conference centre, spa and restaurant facilities;
    - A farm showground and NZ Made Hub (to provide local New Zealand brands with the opportunity to showcase their products); and
    - Infrastructure including, new roads, water supply network, stormwater management devices and wastewater discharging to a new centralised system for all land holdings.

- A centralised wastewater infrastructure solution is proposed which would service all of the Yes Valley Resort and Urban development activities. This includes the following activities which would be located at Yes Valley:
    - Wastewater treatment plant;
    - Treated wastewater disposal areas (potential to include 35 Trig Road, 39 and 135 Potter Road);
    - Treated wastewater disposal “land contact device” and associated “outfall”; and
    - Re-use options for treated wastewater.

It is proposed to undertake earthworks over an area of up to 30 hectares (see engineering assessment report provided by CivilPlan Consultants). The earthworks will form building platforms and accesses and provide slope stabilisation and drainage.

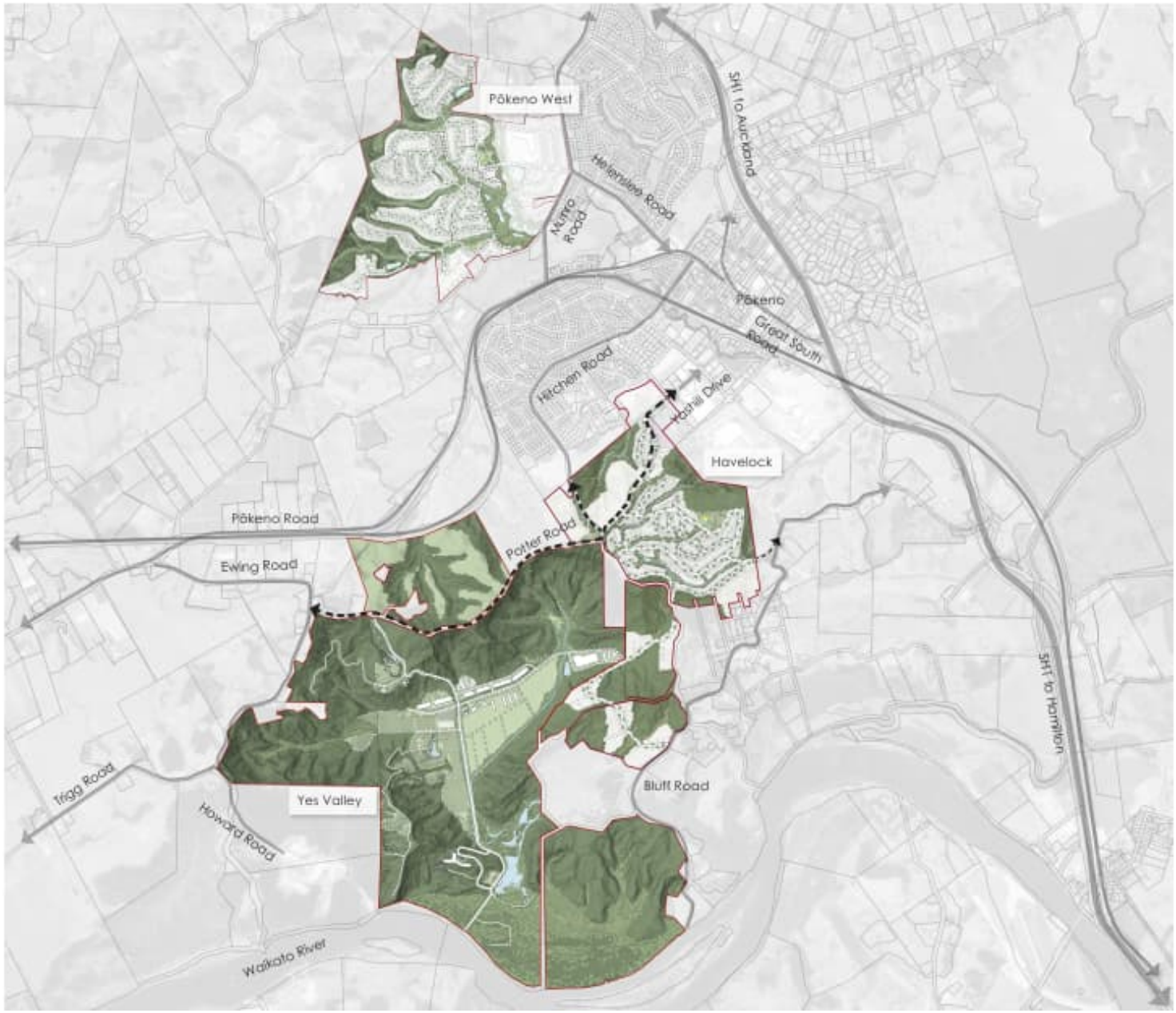

Figure 1. Illustrative Masterplan for the three precincts of development, encompassing Yes Valley, Havelock, and Pokeno West.

Pokeno South / Havelock

- The proposed activities would occur over landholdings at 5 Hitchen Road, 88 and 278 Bluff Road and include:
    - Vacant lot residential subdivision in stages for approximately 750 dwellings;
    - Infrastructure including, new roads, water supply network, stormwater management devices and network, reserves, recreation trails; and
    - Wastewater infrastructure and any bulk "main" to connect to wider solution.

Site earthworks will be required to achieve viable building platforms and achieve compliant road gradients. Those earthworks, over several stages, involve approximately 1,000,000 m^3 of cut and a total fill of 1,000,000 m^3, with earthworks proposed across a 60 hectare area.

Pokeno West

- The proposed activities would occur over landholdings at 87, 109 and 119 Helenslee Road and 53 Munro Road and include:
    - Vacant lot residential subdivision in stages for approximately 1,500 dwellings plus a superlot for the future neighbourhood centre;
    - Infrastructure including, new roads, water supply network, stormwater management devices and network, reserves, recreation trails; and
    - Wastewater infrastructure and any bulk "main" to connect to wider solution.

In total, approximately 1,000,000 m^3 of cut and a total fill of 1,000,000 m^3 is proposed, with earthworks proposed across an 85 hectare area.

4. Ecology values

Yes Valley and Pokeno South / Havelock precincts occupy the same general landform and are connected in the local landscape.

The precincts are located within the Meremere Ecological District, approximately midway between Mercer and Tuakau. The Ecological District is entirely lowland habitats and includes alluvial flats, shallow lakes, wetlands, and floodplains, and as well as surrounding low hills.

Soils of flat low-lying land within the Yes Valley precinct close to the Waikato River are either poorly drained gleyed alluvial soils or peaty soils. On the low-lying hills such as along Trig Road and Potters Road, clay soils derived from volcanic ash are widespread. Some areas of hill-country have leached soils derived from -sedimentary rocks.

Prior to human settlement, the low-lying hill country of the Meremere Ecological District would have been almost entirely forested, with kauri (*Agathis australis*) being locally abundant on ridges and hillslopes, and taraire (*Beilschmiedia tarairi*) abundant on hillslopes and gullies. Extensive floodplain wetlands on alluvial soils were dominated by stands of kahikatea (*Dacrycarpus dacrydioides*). Freshwater wetlands on peat deposits were widespread along the course of the lower Waikato River, and these supported fens and peat bog vegetation characterised by manuka (*Leptospermum scoparium*), sedges, and rushes.

Like many lowland ecological districts in New Zealand, the Meremere Ecological District has been extensively modified by human settlement. Most of the rolling hill country has been converted to farmland with extensive exotic-dominated pastoral grasslands. Prolonged grazing on steep land at the site has (as is common across New Zealand farms) resulted in sediment and soil mobilization downslope which has resulted in infilling of small tributary streams over time. This has resulted in wetland plants (often exotic invasive species) colonising sediment drifts within watercourses and transforming streams into wetland vegetated gullies or wetland-stream complexes.

The low-lying hills within the Yes Valley and Havelock properties reach an altitude of 130 metres above sea level and the area is characterised by a steep escarpment through the proposed Yes Valley access locations. The

escarpment and associated ridgeline support a band of older-growth forest across the precinct inland from the Waikato River. The areas of indigenous forest on the site are, despite their small size, cumulatively one of the larger areas of indigenous forest remaining in the Meremere Ecological District.

On the Pokeno South / Havelock precinct, most of the land has been intensively managed as farmland, with only gully bottoms containing any ecology features of interest – and these comprise very degraded streams and induced, degraded wetlands. Stock have free access to streams and wetlands, resulting in pugging, soil compaction, eutrophication, bed disturbance, and bank erosion – all of which results in very low value ecological features. Woody vegetation is limited to mostly weedland of the fringes of paddocks and lining streams, with some small patches of regenerating native scrubland, and a few (approx. 8) solitary old-aged trees in paddocks that have escaped the burning and grazing cycles over decades of farming.

On the Yes Valley precinct, the land forms a broad valley surrounded by low hills that are well covered in regenerating and mature native forest. The broad valley would have once support extensive swamp wetland, which has been mostly historically drained and farmed as pasture grazing. Wetlands right through Yes Valley have been converted to farmland, with some parts showing extreme environmental damage due to continual cattle grazing. The values that were once present in these extensive wetlands would have included extensive flaxland and kahikatea swamp and rare wetland bird species including crake species, fernbird, and bittern. While some may be present in the small less modified parts of wetlands on the Precinct, it is likely that most values associated with wetlands have long since disappeared.

Forest areas surrounding the Yes Valley development support mature and regenerating indigenous forest. These areas are heavily damaged by possums, stock, deer and goats, and offer exceptional opportunities for protection and restoration of regionally and nationally important biodiversity, including native bats, rare plants and native lizard communities. Bats are known to be present within this forest, so avoidance of impacts on bat roosting trees, and the incorporation of bat-sensitive lighting designs as part of the project will be important.

The Pokeno South and Yes Valley precincts have been subject to ecological surveys over several years, although with different intensities and focal areas. Not all areas have been thoroughly assessed to date, and not all species assemblages have been targeted during surveys. However, enough is known of these wide areas from existing surveys and database assessments to be assured that the ecology values will include:

- Native bats in lowland forest and regenerating forest area (low numbers/ localised).
- Extensive degraded and partly converted wetlands towards the Waikato River.
- Native lizards in low numbers/ low diversity.
- Most likely threatened and At Risk wetland birds within less modified wetland areas, including crakes, fernbird and bittern.
- Degraded waterways and drain systems through old wetland areas, which will support native fish including eels, banded kokopu, and may support threatened native mudfish.

The Pokeno West precinct is in the southern part of the Manukau Ecological District. The Manukau Ecological District is characterised as containing alluvial flats and terraces which in pre-human times supported stands of kahikatea swamp forest, freshwater wetlands, and lowland conifer and podocarp/broadleaf forest.

The District is now highly modified, with original ecosystems mostly drained and converted to farmland. Successive burning, clearing, and farming of the fertile soils have reduced native forest areas to small fragments within a landscape dominated by farms, market gardens, and more recently, conversion to urban residential suburbs.

The Pokeno West precinct has been greatly modified through land clearance for farming. The landform of the precinct and surrounds is a gently sloping valley which runs from north to south, and which supports a network of streams, wetlands, weedy and native riparian vegetation, and areas of regenerating native shrubland – all of which is set within a predominantly pastoral and agricultural setting.

The eastern part of the precinct is currently undergoing consented development to residential housing and a school, as well as extensive wetland creation and restoration.

The central and western parts of the precinct are rolling hill country with distinctive small valleys and ridges. The ridge features have long been cleared of native vegetation and are managed as grazed pasture paddocks. The valleys set back from the main agricultural floodplains support a mix of younger and older regenerating exotic weedland and native scrubland, following reversion from past burning and farming.

Several intermittent streams traverse the western part of the precinct and join to a permanent stream through the central north-south shallow valley and floodplain complex.

The Pokeno West precinct is known to have these ecology values:

- Degraded (grazed, nutrient-rich waters) wetlands and streams (unfenced, stock damaged, pugged)
- Native bats (low numbers/ localised)
- Young native shrubland and mixed woody weedland in valleys
- Native lizards in low numbers/ low diversity

The site may also have wetland birds, including rare bittern, fernbird and crake – these have yet to be properly assessed on the site.

The illustrative Masterplan shows that most of the proposed development areas are outside of the streams/ wetlands and native shrubland areas, and the habitats that could support native wildlife. The avoidance of these features provides opportunities to restore these large valley areas through plant pest control, animal pest control, and native tree planting to provide a far better connected and enhanced ecology on the precinct than its present state.

Overall, there are abundant opportunities for ecological enhancement and restoration - with a far greater range and expanse of areas available than will be needed to mitigate, offset or compensate for the anticipated small level of impacts on indigenous vegetation, wetlands and habitats of native wildlife. As shown in Table 1, there are effective, standard approaches to avoiding, minimising and managing adverse effects on ecology for this site.

Maps that illustrate the results of initial ecology values mapping (from 2020- 2025, and with a focus on wetlands and watercourses), are provided in Appendix B.

5. Potential adverse effects

Potential adverse effects from construction and operation of the development include direct and indirect effects, as well as temporary and long-term effects. We list these below.

All are standard effects that are common to major earthworks programmes elsewhere, including those that deal with standard subdivision of residential land, and hotel / resort development of the intended scale, and which can be addressed through standard approaches for avoidance, minimisation and offsetting of residual effects.

- Potential direct effects
    - Loss of indigenous communities – streams, wetlands, forests
    - Loss of habitat for native wildlife bats, lizards, native fish, native birds
    - Loss of values of streams where culverting is proposed
    - Water quality effects from sediment runoff, stormwater and wastewater discharges
    - Wetland hydrology
- Potential indirect effects
    - Lighting effects on bats (long term)
    - Degradation of wetlands and streams should sediment control devices fail

Overall, the expected level of effects on indigenous vegetation, or habitats of native wildlife will be very small, as almost all areas of development shown in the illustrative masterplan are located within existing pasture, existing farm road and track infrastructure and weedy areas.

Potential indirect effects will be limited to the risks of sediment mobilisation/ discharge with earthworks, and spillover lighting effects on wildlife – and are manageable through the application of standard methods and approaches to erosion and sediment controls, engineering design, and low-intensity lighting designs.

6. Management of adverse effects

For this Project there are not anticipated to be any adverse effects - after appropriate site design, layout, consent conditions, engineering controls and standards are applied – that represent critical or high levels of effects on ecology values such that ecological management of effects may be contentious, novel, or uncertain.

All effects management that may be required for more than minor adverse effects on ecology values will involve standard responses that are well suited to this type of fertile, accessible land. These include native tree planting, stock exclusion, pest animal control and weed control, and native fish and native lizard salvage and relocation. The scale of opportunity in the precinct locations is extensive and is far greater than will be needed for the management of a level of effect under any reasonable interpretation of scale, magnitude or importance. Earthworks catchments can also be managed as far as practical to avoid effects on hydrology of natural inland wetlands.

The applicant has already indicated that it intends undertaking extensive restoration works to wetlands, streams and forest areas, including retiring pasture, fencing streams and wetlands, and connecting ecological sequences across the landscape. Virtually all of this will constitute additional positive benefit from this project, which will be well beyond the minimum needed to achieve no-net-loss or a net-gain ecological outcome.

Effects of discharge will be carefully managed to ensure quality outputs align with the respective receiving environments. Specifically, the new technologies available for wastewater treatment plants enable the quality of treated wastewater to be tailored to the specific receiving freshwater environment to avoid adverse effects on water quality and aquatic ecology. Discharges of stormwater and sediment control can be designed to ensure that specific devices are in place to treat the quality to meet current best practise and the relevant Waikato Regional Technical Specifications.

Overall potential significant effects will be managed through a series of measures, including through detailed design of the project, drafting and implementing management plans, and if required appropriate offsetting and/or compensation.

Table 1. Known or expected values within the Project area, anticipated level of adverse effect through the illustrative masterplan, and approaches to the minimisation and management of adverse effects on ecology values.

Expected ecology value	Potential effect	Anticipated level of effect	Effects management approaches - priorities
Indigenous vegetation – shrubland	Clearance – loss of extent and values	Low	Mitigate and/or offset through extensive plantings and forest protection
Indigenous vegetation – mature forest	Clearance – loss of extent and values Edge effects on newly cut margins	Nil/ Very low	Avoid through iterative engineering design. Enhance existing mature forest through pest control
Wetland	Infilling & drainage Dewatering of adjoining due to earthwork cuts	Low	Avoid through iterative engineering design where possible. Wetland creation and enhancement through stock removal/ planting
Stream	Infilling, diversion, culverting Potential dewatering due to change in catchment area	Low	Diversion & naturalisation Use bridges not culverts where possible Offset through stream recreation and enhancement elsewhere on the site
Waikato River	Potential low quality of sewerage discharge Effects on water quality and fish populations River margin erosion/ scour at outlet	Low/nil	Treat wastewater on site. Discharge ot land/ extensive wetland polishing areas Natural discharge to River of high quality The project will remove stock which are currently polluting land and waterways into the River
Lizards/ lizard habitat	Habitat removal Lizard injury/ death Human activity brings in more pest predators	Low	Salvage/ relocation Plant to create habitat Pest control to enhance existing populations
Bats	Habitat removal Bat injury/ death Lighting effects on behaviour Human activity brings in more pest predators	Very Low/ nil	DOC protocols for felling trees to avoid harm Artificial bat boxes Pest control to enhance existing populations Habitat recreation through planted stream networks Lighting standard where necessary
Native fish	Habitat removal Native fish injury/ death	Low	Salvage/ relocation
Wetland birds	Habitat removal Wetland bird injury/ death Human activity brings in more pest predators	Low/ nil	Plant to create habitat Pest control to enhance existing populations
Forest birds	Habitat removal Forest bird injury/ death Human activity brings in more pest predators	Low	Plant to create habitat Pest control to enhance existing populations

7. Overall potential for ecological benefits

The scale of ecological enhancement works shown in the illustrative masterplan is substantial, and reflects need for ecological enhancement work through the margins of Waikato River and inland valleys and ridge forest areas.

Apart from the direct benefits of planting, and undertaking animal and weed pest control, the indirect benefits are in some cases equally important. Retirement of current grazing land in the valley floodplains and along the margins of the Waikato River will be hugely beneficial for removing stock effluent discharge straight to land, watercourses and the Waikato River. The result will be a measurable improvement in the quality of water naturally discharging from the site, and therefore a measurable improvement in water quality entering the Waikato River (albeit small scale compared to the overall flow within the whole of the Waikato River).

The proposed wastewater treatment facility and wastewater disposal approach will ensure that improvements to water quality from change in stock use are protected, and that on-land contact devices provide additional benefits for local wildlife. It is important ot note that the improvements to water quality from change in stock use likely to exceed any adverse effect from discharges from the wastewater treatment plant.

Most of the ecological work on the site will constitute voluntary benefits. Its importance should not be understated. The valley systems included within the Project area support some of the best examples of native forest and indigenous environments in the Ecological District.

The restoration works in these sites that come about as a direct result of the proposed Project will restore, connect, enhance, and protect a range of regionally important native forests areas and the biodiversity within them. The outcomes will be regionally important, and may have nationally important benefits for some sensitive native species (especially bats and wetland birds such as Australasian bittern).

Overall, the illustrative Masterplan shows a concept that will have a very limited scale footprint within indigenous ecosystems with associated low levels of potential impacts on ecological values. The opportunities for ecological enhancement and restoration by contrast are great and provide multiple avenues for effectively managing the small scale of ecological impacts that may occur.

The benefits that will arise from this Project on local ecology are extensive, and go beyond this site to include the Waikato River and surrounding landscape, and will be of clear regional significance.

8. Further assessment required to inform substantive application

As part of any substantive application, we will provide more detailed assessment of the ecological values across the site, and a thorough application of the component stages of the mitigation hierarchy and the additional benefits.

Draft management Plans will be provided that detail the proposed mitigation measures and programmes for enhancement, restoration, maintenance and monitoring to ensure that biodiversity benefits are delivered on the ground.

9. Wildlife Act Authorities (WAA)

It is anticipated that various indigenous species, in particular native lizards, may be present at the site and may be affected by the proposed development. Wildlife, including native reptiles are legally protected under the Wildlife Act 1953 (and subsequent amendments) and may activities at the site will likely require approvals under the WAA.

Impacts on birds and bats will be managed during construction, to avoid active nests or roosting, which should be sufficient for all species.

Graham Ussher

Principal Ecologist

20-Dec-25

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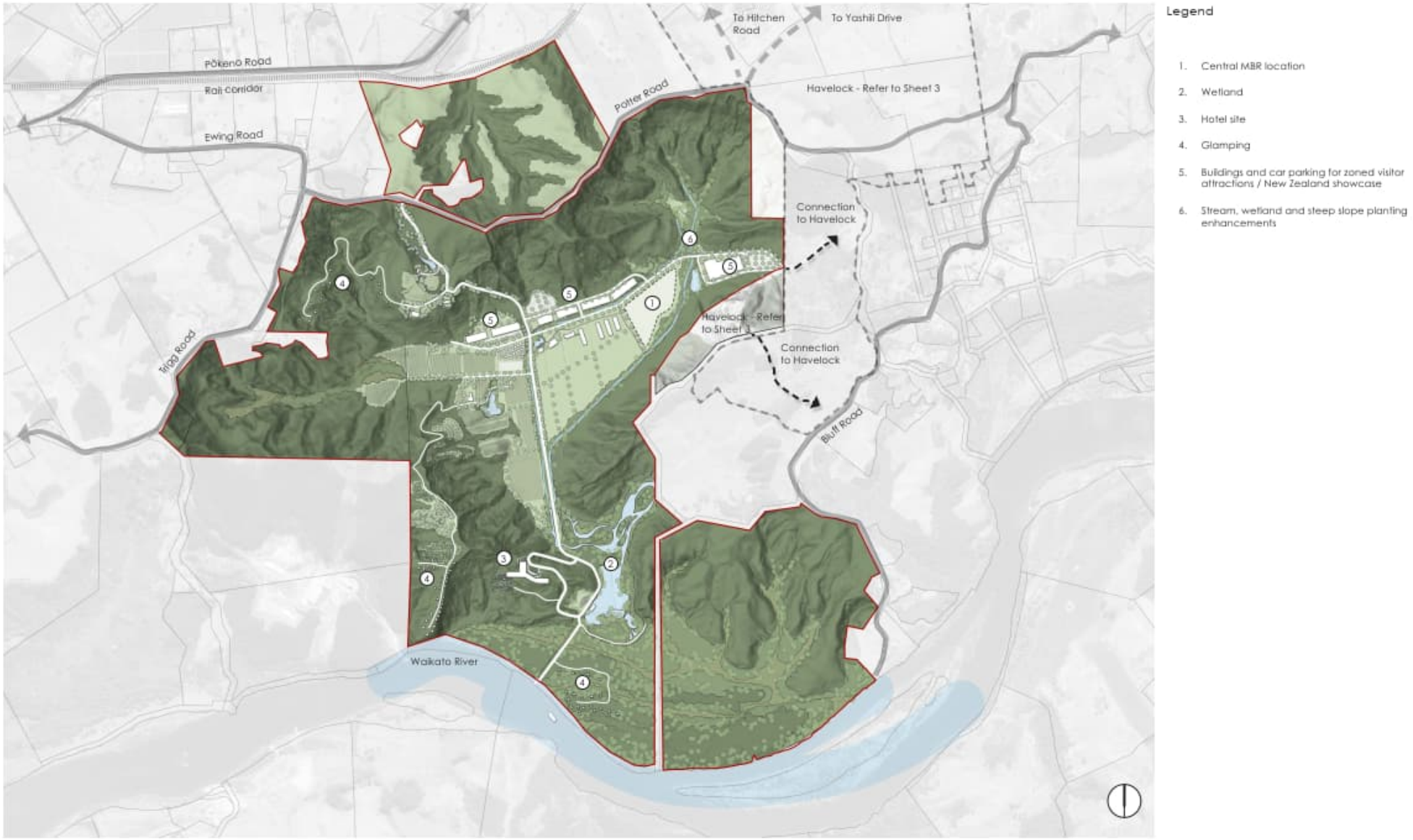
Appendix A - Detailed illustrative Masterplan layouts for the three parts/ locations of the Project.

Yes Valley



Havelock

Legend

1. Vacant lot residential subdivision in stages for approximately 750 dwellings
2. Vacant lot slope residential subdivision
3. Vacant lot rural residential "cluster-style" subdivision
4. Required infrastructure within the Havelock site including, new roads, water supply network, stormwater management devices and network
5. Reserve areas and recreational trails
6. Local parks and play opportunities
7. Enhancement of ecological areas, streams, wetlands and steep slopes
8. Ridgeline plantings
9. General industrial zone

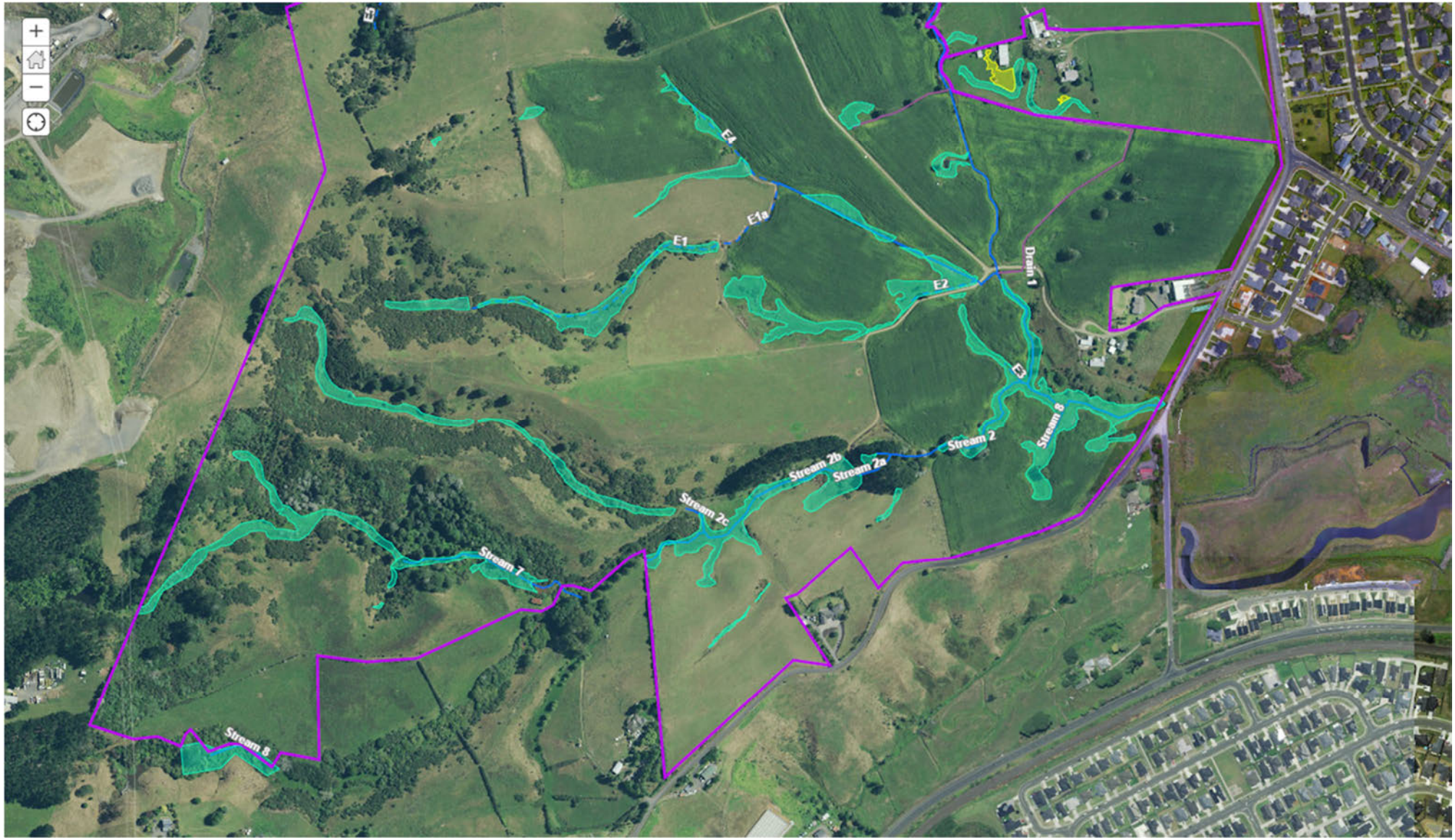
Pokeno West


Legend
1. Vacant lot residential subdivision in stages for approximately 1,500 dwellings
2. Future neighbourhood centre
3. Future MoE School site
4. Required infrastructure within the Pōkeno West site including, new roads, water supply network, stormwater management devices and network
5. Reserve areas and recreational trails
6. Local parks and play opportunities
7. Enhancement of streams, wetlands and steep slopes
Consented Stage 1
Helenslee Road
Helenslee Road
Munro Road
Munro Road
Hitchen Road

Appendix B – ecology features mapped during preliminary site investigations undertaken over parts of the Project area from 2020- 2025, with a focus on wetlands and watercourses.

Pokeno West – northern portion (purple line = site boundary; turquoise polygons = wetlands; blue linework = streams).

Pokeno West – southern portion (purple line = site boundary; turquoise polygons = wetlands; blue linework = streams).



Pokeno South/ Havelock