

TO:	Ridgeburn Limited	Date:	14 May 2025
COPY TO:	Nick Roberts (Barker Associates)	Document No:	10339-001-4
FROM:	Annabelle Coates		

## DOONHOLME ESTATE: FAST-TRACK APPLICATION – PRELIMINARY ECOLOGICAL ASSESSMENT

### Introduction

Gibbons Co. is intending to lodge an application for a proposed residential development at 122 Morven Ferry Road, Queenstown ('the site'; Attachment A) to be listed on the schedule of the Fast-track Approvals Bill. If included on the schedule, it would seek approvals for its proposal using the fast-track process. This memorandum provides a high-level ecological assessment of the proposal, including an evaluation of regional significance of the project's potential contributions to ecology.

The main effects of the project are anticipated to be minor disturbance to birds and lizards, potential impacts on small areas of lizard habitat and minor, temporary impacts on habitat as a result of construction activities. All detrimental effects can be adequately managed through appropriate mitigation such as fauna management plans. The proposed development has been designed to avoid natural waterways and wetlands, in line with policies and objective of the National Policy Statement for Freshwater Management 2020 (NPS-FM), and with the National Environmental Standards – Freshwater (NES-F). It will include significant revegetation and ecological restoration including along waterways and wetlands, and on Morven Hill in line with the National Policy Statement for Indigenous Biodiversity 2023 (NPS-IB). There will be an increase in native vegetation, and habitat for native fauna as a result of the proposed development.

### Methodology

A conservative, high-level desktop assessment and site walkover (undertaken by an experienced ecologist on 31 March 2025) informed an assessment of the site's existing ecological values. Terrestrial features were assessed based on their botanic and habitat values, the latter of which was qualitatively assessed, considering indigenous lizards, birds and bats. Freshwater features were classified based on the Otago Regional Plan: Water for Otago definitions. Indicative wetland areas were identified based on Ministry for the Environment (MfE) wetland delineation protocols (MfE 2022; MfE 2021; Clarkson 2013; Fraser et al. 2018) and classified as per the NPS-FM definition of a 'natural inland wetland'.

The key ecological features identified by the assessment are presented in Attachment A. It is noted that these features are indicative and that at future stages of the application, these features will be further defined.

### Background

The site is located on the boundary of the Shotover and Remarkables Ecological Districts (ED) of the Lakes Region. The Shotover ED is characterised steep topography with deeply incised canyons. Winters are cold, and summers are hot, with a generally dry climate. Vegetation includes remnant beech forest, extensive bracken fernland, some scrubland and tussockland, including above the treeline. Exotic forests have established over time. The Remarkables ED is characterised by rugged, steep, glaciated mountains up to approximately 2300 m above sea level. Winters are cold, and summers are hot, with a

generally dry climate. Forest in the district is limited, and mainly consists of small patches in valleys. Elsewhere, scrub is present with abundant tussock.

Historical aerial images show the site was well established as farmland by the earliest available aerial image, dated 1958 (Attachment B). However, the wider area has been farmed since the 1860s and therefore it is likely it has been devoid of any significant native vegetation for more than 150 years.

Currently, the site is used for cattle and sheep farming, with one dwelling and a number of farm associated buildings present. It is approximately 212 ha in size and consists of three main terrain types – flats and rolling hills in the east; river terraces in the south; and moderately steep hill country in the west. However, the development will occur on the flats and rolling hills in an area approximately 99 ha in size (Attachment A).

### Terrestrial ecology

The block characterised by flats and rolling hills was dominated by agricultural landuses. Vegetation was generally limited to various pasture species, crops (e.g. lucerne (*Medicago sativa*)), and exotic trees (including oak (*Quercus* sp.), gum (*Eucalyptus* sp.), walnut (*Juglans* sp.), chestnut (*Castanea* sp.)). Trees were concentrated around the house and outbuildings, along the main laneway of the site, and various exotic shelterbelts. The river terraces in the south of the site were largely vegetated. The steeper parts of this block contained exotic trees, some of which had been recently cleared, and exotic scrub with occasional native species (matagouri (*Discaria toumatou*) and porcupine scrub (*Melicactus alpinus*)). The flatter parts of the block were dominated by establishing weeds such as hemlock (*Conium maculatum*), thistles (*Cirsium arvense*), and gorse (*Ulex europaeus*), however some areas had been managed with evidence of spraying. The hill block was characterised by pasture with exotic and native scrub. Matagouri and porcupine scrub accounted for a good proportion of the vegetation however exotic species including sweet briar (*Rosa rubiginosa*), hawthorn (*Crataegus monogyna*), broom (*Cytisus scoparius*), gorse and elder (*Sambucus nigra*) were dominant.

Fauna habitat was present within the site. Bird habitat was generally limited to the exotic trees and scrub. Only common native and exotic bird species are expected to be present within the site. Lizard habitat was present in areas dotted around the site and included areas of rank ungrazed pasture, piles of woody debris, piles of loose rock and exposed bedrock. The bulk the site did not present good quality habitat. Over the last several decades, the site has been highly managed/grazed pasture and as a result lizard habitat has not traditionally been abundant. While habitat may currently be present, this does not mean lizards are present in a high diversity or abundance due to the managed nature of the site and lack of connected present habitat. Records from the wider area show various species of lizard are known to be present, including the At Risk – Declining korero gecko (*Woodworthia* “Otago/Southland large”). Habitat for this species is potentially present within the site, mainly in the hill block. Bats are not known from the Queenstown area. A population of long tailed bats (*Chalinolobus tuberculatus*) is present in the Glenorchy area, approximately 40 km to the north west of the site. The site is potentially within flying distance of this population, however the lack of records, despite survey effort, from the area around urban and semiurban Queenstown, suggests they are not present.

Deer were present throughout the site. While the main area (flats and rolling hills) was deer fenced, some areas had sagged and/or bent and it is likely deer would be able to move from paddock to paddock. A number of deer were observed in the unfenced river terrace area and it assumed they were feral.

No Significant Natural Areas (SNA) are present on the site. The closest SNA is located over 1 km to the south of the site, on the other side of the Kawarau River. No Significant Wetlands, as per the Otago Water Plan, are present within the site. The closest Significant Wetland is located approximately 1400 m to the west, on the southern shores of Lake Hayes.

The botanical value of the site is considered to be low. The ecological value of the site for birds and bats is considered to be low and negligible, respectively. The ecological value of the site for lizards is considered to be conservatively moderate-high due to the potential presence of At Risk – Declining lizards.

### Freshwater ecology

Various freshwater features were present within and adjacent to the site. The Kawarau River forms the southern boundary of the site. No other permanent streams were present within the site.

The Morven Ferry water race flows through the site. It enters the site on the northern boundary and then meanders largely southwards through the site before flowing out on the sites eastern boundary. The race is artificial and has clearly been constructed. It does not follow natural contours and in one location it flows, via a bridge, over a natural waterway/wetland. There are no records in the New Zealand Freshwater Fish Database for the race. Observations on site did not yield any fish (bullies are usually observable). It is possible fish may be present within the race, depending on connections to other surface water (i.e., if fish barriers are present).

An ephemeral channel was present in the east of the site. This channel discharged into a constructed pond. The pond was dry at the time of the site visit and no outflows were present. The ephemeral channel was entirely vegetated with long pasture grass and no water or damp soil was present. A constructed drain was also present in this area. The drain was artificially straight, and made a right angle turn to flow directly along a fenceline. No water was present and there was no evidence water had been present recently. The majority of the drain was entirely vegetated with pasture species, however vegetation was more scarce in the lower reaches. The drain discharged to the adjacent property, with no clear freshwater receiving environment.

A small intermittent stream was present near the southwest corner. There was no obvious receiving environment for this stream and it appeared to flow subsurface at its terminus. The stream had been highly trampled by wallowing deer and large pools of mud were present. Hydrologic heterogeneity was limited and it is expected no fish will be present due to the lack of connection to other surface water. No riparian vegetation was present.

Three separate natural inland wetlands were identified within the site, all within the flats and rolling hills block. The largest wetland was confined to a natural gully. Vegetation was dominated by exotic pasture species such as creeping bent (*Agrostis stolonifera*; FACW) and Yorkshire fog (*Holcus lanatus*; FAC). Other species present in smaller amounts included *Glyceria* (OBL), *Carex* (FACW), watercress (*Nasturtium officinale*; OBL) and *Juncus articulatus* (FACW). Shallow water and damp soil was intermittently present. A second moderately sized wetland was located just south of the large wetland. This wetland was characterised by a sparsely vegetated concave surface vegetated mostly with creeping bent and *J. articulatus*. This wetland was considered to be ephemeral. A third small wetland was present in the northern part of the site. It was within a small fenced area adjacent to the deer sheds. It was characterised by various *Carex secta* (OBL). These wetlands all passed the rapid test due to the dominance of OBL and FACW species. The boundaries were delineated based on clear changes in

vegetation, i.e. where it moved from being OBL and FACW dominated to FACU and UPL dominated, as well as changes in topography and hydrological conditions.

A series of constructed ponds were present throughout the site. Various ponds were associated with the gully containing the large wetland, including in the very upper reaches where wetland conditions were not present. All ponds were constructed with no evidence of them being present in historical aerial images. All ponds had excavated spoil on the downgradient side creating a bund. It is expected these ponds have been constructed for stockwater. Other ponds present throughout the site were clearly constructed and not present in historical aeriels. The ponds were largely dry and it is expected they only contain water during wetter winter months.

## Assessment of Effects

### Proposal

Gibbons Co. intends to develop the site as a residential subdivision. The development will include 1281 residential lots of various sizes as well as a dedicated commercial zone, roads, cycle paths and landscaping and greenspace. A masterplan of the development is included in Attachment C.

The development will avoid the reclamation of natural wetlands and waterways. All natural freshwater features are planned to be contained within open/green space and are expected to be enhanced through the development of the site. Constructed ponds may be reclaimed or reworked as part of the greenspace development.

### Effects on terrestrial values

Terrestrial ecological values on site are limited to areas of lizard habitat around the site, and areas of exotic vegetation through the middle of the site and shelterbelts. The majority of the mature exotic vegetation can be retained as it will be located in planned open/green space. Shelterbelts will be removed. The removal of this vegetation for future developments is considered appropriate for the project and is not considered to result in a significant loss of ecological function or terrestrial habitat. The mixed exotic-native scrub in the hill block will be unimpacted by the proposal.

Lizards and lizard habitat may be impacted through development, however extensive planting will improve lizard habitat values through provision of refuges, increased food resources and a significant increase in arboreal habitat for gecko species. The greatest improvement of lizard habitat values will come as a result of the extensive pest control proposed on Morven Hill and the river escarpment. Control of predators such as rats and mustelids will greatly decrease predation pressure on native lizards and an increase in the lizard population, if present, within the site. Direct impacts on lizards can be adequately mitigated through management plans including measures such as rescue and relocation from impacted areas. Any relocation of lizards as a result of the project will require approval under the Wildlife Act (1953).

Low quality bird habitat will be impacted temporarily, during construction. However once established, the extensive planting will provide higher quality habitat than what is currently present.

The proposal offers the opportunity for extensive planting within the planned open/green space, including within the margins of freshwater environments such as the wetlands. Extensive ecological restoration planting is proposed on both Morven Hill and the escarpment between the developed area and the Kawerau River (Attachment D). Approximately 33 ha of revegetation will occur on Morven Hill. The proposed planting palette (as provided by Rough Milne Mitchell Landscape Architects) includes a



diverse range of native species suitable for the dry, exposed, subalpine environment of Morven Hill. The revegetation will complement the existing scrub. Weed control will be undertaken on the hill, including within the area to be planted, in order to remove exotic weeds such as hawthorn, gorse and broom. Ongoing weed and pest control will occur across the entire hill to prevent weeds becoming established within the area where active planting is not proposed.

Approximately 26 ha of planting is proposed along the escarpment between the developed area and the Kawerau River. The final area will be refined as this wider area will also accommodate a wastewater dispersal field, however it is understood the dispersal field will be subject to appropriate native planting as well (i.e. tussocks). Planting the escarpment has the potential for several significant benefits including stabilisation of the slope and reduction of erosion risk, buffering the Kawerau River from residential development, and the beginnings of a native vegetation corridor along the river that can be readily expanded up and downstream from the site, if/when development of neighbouring sites occurs. This area is currently heavily dominated by exotic vegetation, including several weed species. Replacement with native species will result in significant increases in ecological value.

Both the hill and escarpment planting, once established, will act as a significant seed source in an area that is largely devoid of native scrub or forest. As a result, natural regeneration of the surrounding land, both within the site. Natural regeneration could occur in the wider area through wind and avian seed dispersal where land is not being actively managed. Ongoing pest control, particularly of deer and rabbits will be important to ensure young establishing vegetation is not subject to browse damage.

Native vegetation is significantly limited in the Queenstown-Arrowtown area. The establishment of a natural seed source of close to 60 hectares in size will have significant local and regional benefits in two ecological districts. Planting Morven Hill and the escarpment will include approximately 150,000 plants, with numbers to be refined depending on the quantity of native vegetation on the hill (planting densities will be lower where there is existing native vegetation and higher where exotic vegetation is replaced). Botanical values, and habitat for native fauna, will be significantly increased.

Any potential direct effects on indigenous fauna can be appropriately managed through fauna management plans.

### **Effects on freshwater values**

The site's existing freshwater values are associated mostly with the natural wetlands, as well as an artificial water race.

The proposal has initially been designed to avoid reclamation of any wetlands, intermittent streams or the water race. The single identified ephemeral channel will be incorporated into green/open space. The constructed drain will be reclaimed. Constructed ponds will either be incorporated into the planned open/green space, or be reclaimed.

Proposed planting, including around the wetlands, as well as construction of stormwater treatment infrastructure has the potential to significantly increase ecological values. The proposal is expected to result in an improvement in water quality through increasing the filtration function of the riparian vegetation, providing higher levels of shade, increased bank stability, and organic matter inputs to aquatic habitat. The riparian planting will also increase terrestrial fauna habitat and provide buffering and connectivity to the wider area. The existing stream and wetland habitats are generally in poor to average condition. Restoration activities within the site will represent a measurable increase in freshwater value.

Earthworks, diversions and discharges within 100 m of the wetlands can be managed to ensure no hydrological function and water level range of the wetlands is not significantly impacted.

It is unlikely fish will be present in the wetlands due to the lack of connection to other surface water. The water race will be retained. Any works associated with upgrades or works (e.g. culverts) can be adequately managed through best practice design and methodologies.

Indirect effects, such as sedimentation or pollution of freshwater environments from works, are proposed to be adequately mitigated through appropriate controls and following best practise guidelines, ensuring adverse effects on ecological values are no more than minor.

If adverse effects on streams or wetlands are unavoidable, the effects management hierarchy will be applied to ensure the proposed activities meet the relevant standards within the National Environmental Standards for Freshwater 2020 (NES-F).

### Relevant legislation

The proposal is considered to align with the policies and objective of key pieces of environmental legislation, such as the NPS-FM and the National Policy Statement for Indigenous Biodiversity (NPS-IB).

The main objective of the NPS-FM is to ensure the health and well-being of water bodies and freshwater ecosystems are prioritised. To prioritise the health and well-being of freshwater ecosystems on site, Gibbons Co. has engaged Viridis to conservatively identify and qualitatively assess these features, so that site development can accommodate these features. Potential adverse effects for future development such as sedimentation, loss of wetlands, loss of wetland vegetation and discharges of water to water will be able to be appropriately avoided, minimised, remedied, offset or compensated for under the effects management hierarchy. Furthermore, the proposal will result in the establishment of riparian and wetland planting, which will improve the overall quality of freshwater environments on site.

The main objective of the NPS-IB is to ensure, at a minimum, that no overall loss in New Zealand's biodiversity occurs by protecting and restoring indigenous biodiversity values. The proposal is considered to be consistent with the objectives of the NPS-IB, as the biodiversity values of the site have been identified, qualitatively assessed, and no loss in terrestrial biodiversity is anticipated as a result of development of a subdivision. Rather, the proposal provides the opportunity to improve the site's terrestrial biodiversity through planting and enhancement activities, which will improve the overall diversity, native species habitat and quality of the site's terrestrial features.

### Conclusion

The potential impacts of the proposed residential subdivision at 122 Morven Ferry Road, Queenstown, have been assessed in relation to the ecological values currently associated with the site. These include areas of low value exotic vegetation, mixed exotic and native scrub, three natural inland wetlands. Ecological values of the features were generally considered to be low, with the exception of the site for lizard habitat. There is the potential for At Risk – Declining lizards to be present, therefore the value of the site for lizards is considered to be conservatively moderate-high. The proposal has been initially designed to avoid reclamation of any permanent or intermittent streams, or any wetlands. Exotic vegetation will be retained as far as practicable. The mixed exotic-native scrub on the hill block will remain unimpacted. Significant planting is proposed within the open/green space. Given the proposed ecological enhancement activities, it is considered that the development's contribution to environmental value would be regionally significant.

## Attachments

Attachment A – Map of key ecological features

Attachment B – Historic aerial

Attachment C – Site scheme plan

Attachment D – Recommended planting areas

## References

Clarkson B. 2013. A vegetation tool for wetland delineation in New Zealand. Prepared for Meridian Energy Limited. Hamilton: Manaaki Whenua Landcare Research.

Cosgrove G.; Dodd M.; James T., 2022. National list of exotic pasture species. Prepared for the Ministry for the Environment by AgResearch Ltd. Wellington: Ministry for the Environment.

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

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MfE 2021. Wetland delineation hydrology tool for Aotearoa New Zealand. Ministry for the Environment

MfE 2022. Wetland Delineation Protocols. Ministry for the Environment.

Singers, N.; Osborne, B.; Lovegrove, T.; Jamieson, A.; Boow, J.; Sawyer, J.; Hill, K.; Andrews, J.; Hill, S.; Webb, C. 2017. Indigenous terrestrial and wetland ecosystems of Auckland. Auckland Council.



# Attachment A - Doonholme Estate - Ecological Features

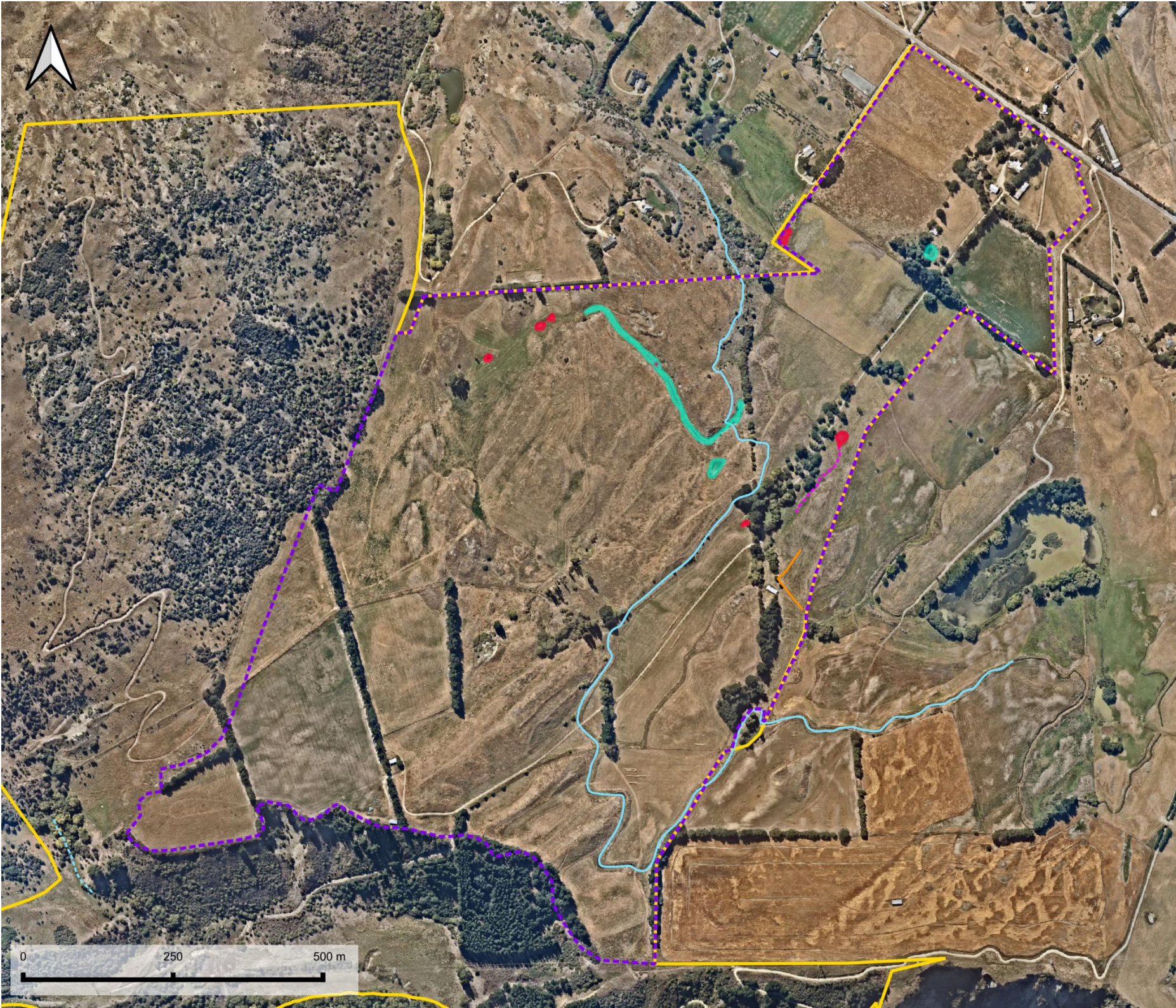
-  Site boundary
-  Development area
- FW features**
  -  Constructed pond
  -  Wetland
- Waterways**
  -  Intermittent
  -  Ephemeral
  -  Water race
  -  Drain

**SOURCES**  
Nearmap.com 2025

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

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Attachment B -  
Doonholme Estate - 1958  
aerial image

-  Site boundary
-  Development area

SOURCES  
Retrolens.co.nz

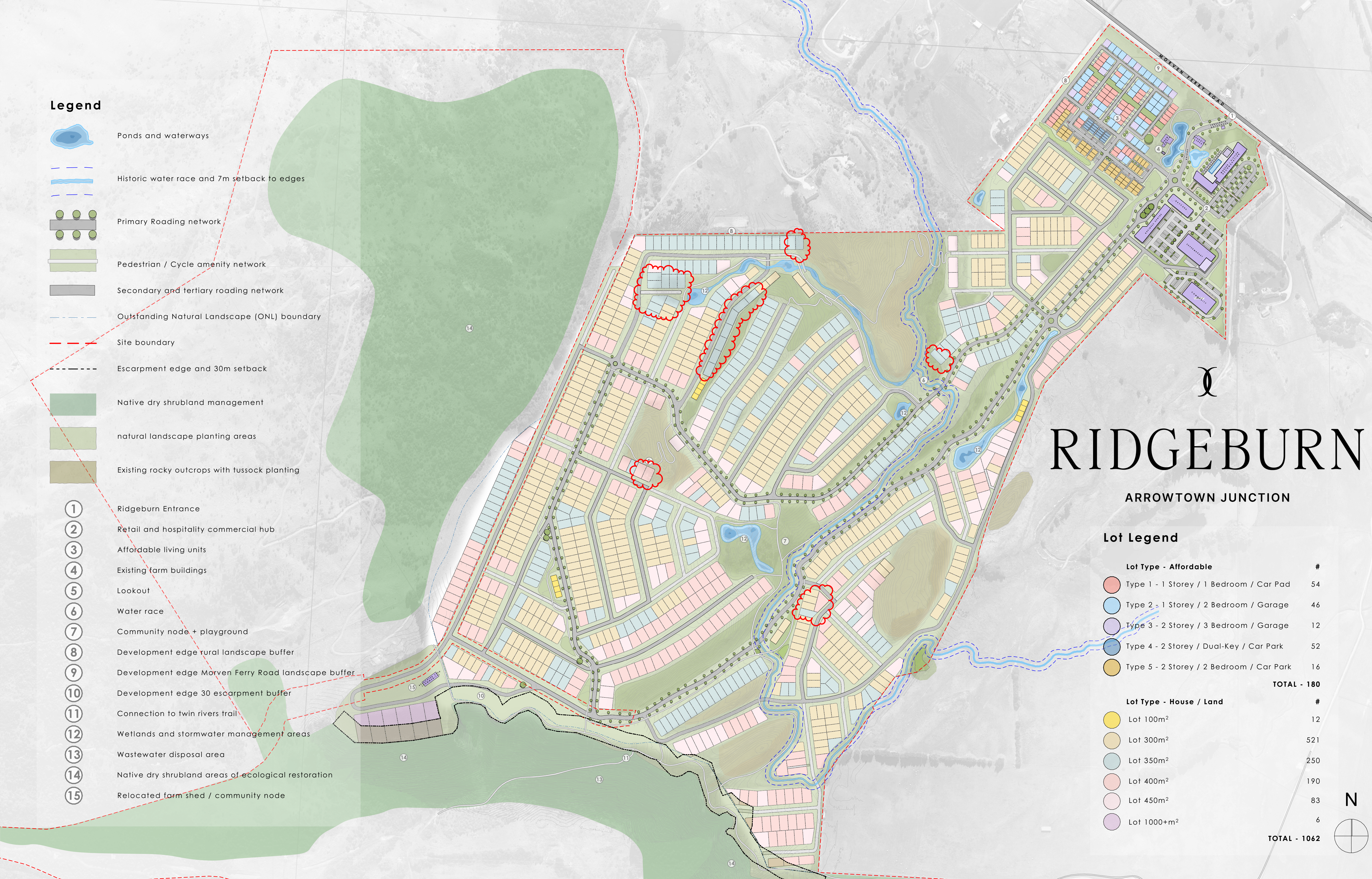
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0 250 500 m





Ridgeburn - Arrowtown Junction

at 122 Morven Ferry Road for Ridgeburn Ltd



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AC28\_Site Masterplan\_Updates.pln

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Site Master Plan

Drawing number / Revision:

PD101/

PRINTED: 8/05/2025

Scale @ A1: Not to Scale NOT FOR CONSTRUCTION

Master Plan

Drawing:





Attachment D - Doonholme  
Estate - Recommended planting  
areas (beyond developed area)

Waterways

- Water race
- Intermittent
- Ephemeral
- Drain

Recommended planting

- Planting and management
- Weed and pest control

SOURCES

Nearmap.com 2025

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MAP NO. 10339-Map4-1

DATE: 28/04/2025

