

362 Jones Road

Ecological Report Prepared for Scarbro Civil Limited

7 October 2025





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CONTENTS

1.0 2.0	Introduction Methods					
	2.1	Stream Classification	1			
	2.2	Stream Ecological Valuation	1			
	2.3	Wetland Classification and Delineation	2			
	2.4	Wetland Values	3			
	2.5	Terrestrial Vegetation	4			
	2.6	Terrestrial Fauna	4			
3.0	Eco	logical Values	4			
	3.1	Stream Classification	4			
	3.2	Stream Ecological Valuation	4			
	3.3	Wetland Classification and Delineation	5			
	3.4	Terrestrial Vegetation	10			
	3.5	Fauna	13			
4.0	Pro	posed Activities	15			
	4.1	Stream Crossing	15			
	4.2	Haul Road	16			
	4.3	Fill Areas	16			
	4.4	Riparian Management	16			
5.0	Ass	essment of Effects	17			
	5.1	Streamworks	17			
	5.2	Vegetation Removal	18			
	5.3	Sediment Discharge	18			
	5.4	Hydrological Effects	19			
	5.5	Biosecurity Risks and Management	20			
	5.6	Landscape Ecology Effects	20			
	5.7	National Environmental Standards for Freshwater and Effects Management Hierarchy	21			
6.0 7.0		nmary and Conclusion erences	23 25			
Appe Appe Appe	endix 2 endix 3	es 1: River and Stream Definitions, Auckland Unitary Plan 2: SEV data 3: Vegetation Plot Data 4. Project Plans				

1.0 Introduction

A managed fill operation is proposed for a site at 362 Jones Road, Hunua. The project will include two managed fill areas of 9 ha and 2 ha, respectively, and construction of a haul road from Hunua Road. Fill will be placed over a duration of 5 to 10 years, depending on demand (FTL, 2024). The site has a total area of c. 25 ha and is currently under drystock farming.

The project aims to avoid reclamation of streams and wetlands and thereby minimise ecological impacts.

This report presents the results of investigations to identify and evaluate ecological features within the site and assess the ecological effects of the proposal. The report includes:

- Freshwater features, extent and value (river/streams/wetlands).
- Ecological effects (land and water).

This report has been updated to reflect the final application and includes a section addressing s92 requests for further information (RFI, BUN60440759).

2.0 Methods

2.1 Stream Classification

Watercourses were classified using the definitions and criteria in the Auckland Unitary Plan (AUP) (Appendix 1). There were no artificial watercourses.

Streams and overland flowpaths were identified on Auckland Council Geomaps. Site investigations were undertaken on 14 March 2024.

Metservice records for Manukau show 1.8 mm of rainfall during the week preceding the field survey, and a total of 34.8 mm over the previous two weeks. January and February were both wet, with February having 233 mm of rainfall vs a historical average of 57.1 mm.

2.2 Stream Ecological Valuation

To evaluate stream functions a Stream Ecological Valuation (SEV) assessment was undertaken at Site 1. The stream here comprised a section of open channel within a wetland.

The SEV records instream and riparian features and uses a calculator to assign functional scores in four categories (Hydrological, Biogeochemical, Habitat Provision and Biodiversity) and an overall score for functional integrity compared to a forest stream reference site (Storey *et al*, 2009).

2.3 Wetland Classification and Delineation

The Resource Management Act defines a wetland as:

"Permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions."

The NPS-FM defines a Natural Inland Wetland as a wetland (as defined in the Act) that is not:

- (a) in the coastal marine area; or
- (b) a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural inland wetland; or
- (c) a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or
- (d) a geothermal wetland; or
- (e) a wetland that:
 - (i) is within an area of pasture used for grazing; and
 - (ii) has vegetation cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species using the Pasture Exclusion Assessment Methodology (see clause 1.8)); unless
 - (iii) the wetland is a location of a habitat of a threatened species identified under clause 3.8 of this National Policy Statement, in which case the exclusion in (e) does not apply.

Exclusions (a) to (d) do not apply to this site. The wetlands are within pasture used for grazing under e (i). Our survey included assessment of the percent cover of pasture species, and the presence of threatened species, specifically addressing e (ii) and (iii).

The Wetland Delineation Protocols (MfE, 2022) and associated guidance documents provide procedures for assessing whether a potential wetland feature meets the definition of Wetland under the RMA or Natural Inland Wetland. The initial steps in the delineation rely on vegetation communities as indicators of wetland conditions, while additional observations of hydrology and soil characteristics are used where wetland species are not conspicuously dominant in community assemblages (Table 1).

Potential wetland areas were identified using the Geomaps hydrology layer, contours and aerial photography. Where distinct vegetation patterns were clearly visible in aerial imagery, vegetation plots were sampled within representative locations (inside and outside potential wetland areas) to record vegetation composition. Plots were also sampled at the boundaries between vegetation communities to identify the transition point between the wetland and dry land. Hydrological indicators such as saturated soil (boggy ground) and seepages at the toe of the valley hillslope that indicate intersection with the water table were also mapped and used to delineate wetland features.

Table 1. Wetland delineation criteria. A Pass result indicates the feature is a wetland under the RMA (i.e. has vegetation communities adapted to wet conditions). Wetland species are classified as OBL (Obligate wetland), FAC (Facultative), FACW (Facultative Wetland). All Wetlands are Natural Inland Wetlands unless excluded under criteria in the NPS-FM. The pasture exclusion test is applicable to this site as it is used for grazing.

Wetland as defined in	Wetland as defined in the RMA					
Rapid test	Wetland if all dominant species across all strata rated OBL and/or FACW (pass score = 1).					
Dominance test	Wetland if more than 50% of dominant species across all strata are rated OBL, FACW, or FAC using the 50/20 rule. If species area all or mostly FAC hydrology indicators must also be present.					
Prevalence Index	Wetland if PI ≤ 3.0, but values around 3.0 should be used alongside other wetland indicators.					
Pasture exclusion test for Natural Inland Wetland						
Pasture cover	Not a Natural Inland Wetland if >50% pasture species.					

2.4 Wetland Values

The following functions were assessed on a scale of 0-5, where 0 indicates that functions are not present, 1 represents severely degraded function or negligible value and 5 represents high function or value that would be similar to a reference site in the ecological district (Table 2). These functions were selected following a review of attributes in the EIANZ guidelines (Roper-Lindsay *et al*, 2018). A guide for interpretation of scores is presented in Table 3.

Table 2. Assessment criteria for wetland ecological functions.

Ecological Integrity	1 = highly modified feature with limited internal structure (e.g. ecotones) and external influences dominant. 5=Ecosystem with internal structure and limited external influences.
Ecosystem rarity	1=features performing similar functions are common in the landscape; 5= features are rare in the landscape
Biodiversity	1= supports limited range of indigenous flora and fauna compared to reference site. 5=biodiversity similar to reference site.
Threatened species	1=not utilised by threatened species; 5=important habitat that contributed to sustaining populations of At-Risk or threatened species.
Water quality buffering	1=minimal positive influence on ground or surface water receiving environments; 5=has major positive influence on water quality. Factors include scale of feature relative to catchment, slope, nutrient load, interception of surface flows, livestock disturbance.
Hydrological integrity	1= water level range and hydrological function is highly modified from reference condition; 5= Water level range and hydrological function is similar to reference condition.

Table 3. Interpretation of wetland function scores.

Average score	Overall functional integrity
1	Very Low
>1 to 2	Low
>2 to 3	Moderate
>3 to 4	High
>4	Very High

2.5 Terrestrial Vegetation

The site contains limited vegetation other than pasture. All stands of trees and shrubs were identified, mapped and described.

2.6 Terrestrial Fauna

Vegetation and habitats within the site were evaluated with respect to their suitability as refugia and habitat for native terrestrial fauna, including incidental searches for fauna signs or sightings. Trees were inspected for possible bat roosts and bird nests, and we recorded all bird species seen and heard.

3.0 Ecological Values

3.1 Stream Classification

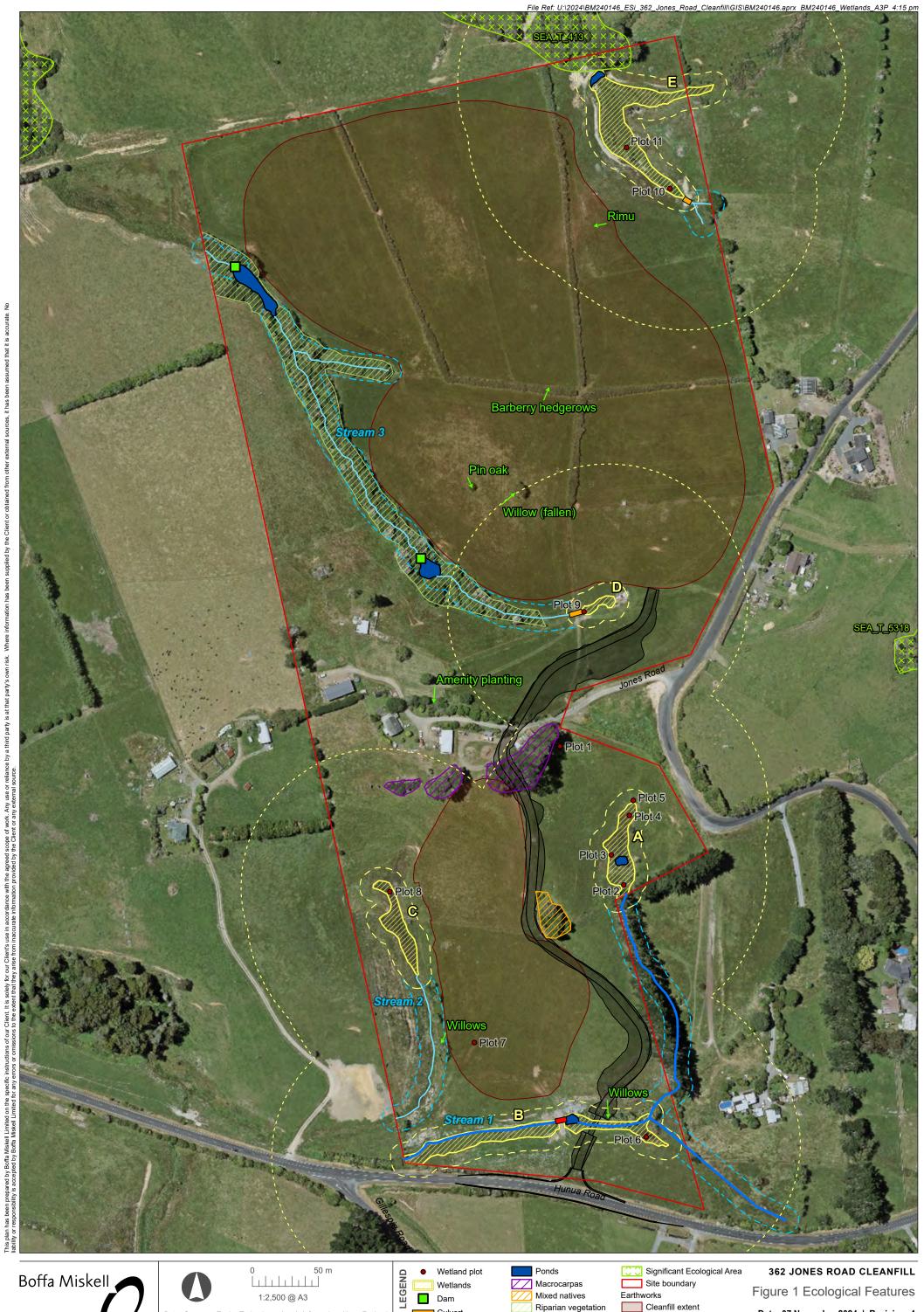
The classification of streams is presented in Figure 1.

Stream 1 was assessed as a Permanent Stream. The bed of Stream 1 was permanently below the water table, and although the watercourse had predominantly wetland functions (Wetland B, described below) there was some open channel, possibly excavated, with stream characteristics. This was located upstream of the culvert and was the location for the SEV assessment.

Streams 2 and 3 were assessed as Intermittent Streams. The bed of these streams was intermittently below the water table, with flows in different areas observed to be either very low or absent. Stream 2 was in a relatively steep and narrow gully with a defined channel. Stream 3 was less steep and was mainly dished with poorly defined channel margins. Two ponds were present in the stream, which controlled stream flows in both the ponded areas and downstream reaches.

3.2 Stream Ecological Valuation

An SEV assessment was undertaken in the Permanent Stream at Stream 1, in the area of the proposed bridge crossing (Figure 1). No sampling was undertaken within the Intermittent Streams 2 and 3.



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Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Fraser Thomas

Projection: NZGD 2000 New Zealand Transverse Mercator

Culvert Permanent Stream

Riparian vegetation 10m stream setback 10m wetland setback Intermittent Stream 100m wetland setback

Road

Culvert to be removed

Date: 07 November 2024 | Revision: 4 Plan prepared by Boffa Miskell Limited Project Manager: Eddie.Sides@boffamiskell.co.nz | Drawn: HCo | Checked: ESi

Streams 1 and 2 did not have fences designed to exclude livestock and riparian vegetation was limited (some willow trees are present on the north side of Stream 1). Stream 3 was entirely fenced and had riparian vegetation ranging in width from approximately 15 to 30 m (narrower at the upstream end).

The channel at the Stream 1 SEV site was found to have an average width of 1.29 m, depth of 0.22 m, slow velocity, soft substrate with thick sediment deposition, no effective fencing, and riparian vegetation limited to a narrow margin of mainly rushes (*Juncus* spp.) and willow trees on the northern side (Photo 2). The stream had low banks and a narrow effective floodplain. The extent of open channel is limited, with wetland characteristics predominant (Wetland B, described below).

The channel here is probably a residual feature in a small gully that has gradually infilled with sediment. It is also possible that it has been excavated or cleared to improve drainage. While

A total of 19 macroinvertebrate taxa were recorded, with only one EPT taxa (a single caddisfly *Triplectides*). The dominant groups were Diptera (62% of sample abundance) and Crustacea (31%). Most fauna were mud-dwelling diptera, ostracods and worms, with some species associated with the marginal plants such as the molluscs and two bug species that prefer open water (waterboatmen and backswimmers). The Macroinvertebrate Community Index score was 63, a low score indicating poor water quality and predominantly tolerant species.

Shortfin eels (*Anguilla australis*) were common. The conservation status of this species in Not Threatened (Dunn *et al*, 2018). No other fish species were recorded.

The overall SEV score was 0.33 out of a maximum possible of 1, a low score reflecting poor habitat functions relative to unmodified reference sites. The value for Hydraulic Functions was 0.48, Biogeochemical Functions 0.27, Habitat provision 0.23 and Biodiversity 0.28 (Table 3). These scores showed low integrity across all categories of functions.

Overall, the stream was found to be highly degraded with very low current values and moderate potential values.

Table 3. SEV function scores at Site 1, 362 Jones Road.

Hydrological Biogeochemical		Habitat	Biodiversity	Overall score	
0.48	0.48 0.27		0.28	0.33	

3.3 Wetland Classification and Delineation

Eleven vegetation assessment plots were investigated within and on the periphery of features identified as prospective wetlands in the desktop analysis and site walkover (Table 4; Appendix 2). From this assessment, five wetland features were classified as 'natural inland wetland' and delineated based on NPS-FM protocol. One further feature was assessed but did not qualify as a natural inland wetland (Figure 1).

Table 4. Wetland Plot Results, 362 Jones Road.

Plot	Rapid	Dominance	PI	Pasture %	Dominant Vegetation	Hydric Soils/ Wetland Hydrology	Inland Natural Wetland	
	Wetland A							
1	Fail	Fail	3.7	65	Rye Grass (E); White	Fail	No	
					Clover (E)			
2	Pass	Pass	2.0	20	Jointed Rush (E)	Pass	Yes	
3	Pass	Pass	1.5	22	Soft Rush (E)	Pass	Yes	
4	Pass	Pass	2.1	22	Jointed Rush (E)	Pass	Yes	
5	Fail	Pass	2.9	55	Yorkshire Fog (E)	Pass	No	
				We	etland B			
6	Pass	Pass	2.0	20	Isolepis Prolifera (N)	Pass	Yes	
				We	etland C			
7	Fail	Fail	3.2	55	Soft Rush (E); Rye Grass	Pass	No	
					(E)			
8	Pass	Pass	1.2	0	Baumea (N)	Pass	Yes	
				We	etland D			
9	Pass	Pass	2.2	5	Mercer Grass (E)	Pass	Yes	
	Wetland E							
10	Pass	Pass	2.3	20	Mercer Grass (E)	Pass	Yes	
11	Pass	Pass	1.5	0	Mercer Grass (E); Baumea	Pass	Pass	
					(N); Isolepis Prolifera (N)			
E = Ex	E = Exotic; N = Native							

3.3.1 Wetland A

Wetland A (963 m^2) is a low-lying, concave area located within the headwaters of an intermittent stream draining to the south of the property (Photo 1).



Photo 1: Wetland A Left: view upstream of feature, Right: Surface water and extensive pugging present.

This feature meets the criteria for a *natural inland wetland*, based on the Rapid test. The dominant vegetation cover within this wetland feature was jointed rush (*Juncus articulatus* - exotic), soft rush (*Juncus effusus* - exotic) and baumea (*Machaerina rubiginosa* - native). Surface water was present and flowing at the toe of the hillslope, forming a shallow pond that discharged to the watercourse. The presence of iron floc in the water indicates that the wetland is groundwater-fed. Extensive cattle damage (pugging) was also evident throughout the feature.

3.3.2 Wetland B

Wetland B (1,458 m²) is located within the low-lying riparian zone of Stream 1 (Photo 2).



Photo 2: Wetland B. Top Left: culvert beneath farm access track. Top Right: Ponding upstream of culvert. Bottom Left: Upstream wetland section. Bottom Right: Downstream Wetland section.

The culvert for the farm crossing in the lower stream reaches appears partially buried so that the access track acts as a bund, resulting in ponding and widening of the wetland feature immediately upstream. The stream channel is poorly defined, with low-lying floodplains overgrown with hydrophilic vegetation. Downstream of the farm crossing, flows are restricted, resulting in sedimentation and expansion of wetland vegetation dominated by *Isolepis prolifera* (native) and wiwi (*Juncus edgariae* – native) across the entire channel. Wetland B meets the criteria of *natural inland wetland*, passing the Rapid test. Surface water and extensive pugging was observed throughout the feature.

3.3.3 Wetland C

Wetland C (699 m²) is located within a flat headwater basin which drains into a gully system before discharging into a defined stream channel (Photo 3). Wetland C was assessed as *natural inland wetland* based on the Rapid test as OBL and FACW species (baumea, *Isolepis prolifera* and soft rush) were dominant. Surface water and extensive pugging was observed within the feature.





Photo 3: Wetland C feature within headwater basin of stream

3.3.4 Wetland D

Wetland D is a small feature (158 m²) located within an overland flow path (OLFP) of Stream 3. The feature was dominated by Mercer grass (*Paspalum distichum* – exotic), a FACW grass which, though not recognised as pasture species for the purposes of the NPS-FW, is indicative of the agricultural landuse (Photo 4). The upper extent of the feature appeared to be truncated due to deposition of disturbed soils/ cleanfill in the upper section. The OLFP also appeared to have been deepened and straightened to increase draining efficiency. Wetland D met the criteria of *natural inland wetland* based on the Rapid test.



Photo 4: Wetland D within OLFP dominated by mercer grass.

3.3.5 Wetland E

Wetland E is a large feature $(2,171 \text{ m}^2)$ located in the low-lying basin in the far north-eastern section of the proposed managed fill footprint. The wetland feature is formed by two tributaries with a pond located at the confluence.



Photo 5: Left: Wetland E vegetation and single rimu on upslope; Right: upper gully, partly drained.

The wetland extends up the gully to the south. In this area a drain has been excavated and this has reduced ground saturation and affected the condition of the wetland. Mercer grass and soft rush dominated vegetation on the outer margins of the wetland, while the centre included patches of baumea, *Isolepis prolifera* and water pepper (*Persicaria hydropiper* – Exotic) (Photo 5). Wetland E was assessed as *natural inland wetland*, based on the Rapid test.

3.3.6 Wetland Values

Overall, the project area encompasses 5,450 m² of inland natural wetland; 40% of which is located within Wetland E. All wetland features were found to be heavily modified and actively grazed, and evidently have a long history of agricultural land use. The condition of these features was poor due to significant pugging from stock, drainage, and poor water (algal blooms were noted in areas of standing water).

Wetlands A and D, and the outer extent of wetlands B, C and E were dominated by exotic wetland vegetation including wet tolerant pasture species and rushes. All wetlands within the site are characterised by modified hydrology, low biodiversity and plant communities poorly representative of indigenous wetland ecosystems. The wetlands nevertheless provide hydrological and water quality treatment functions. Such wetlands are common in the agricultural landscape within the Manukau Ecological District.

Table 5. Wetland Values, 362 Jones Road.

Wetland	Α	В	С	D	E
Ecological Integrity	3	2	2	1	3
Ecosystem rarity	2	1	1	1	2
Biodiversity	2	1	1	1	2
Threatened species	1	1	1	1	1
Water quality buffering	2	3	2	1	3
Hydrological functions	3	2	2	1	3
Total/30	13	10	9	6	14
Average function score	2.17	1.67	1.50	1.00	2.33
% of potential function	43	33	30	20	47
Overall functional value	Moderate	Low	Low	Very Low	Moderate

3.4 Terrestrial Vegetation

Terrestrial vegetation included riparian forest around Stream 3, and two small stands of trees (both fenced; refer Figure 1). These features are described below. Scattered willows were present along Stream 1 and 2, a number of individual trees and barberry hedgerows were interspersed through the pastureland, as shown in Figure 1.

Riparian Vegetation (Stream 3)

The riparian vegetation surrounding Stream 3 comprises willows (*Salix* spp.) and a variety of native trees and shrubs, including houhere (*Hoheria populnea*), tōtara (*Podocarpus totara*), kōwhai (*Sophora microphylla*), karaka (*Corynocarpus laevigatus*), karamu (*Coprosma robusta*), akeake (*Dodonaea viscosa*), kānuka (*Kunzea robusta*), tarata (*Pittosporum eugenioides*), pōnga (*Cyathea dealbata*), and tī kouka (*Cordyline australis*) (Photo 6 and 7). The groundcover was limited due to grazing, but included pasture grasses, buttercup (*Ranunculus repens*),

Juncus spp., kiokio (*Parablechnum novae-zelandiae*), and blackberry (*Rubus fruticosus*). From Google Earth imagery and Retrolens (https://retrolens.co.nz/Map), we determined that this vegetation was planted roughly 20-25 years ago.



Photo 6: Image of the riparian vegetation surrounding Stream 3.



Photo 7: Riparian vegetation surrounding Stream 3.

Macrocarpa stand

Exotic macrocarpa (*Cupressus macrocarpa*) trees and a *Pinus radiata* tree, all around 20-25m tall dominate the stand of trees nearest to the homestead (Photo 8), with a subcanopy of native and exotic shrubs including mapou (*Myrsine australis*) and Chinese privet (*Ligustrum sinense*).

An ~8m tall pūriri (*Vitex lucens*) tree is present on the eastern margin of the stand. The groundcover is largely composed of pasture grass.



Photo 8: Macrocarpa and undergrowth in the first southern vegetation patch.

Native Forest Remnant

A small remnant stand of mature and regenerating native trees (5-12m tall) is present on the margin of the proposed managed fill footprint in the southern quarter of the property. Mature specimens of rewarewa (*Knightia excelsa*), tōtara, kauri (*Agathis australis*), pōhutukawa (*Metrosideros excelsa*) form the canopy, with a subcanopy of karaka, tree privet (*Ligustrum lucidum*) and mapou. Juvenile mapou, totara, karaka and Chinese privet form the understory.





Photo 9 and 10: Native forest remnant.

SEA

Part of a Significant Ecological Area is located in the north-east of the site, at the northern end of Wetland E. This comprises approximately 650 m² of terrestrial vegetation and is identified as SEA_T_413. The SEA continues northwards along the stream corridor. The Schedule 3 of the AUP notes this SEA meets sub-factor 3, assessed as having indigenous diversity values. Aerial photography confirms that the SEA vegetation within the site comprises pine trees.

3.5 Fauna

3.5.1 Native Birds

The forest and scrub habitats present are likely to provide permanent and intermittent habitat for roosting and nesting native birds. Bird Atlas records of native species in the surrounding area (Table 6) include a variety of mostly common species that typically occur in similar habitats. During the site visit grey warbler, spurwing plover, New Zealand fantail and tūī were heard, and pūkeko, swamp harrier, sacred kingfisher and silvereye were sighted. An old nest (possibly of a tui) was found in the riparian vegetation. The site visit was carried out at the end of the breeding season so active nesting was not observed.

Table 6. Native and endemic bird species recorded within a 6km radius of 362 Jones Road, Hunua (Data from OSNZ Atlas of Bird Distribution in NZ, 2024).

Species			Conservation status (Robertson et al., 2021)
Shining cuckoo Chrysococcyx lucidus		Native	Not Threatened
Kākā	Nestor meridionalis	Endemic	At Risk – Recovering
Grey warbler	Gerygone igata	Endemic	Not Threatened
Ruru	Ninox novaeseelandiae	Native	Not Threatened
Tomtit	Petroica macrocephala	Endemic	Not Threatened
NZ fantail	Rhipidura fuliginosa	Endemic	Not Threatened
Silvereye	Zosterops lateralis	Native	Not Threatened
Kererū	Hemiphaga novaeseelandiae	Endemic	Not Threatened
Tūī	Prosthemadera novaeseelandiae	Endemic	Not Threatened
Harrier hawk	Circus approximans	Native	Not Threatened
Sacred kingfisher	Todiramphus sanctus	Native	Not Threatened
White-faced heron	Egretta novaehollandiae	Native	Not Threatened
Spurwing Plover	Vanellus miles	Native	Not Threatened
Weka	Gallirallus australis	Endemic	Not Threatened
Welcome Swallow	Hirundo neoxena	Native	Not Threatened
Paradise Shelduck	Tadorna variegata	Endemic	Not Threatened
Pūkeko	Porphyrio melanotus	Native	Not Threatened

3.5.2 Bats

Long tailed bats (*Chalinolobus tuberculatus*) are known to be resident in the Hunua Ranges, with numerous detections within a 10km radius of the Project Site. The record closest to 362

Jones Road 5.6 km away, from 2019 (Bat database, Auckland Council). These bats may forage over extensive ranges, often feeding along forest edges and tree lines, and are known to move their roosts frequently.

Mature trees within the site, including large macrocarpa, pine, and both planted and remnant native trees, offer potential roosting habitat for long-tailed bats. The large macrocarpa trees (Photo 3) were observed to have features suitable roosting features for long-tailed bats, specifically small crevices and large areas of loose bark. The threat classification of the long-tailed bat (*Chalinolobus tuberculatus*) is "Threatened – Nationally Critical" (O'Donnell et al., 2023).

3.5.3 Native Lizards

Prospective native lizard habitat features were inspected during the site visit. Native vegetation patches, particularly the riparian vegetation and forest remnant, appeared moderately suitable for both arboreal and ground dwelling lizards. The presence of flakey bark and some diversity of native tree species would provide moderate habitat for arboreal geckos. In the understory the leaf litter offered moderately suitable habitat for ground dwelling skinks. However, the small extent and lack of continuity between patches of native vegetation may limit the viability of these habitats.

Based on a desktop assessment, it is possible that the following species are present within the property (Table 7):

Table 7. Native lizards recorded within a 10km radius of 362 Jones Road, Hunua, across the last 9 years. Data from Auckland Council, accessed in April 2024, and Department of Conservation Bioweb Database, access in April 2024.

Species	Common Name	Threat Classification (National & Regional) Hitchmough <i>et al</i> , 2021.		Observation Year
Oligosoma aeneum	Copper skink	At Risk – Declining Regionally Declining	Open scrubland, forest edges – ground dwelling	2015
Naultinus elegans	Elegant gecko	At Risk – Declining Regionally Declining	Forest / scrub – arboreal	2015

3.5.4 Pest Animals

Several rabbits (*Oryctolagus cuniculus*) were observed in the pasture grasses of the site. Rabbits are considered to be ecological and agricultural pests due to their herbivorous grazing, destroying smaller plant species and regenerating native seedlings.

4.0 Proposed Activities

4.1 Stream Crossing

The haul road will cross Stream 1 and Wetland B via a bridge located immediately upstream of the existing culvert. The purpose of the bridge is to avoid encasement of the stream and any wetland reclamation. The bridge will span the stream from abutments on either side, allowing unimpeded flow, hydrological connectivity to the groundwater, and continuity of instream habitat from upstream to downstream. This design will ensure there is no loss of habitat or impairment of fish passage.

The existing 600 mm diameter culvert will be removed, and the natural wetland and stream will be reinstated here. The purpose of removing this structure is to daylight approximately 30 m² of stream and wetland habitat, achieving a net gain in ecological values. Another 30 m² of wetland adjacent to the existing culvert will be restored to a natural contour with a smooth transition to the daylighted areas. The total works area including bank trimming is approximately 100 m².

The culvert removal works are shown on Drawing 33250/140 (Appendix 4). The following methodology has also been provided by FTL:

Works are to be undertaken during forecast period of fine weather (minimum 2-3 days) in summer season, ideally when no water is flowing in stream:

- (a) Establish erosion and sediment controls, comprising super silt fence across stream channel downgradient of culvert. Provide for portable pump and sand bags to be available on-site for damming stream on upstream side, in event of unexpected rainfall or stream low flows:
- (b) Remove any vegetation from culvert crossing;
- (c) Remove road embankment (soil material) to stockpile. Place suitable materials in Fill facility and dispose of excess or unsuitable spoil off-site to appropriate facility. Contamination testing of fill material in embankment may be required based on visual observations (at discretion of SQEP).
- (d) Remove existing 600 mm diameter culvert and any hardfill bedding material and associated inlet/outlet structures.
- (e) Remove residual stream embankment down to existing stream bed level and undercut by 150mm.
- (f) Trim stream banks to tie in with existing stream profile.
- (g) Place 150mm clean topsoil on restored stream bed and stream batters and cover with biodegradable coir matting or similar, pinned in place.
- (h) Grass stream bed and banks, using water tolerant grass (Outfield 'Rye' grass or similar approved). Supplier Prebble Seeds, 09 273 4682
- (i) Remove erosion/sediment controls and any temporary dams.

Notes:

- Works extent is approx. 100m² with estimated embankment volume of 33m³.
- Estimated works duration is two days, but 3 days allowed to provide some contingency.
- Stream bed disturbance during construction will be limited to the minimum practical area and not more than 5m either side of the old culvert, excluding the length of the culvert itself.
- All construction materials and ancillary materials will be removed from the stream bed following completion of construction.

A plan showing the works is included in Appendix 4.

4.2 Haul Road

Construction of the haul road will require earthworks, including a steep incline. Sediment generation and yield from these works will be managed under an Erosion and Sediment Control Plan complying with Auckland Council guidance GD05 (Auckland Council, 2018). The finished road surface will be stabilised and compacted to a high standard to allow the passage of heavy vehicles.

The stand of macrocarpa and associated trees will be removed to allow an efficient alignment of the haul road.

4.3 Fill Areas

The footprint of the southern fill site is 2 ha, and the northern fill area is 9 ha in extent. These fill areas will have a minimum setback of 10 m from any stream and wetland features. The fill area and setbacks are shown in Figure 1 and Appendix 4.

The fill areas will be managed to control sediment generation. As described in the FTL Engineering Report (FTL, 2024), erosion and sediment control measures will comply with GD05 and are expected to include:

- Staging of fill with maximum of 2ha operational at any time.
- Stabilisation of filled areas (mulching, temporary and permanent seeding).
- · Benching.
- Clean and dirty water diversion.
- Silt fences.
- Sediment retention ponds with chemical flocculation, as required based on bench testing.

4.4 Riparian Management

It is proposed to establish a minimum 10 m wide riparian zone on each side of the stream and wetland features in the south area (Wetland A, B and C and Stream 1 and 2). The extent of planting is shown in the landscape plan in Appendix 4. This includes expanding the riparian planting around Wetland E (adjacent to the SEA) to a minimum of 20 m in width.

The combined area of wetland, wetland riparian and stream riparian planting is more than 3.9 ha (LA4, 2025).

These zones will be planted and fenced. These measures will protect the features from livestock damage, reduce sediment and nutrient inputs, increase biodiversity, and enhance ecological functioning by creating more complex communities and interactions between land and water ecosystems. We understand that, as requested in the RFI, the timing of the planting will be brought forward if practicable to achieve earlier environmental enhancement (LA4, 2025).

Stream 3 and its associated riparian margin will be retained and is already fenced. The area will be managed with weed and pest control (possum control) and infill planted with native trees and

shrubs. The planted area will be widened where needed to meet the 10m minimum riparian width as shown in the Landscape Plan (Appendix 4).

Wetland D will be planted with native wetland species and a swale established up to Jones Road to improve runoff quality. Where practical, surface flows and subsurface drainage will be directed to this wetland to maintain an intermittently wet wetland hydrology. The fill area will be a minimum distance of 10 m from this feature. Erosion control measures will be important here during construction in order to avoid any direct sediment runoff.

Wetland E will be fenced to protect it from future livestock grazing. The aim will be to reduce pressure from landuse activities. The hydrological functions appear to be relatively intact. The aim here is to maintain wetland functions. This will include fencing of the SEA area that adjoins the wetland. Fencing the SEA within the property will prevent livestock damage and allow the regeneration of native plant species, while the fencing of the adjacent wetland will provide a further buffer zone.

The purpose of this proposed riparian zone management is to enhance ecological values through the project and have a positive effect on streams and wetlands. While we have not identified specific effects on streams and wetlands that require offsetting or compensation, it is important that on-site riparian benefits are available for this purpose, if later required.

Some other native planting will be undertaken that is not associated with streams and wetlands, specifically vegetation along the noise bund on the eastern boundary of the site. This will add c.6,200 m² of native vegetation to the site. Although not intended to address specific ecological issues, such as riparian buffering, the additional planting will nonetheless have some ecological benefits. This planting will increase the total area of native vegetation on the site and support biodiversity (e.g. indigenous plants, insects and birds) and ecological processes (e.g. soil formation, vegetation regeneration) within the planted areas.

5.0 Assessment of Effects

5.1 Streamworks

The haul road crossing of Stream 1 has two components, being the construction of the new bridge, and the removal of the old culvert.

The proposed bridge will cross at a narrow point in the channel and will avoid works within the channel or any permanent reclamation of stream or wetland environments. The bridge will ensure continuity of habitats within the channel and unimpeded fish passage. Effects of the bridge on Stream 1 will be low or negligible.

The removal of the culvert will have temporary effects but long-term benefits by restoring (daylighting) an area of watercourse. The methodology described in Section 4.1 has been developed to minimise construction effects by isolating the works area, minimising the extent and duration of works and managing sediment from earthworks. Construction effects on Stream 1 will be localised and short term, with rapid recolonisation expected by wetland vegetation. The daylighting of the existing culvert will restore a section of wetland and result in a net ecological gain.

5.2 Vegetation Removal

Vegetation removal will be limited to removal of macrocarpa trees, hedgerows and specimen trees, and approximately four crack willow trees (*Salix fragilis*) at the new bridge crossing.

Crack willow is listed as a pest species in the Regional Pest Management Plan (National Plant Pest Accord Species and Whole Region – Sustained Control species), and removal of these tress would be regarded as beneficial to restrict its further spread.

The terrestrial SEA that adjoins Wetland E will be avoided.

We understand that the removal of the macrocarpas is a permitted activity (Vance Hodgson, pers comm), and that they may be removed prior to haul road construction. As the macrocarpa stand is potentially suitable for bat roosting, we recommend an acoustic monitor check prior to felling to ensure that no long-tailed bats are present. While the presence of bats is unlikely, this would be a good management practice to manage risk on a threatened species. We recognise that this recommendation is not enforceable by consent. The proposed vegetation removal would have low ecological effects, provided that no At-Risk or Threatened species are present.

Table 8. Summary of vegetation removal (as requested in RFI).

Proposed vegetation removal	Area and species
Vegetation within 10m riparian areas	Approximately four crack willow trees (Salix fragilis), c.180 m ² .
Vegetation within 20m wetland setback	None. Existing vegetation retained or comprises only pasture.
Other vegetation within the site (notably trees larger than 15cm dbh)	Macrocarpa trees near homestead (c. 500 m², depending on haul road requirement).

5.3 Sediment Discharge

Runoff of sediment from earthworks areas during fill construction and operation will be managed by erosion and sediment control practices as listed in Section 4.3. Fraser Thomas Partners note that: "The majority of sediment in runoff from active filling areas is expected to be removed in these sediment retention ponds, with typical removal efficiencies of 95% or higher typically being achieved with flocculation. The treated runoff will be discharged from these ponds in a controlled manner. It will contain some residual solids, the majority of which is likely to be present in dissolved form and hence less likely to precipitate out. Some localised, minor sediment deposition may occur downstream of the pond discharge points".

The existing land is grazed and sediment discharges may be quite high at times of the year, depending on factors such as stock numbers, grass growth and rainfall. During the operation of the fill there will be no sediment discharge from agriculture, a reduction which that will have a positive effect on the overall load entering the streams.

Discharges from Sediment Retention Ponds will occur into Stream 1 (SRP 3), and Stream 3 (SRP1) and a constructed pond at the lower end of Wetland E (SRP2) (Appendix 4). The discharge from SRP2 will enter an existing on-line pond at the wetland outlet and will not pass through the wetland here. Discharges from these treatment devices may result in periodic increases in suspended sediment concentrations during and after rainfall, throughout the period

of operation of the fill. As noted above, there may also be localised sediment deposition near discharge points. Both suspended sediment and deposits on the stream bed can have adverse effects on aquatic plants and animals. The aquatic habitats here receive runoff from agriculture and are not considered to be sensitive to the proposed discharges. Any ecological effects are likely to be localised and have only minor effects on ecological functions and values. Effects may include reduction in flora and fauna abundance within areas of sediment deposition but are unlikely to have effects on biodiversity or abundance outside these localised areas.

To manage the effects, it is important that erosion and sediment controls minimise the extent of such depositional areas. In our assessment the proposed controls to GD05 guidelines together with limitations of the exposed earthworks are appropriate and likely to ensure that the level of effects on ecological values in the receiving environmental are low.

5.4 Hydrological Effects

Potential effects may arise from the effects of changes to surface or groundwater flows on streams and wetlands. Groundwater recharge and surface runoff in the earthworks area is likely to be locally affected by the works. Some surface water will be diverted into treatment systems and discharged further downstream than currently (see SRP locations, Appendix 4). The placed fill will be compacted and is likely to have low permeability and low water holding capacity. The additional loading on the surface may also affect water tables, potentially squeezing or deforming it.

Generally, we note that the total amount of water in the catchment of each wetland and stream will be maintained; the fill will be located at a higher elevation than the streams and wetlands, which reduces the likelihood of interactions with the water table; and potential effects on flows will be mitigated by designing drainage to feed into features, where practicable.

The catchment area open at any time will be limited, with a maximum of 2ha going to either of the northern sediment ponds and a maximum of 1.2ha going to the southern sediment ponds. Hence, clean water from the rest of these catchments will be diverted from entering these ponds and be directed to the current streams/wetlands. This will further mitigate the effect of the cleanfill on streams/wetlands.

Earthworks in the catchment of Wetland A are limited and hydrological effects appear to be unlikely.

Stream 1 and wetland B are at lower elevations than the fill and have a large upstream catchment source of flow that will not be affected by the proposed activities.

Fill will be placed on the eastern side of Wetland C and Stream 2 (Figure 1), but not to the west or north, and the fill is largely elevated above the water table of these features and unlikely to have any hydrological effects.

Wetland D is a small feature at the head of Stream 3, with very low current and potential ecological values. It is close to the northern fill area, which is >10 m to the northern side of the feature and is not obstructing the most direct surface and groundwater flowpaths to the east. The fill here will load and compress the ground under the fill, and there is also likely to be less infiltration and recharge which may affect groundwater levels. The main upslope flowpath is eastward and is likely to provide surface flows and infiltrated flows. Directing surface water flows into this feature will also help maintain the wetland extent and ecological functions. Planting the feature would further enhance biodiversity values. Overall, with appropriate management measures, effects on this small wetland would be low, or potentially a net gain.

Effects on the water table of Stream 3 are unlikely, however, diversion of dirty water for treatment will reduce surface inflows to the middle and upper stream reaches during and after rainfall events. This stream is intermittent and contains some constructed pond features. The duration of non-flowing periods may potentially increase in parts of the stream, but flows are likely to persist during most winter months. These potential effects should be mitigated by diverting clean water flows into the upper reaches of the stream where practicable. Overall, the effects on ecological values are likely to be low.

Wetland E has is at low risk of adverse effects due to its low elevation relative to the fill, groundwater connection and large catchment area unaffected by fill operations.

5.5 Biosecurity Risks and Management

The managed fill operation will bring soil from other parts of the Auckland Region and may contain seeds, plant fragments and soil microbes including pathogens.

Movement of trucks delivering material will be restricted to hard stand areas.

The delivered soil will be contained within the fill areas. The fill areas will be isolated and fill activities contained and controlled, and soil stabilised to prevent erosion as described in the Erosion and Sediment Control Plan.

Kauri vegetation material will not be accepted.

A grassed buffer will be maintained between fill areas and the vegetated areas such as stream margins. This will be managed and monitored for invasive weed species.

Planted areas will also be monitored for weeds during their consented maintenance period.

The biosecurity risk of activities on the site to ecosystems in the surrounding area is assessed as low.

We recommend the best practice guideline for machinery hygiene is adopted, (https://www.waikatoregion.govt.nz/assets/WRC/Keepitclean.pdf), which promotes a "keep it clean" approach for machinery entering and leaving site.

5.6 Landscape Ecology Effects

The RFI included a request for effects of the proposed activities on terrestrial ecological features in the wider landscape, outside of the site. There are SEAs both in the north of the site and to the east of Jones Road. These areas are likely to contain threatened communities and species. The SEAs are located within a rural landscape that is predominantly pastoral farming. The site is predominantly pasture and it is proposed to remove only a few exotic trees, as listed above in Table 8. The site does not provide any special resources for indigenous species. The site location and characteristics do not identify it as an important movement corridor for mobile species. The site is representative of farmland in the area, and the activities on the site are unlikely to have any influence on ecological features or species in the wider landscape. The proposed planting will have a positive effect on ecological values at the site scale but is unlikely to affect ecological values at the landscape scale.

5.7 National Environmental Standards for Freshwater and Effects Management Hierarchy

Section 45B of the NESF relates to effects of Landfills and Cleanfill areas on Natural Inland Wetlands. Non-complying activities such as earthworks, vegetation removal, or taking, damming, diversion or discharge of water are Discretionary and the Effects Management Hierarchy musty be applied. We have undertaken an analysis to identify Non-Complying activities (Table 9). We discuss how the EMH has been applied to these. The culvert removal is a Permitted restoration activity and will be undertaken in compliance with the relevant conditions as outlined below.

Tree removal

The removal of approximately four willow trees to enable the construction of the haul road cannot be avoided at this location but can be minimised by removing no more trees than are necessary and remedied by the proposed riparian planting (10 m wide margin of indigenous vegetation). The effects of removing four exotic trees will be less than minor and no offsetting or compensation is required. Bird nest checks can be undertaken during bird nesting season (August to November), if consent is required for removal of these trees.

Bridge construction

The location, extent and methodology for the proposed bridge construction is described in section 4.1.

The proposed works cannot be avoided to construct the haul road. The purpose of the bridge design is to minimise effects by retaining a natural watercourse including instream habitat characteristics, continuity with upstream and downstream environments, and connectivity with groundwater. The bridge crossing will replace the existing farm culvert crossing, the culvert will be removed and a section of functional wetland (estimated to be at least 30 m²) restored. The new bridge abutments do not extent into the wetland.

The haul road approaches will involve earthworks within 10 m. The footprint area of the haul road approaches within the 10 m setback is estimated to be less than 200 m². This is a relatively small area that can be effectively managed by erosion and sediment control practices such as silt fences. The adjacent wetland plant community is not considered to be sensitive to potential effects. The effects of earthworks within 10 m of the wetland are assessed as very low (less than minor). In the event of an incident resulting in localised sediment deposition in the wetland adjacent to the earthworks, remediation should be undertaken inclusion removal of the sediment and restoration of wetland vegetation.

The proposal avoids and minimises effects to the extent practicable. Disturbed areas will be remediated by planting. There will be a net increase in wetland area as a result of daylighting of at least 30 m². Residual effects will be less than minor and no offsetting or compensation is required.

In our analysis in Table 9, two activities were identified that triggered Discretionary status, being tree removal and bridge installation. The application of the Effects Management Hierarchy to these activities is described below. Under this management hierarchy, adverse effects must first be <u>avoided</u> to the extent practicable, then <u>minimised</u>, <u>remedied</u>, and is residual effects are more than minor, <u>offset</u> or <u>compensated</u> or the activity <u>not undertaken</u> (see National Policy Statement for Freshwater; MfE, 2020).

Table 9. Assessment of activities against NES Section 45B. "Yes" indicates that Discretionary Status is triggered and the Effects Management Hierarchy must be applied.

	Wetland	Α	В	С	D	E
NES 45B clau se	Activities in wetland catchment	Haul road within catchment (in part).	Haul road, fill, bridge, removal of culvert, willow removal, planting.	Fill placement within catchment, haul road (in part).	Fill placement and haul road within catchment.	Fill placement within catchment.
1	Vegetation clearance* within or within 10 m setback	No. None undertaken.	Yes. Some willows removed for haul road crossing.	No. None undertaken.	No. None undertaken.	No. None undertaken.
2	Earthworks within or within 10 m setback	No. None undertaken.	Yes. Bridge abutments are within 10 m.	No. None undertaken.	No. None undertaken.	No. None undertaken.
3	Earthworks within a 100 m setback and likely to result in complete or partial drainage of the wetland	No. Earthworks undertaken within 100m, but upslope and only part of catchment so unlikely to result in drainage.	No. Fill upslope so does not cause drainage. Dominant flows from upstream catchment.	No. Earthworks undertaken within 100m, but upslope and only part of catchment so unlikely to result in drainage.	No. Earthworks are upslope and unlikely to cause drainage.	No. Earthworks are upslope and unlikely to cause drainage.
4	Diversion** of water within a 100m setback likely to change to water level range or hydrological function of the wetland.	No. Haul road is located on ridge resulting in minimal diversion of surface catchment. Insufficient to change the water level range or hydrological function.	No. Dominant flows from upstream catchment. Works do not divert flow away from wetland.	No. Fill is upslope and generally parallel to existing contours. Fill covers about 40% of surface catchment. Some effects on hydrology possible but water level likely to remain in natural range and maintain wetland functions.	No. While earthworks over much of the catchment may affect hydrology it will probably not affect water level range or hydrological functions, such as storage or infiltration or capacity to support wetland plants. Design is intended to mitigate hydrological effects.	No. Dominant flows from upstream catchment. Works do not divert flow away from wetland.
5	Discharge of water into water within or within a 100m setback and likely to change to water level range or hydrological function of the wetland.	No. No discharge into wetland.	No. Sediment pond 3 is located within the catchment. It will discharge into the watercourse during operational period but is unlikely to affect water level range or hydrological function of the wetland.	No. No discharge into wetland.	No. Surface drainage will be directed into the wetland to sustain hydrology. This is unlikely to change water level range of hydrological function.	No. Sediment pond 2 is located within the catchment. It will discharge into the watercourse during the operational period but is unlikely to affect water level range or hydrological function of the wetland.

^{*}defined in the NESF as "means the disturbance, damage, destruction, or removal of vegetation by any means (for example, by cutting, crushing, application of chemicals, or burning)".

^{**}also taking and damming.

Culvert removal

Earthworks within a wetland are Permitted under regulation 38 (2)c if they comply with the conditions listed in Regulation 55 of the NESF, are not more than 500 m² and are not a restricted discretionary discharge. In this section we assess compliance with these conditions to determine if the activity is Permitted and does not require consent under section 45B of the NESF.

Conditions and assessment:

- 55(2) requires prior notice of the activity. The location and extent of the activity is shown in Drawing 33250/140.
- 55(3) requires the activity must not result in the effects listed. The activity involves localised excavation to remove the culvert, to be undertaken under dry-weather conditions. Effects will be limited to sediment disturbance and will be localised and temporary. This will not trigger the effects such as water contaminated or more than minor adverse effects on aquatic life.
- 55(4) is an exclusion for potential flood risks and is not applicable.
- 55(5) is relates to temporary diversion or discharge of water around the site and is not applicable.
- 55(6) is a definition of the 1% AEP floodplain.
- 55(7) requires the activity does not cause instability or erosion or constriction or flooding of water.
- 55(8) requires appropriate erosion and sediment control measures.
- 55(9) requires that only indigenous vegetation is planted, must not smother indigenous vegetation with sediment, and must not disturb bird nesting or fish spawning.
- 55(10) and (11) relate to historic heritage and are not applicable.
- 55(12) provides conditions for operation of machinery. This can be complied with during works. The contractor mush be briefed on these conditions.
- 55(13) requires the extent of works to be no greater than necessary and must be cleaned up within 5 days after the activity.

We conclude that the proposed removal of the culvert for restoration purposes would be undertaken in compliance with Permitted Activity Conditions in Regulation 55.

6.0 Summary and Conclusion

The ecological features with the project area were described and classified. Two Intermittent Streams and one Permanent Stream were identified, and five natural Inland Wetlands. The streams were assessed as having very low ecological values, and the wetlands very low (Wetland D), low (wetland B and C) and moderate ecological values (Wetland A and E).

The proposed activities include fill placement, and haul road construction including a new bridge. The fill areas have been located to avoid reclamation of steam and wetlands. Protection and planting of riparian zones is also proposed in order to generate a positive

ecological outcome for the project. This will provide an additional buffer zone to the SEA that will improve the values of the SEA within the property. We recommend that a planting plan is prepared by a suitably qualified and experienced expert.

The proposed bridge will avoid direct effects on stream and wetland habitats and fish passage. The removal of the existing culvert will reinstate an area of wetland and streambed and result in a net gain in ecological values. Surface flows from the active fill areas will be diverted into sediment retention ponds, with treated water discharged into Stream 1, 3 and Wetland E. These ponds will have high sediment removal efficiencies, with treated runoff expected to contain low levels of residual solids, which may result in some localised, minor sediment deposition downstream of the pond discharge points and periodic increases in suspected sediment concentrations. The extent of effects at these locations is likely to be relatively small and adverse effects on stream and wetland ecological values including biodiversity and abundance of plants and animals is likely to be low. Where surface flows are directed into stormwater treatment, flows in Streams 2 and 3 may be reduced. These are Intermittent Streams and hydrological functions will be maintained. Hydrological functions in Wetland E will also be maintained as it has a large catchment uninfluenced by the project. The proposed vegetation removal is limited to hedgerows, rural specimen trees and a stand of macrocarpa trees, and ecological effects are likely to be low; however, we recommend bat checks prior to felling the macrocarpa trees if these are still in place. Adverse effects on the terrestrial SEA that adjoins Wetland E will be avoided.

In response to the Auckland Council RFI we have reviewed what matters may be Discretionary under NES Section 45B, and how these will be managed under the Effects Management Hierarchy. The proposed fill areas are not Discretionary as they will not involve earthworks within or within 10m of any natural inland wetland and will not result in drainage or discharges likely to result in a change in the "water level range or hydrological function". This is because the fill areas are upslope of the wetlands, and because ground and/or surface flows are likely to maintain key functions in each wetland.

The culvert removal meets the conditions in the NESF restoration and is a Permitted Activity. The culvert removal will result in daylighting and restoration of c. 30 m² of wetland, representing a net gain in wetland habitat for the project.

Tree removal and earthworks within 10 m of a wetland for the new bridge crossing are Discretionary activities. This involves removal of approximately four exotic willow trees (pest species) and c. 200 m² of earthworks within 10 m of the wetland. The effects are localised and temporary and will not affect any sensitive habitats or threatened flora or fauna. Adverse effects will be managed under the Effects Management Hierarchy to a level that is very low (i.e. less than minor).

We conclude that the project will avoid or minimise adverse ecological effects associated with the construction and operation of the managed fill. Furthermore, measures such as stream and wetland daylighting, riparian protection, and weed and pest control are likely to result in net positive ecological outcome.

7.0 References

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Appendix 1: River and Stream Definitions, Auckland Unitary Plan

River or stream

A continually or intermittently flowing body of fresh water, excluding ephemeral streams, and includes a stream or modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal except where it is a modified element of a natural drainage system).

Ephemeral stream

Stream reaches with a bed above the water table at all times, with water only flowing during and shortly after rain events. This category is defined as those stream reaches that do not meet the definition of permanent river or stream or intermittent 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
- (f) there is evidence of substrate sorting process, including scour and deposition.

Permanent river or stream

The continually flowing reaches of any river or stream.

Appendix 2: SEV data

Function	Variable (code)	Site 1
	Vchann	0.25
	Vlining	0.90
	Vpipe	1.00
NFR	=	0.47
	Vbank	1.00
	Vrough	0.25
FLE	=	0.25
	Vbarr	0.30
CSM	=	0.30
	Vchanshape	0.90
	Vlining	0.90
CGW	=	0.90
	Hydraulic function mean score	0.48
	Vshade	0.20
WTC	=	0.20
	Vdod	0.60
DOM	=	0.60
-	Vripar	0.10
	Vdecid	0.00
OMI	=	0.05
	Vmacro	0.94
	Vretain	0.20
IPR	=	0.20
	Vsurf	0.21
	Vripfilt	0.40
DOP	· =	0.31
	Biogeochemical function mean score	0.27
	Vgalspwn	1.00
	Vgalqual	0.25
	Vgobspwn	0.10
FSH	=	0.18
	Vphyshab	0.18
	Vwatqual	0.12
	Vimperv	0.70
HAF	=	0.29
	Habitat provision function mean score	0.23
	Vfish	0.37
FFI	=	0.37
	Vmci	0.26
	Vept	0.17
	Vinvert	0.47
IFI	=	0.30
	Vripcond	0.18
	Vripconn	1.00
RVI	=	0.18
	Biodiversity function mean score	0.28
	Overall mean SEV score (maximum value 1)	0.33

Appendix 3: Vegetation Plot Data

Plot Number		1							D		
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture	Dominant Species is	Dominant Species is OBL. FACW.	Score (Prevalence)	Points
o letter code	70 00101	Bonnian (Suzoralo) 1714	Openies realie		Timede Otalas		species	Species is OBL, FACW	FAC	Coole (Freduction)	(Prevalence)
lolper	30	у	Lolium perenne	Perennial Rye Grass		FACU	Y			4	120.0
trirep	30	у	Trifolium repens	White Clover		FACU	Y			4	120.0
ranrep rumobt	20 15	У	Ranunculus repens Rumex obtusifolius	Creeping Buttercup Broad-leaved Dock		FAC FAC			Yes	3	60.0 45.0
plalan	5		Plantago lanceolata	Narrow-leaved Plantain		FACU	Y			4	20.0
parari	,		r ranago ranccorata	Trainer reduced Francis		77.00				7	20.0
Number of species: 5	Percent vegetation cover: 100	Number of dominant species: 3									
OPTIONAL Indicators of wetland	nd hydrology and hydric soil (1 =	present, 0 = not present)									
Primary hydrology indicators				Secondary hydrology indicat	ors						
1A. Surface water		2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture ex	xclusion test:		
1B. Groundwater <30 cm		2H. Sparsely vegetated concave surface		2L. Drainage patterns				Pasture cover	65		
1C. Soil saturation <30 cm		2I. Salt crust		3E. Dry-season water table							
2A. Water marks		2J. Aquatic invertebrates		3F. Saturation in aerial imagery				Vegetation	100		
2B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position				cover			
2C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aquitard					0.65		
2D. Algal mat/crust 2F. Iron deposits		3C. Reduced iron 3D. Reduced iron in tilled soil		4D. FAC-neutral test				This	s pasture		
				4E. Frost-heave hummocks							
2F. Surface soil cracks Clarkson 2013		4A. High water table stunted/stressed plants		Hydric Soil?:		n MEE 2024					
Wetland vegetation determinat	tion					Wetland determination	un.				
Wettand regetation determinat	NOT .			1		Wetterfu determination		Wetland if all dor	minant species		
1. Rapid test score:	0%	Wetland if all dominant species across all stra (pass score = 100%)	ta rated OBL and/or FACW	Fail		1. Rapid test score:	0%	across all strata FACW (pass sco	rated OBL and/or ore = 100%)	Fail	
2a. Dominance Test Score:	33%	Wetland if more than 50% of dominant specie OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Fail		2a. Dominance Test Score:	33%	Wetland if more to dominant species are rated OBL, F the 50/20 rule.	than 50% of a across all strata FACW, or FAC using	Fail	
2b. FAC dominants	33%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	3.7	Wetland if PI ≤ 3 around 3.0 should other wetland independent	d be used alongside	Fail	
3. Indicators of hydric soil and wetland hydrology present?	No	YES (Pass) or NO (Fail)		Fail		3. Dominance + Prev	alence			Fails Both	
4. Prevalence Index Result:	3.7	Wetland if PI ≤ 3.0, but values around 3.0 sho wetland indicators.	uld be used alongside other	Fail		4a. Indicators of wetland hydrology present?	No	YES (Pass) or NO (Fail)		Fails Hydrology Test	
Is it a wetland?		It's not wetland vegetati	ion!			4b. Indicators of hydric soil present?	Yes	YES (Pass) or N	O (Fail)	Passes Soil Test	
						Is it a wetland?		<u>It's Not a</u>	Wetland under the	RMA!	
Plot Number		2	1								
Plot Number 6-letter code	% Cover	2 Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	Points (Prevalence)
6-letter code	% Cover	1		Common Name	Threat Status	Wetland Status		Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevalence)
6-letter code lotped junart	10 40	1	Lotus pedunculatus Juncus articulatus	Lotus Jointed Rush	Threat Status	FAC FACW	species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC		(Prevalence) 30.0 80.0
6-letter code lotped junart juneff	10 40 10	Dominant (50/20 rule) Y / N	Lotus pedunculatus Juncus articulatus Juncus effusus	Lotus Jointed Rush Leafless Rush	Threat Status	FAC FACW FACW	species Y	OBL, FACW	FAC	3 2 2	(Prevalence) 30.0 80.0 20.0
6-letter code lotped junart juneff hollan	10 40 10 10	Dominant (50/20 rule) Y / N	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus	Lotus Jointed Rush Leafless Rush Yorkshire Fog	Threat Status	FAC FACW FACW FAC	species	OBL, FACW	FAC		30.0 80.0 20.0 30.0
6-letter code lotped junart juneff hollan ranrep	10 40 10 10 5	Dominant (50/20 rule) Y / N	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush	Threat Status	FAC FACW FACW	species Y	OBL, FACW Yes	FAC	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped junart juneff hollan	10 40 10 10	Dominant (50/20 rule) Y / N	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus	Lotus Jointed Rush Leafless Rush Yorkshire Fog	Threat Status	FAC FACW FACW FAC FAC	species Y	OBL, FACW	Yes Yes	3 2 2	30.0 80.0 20.0 30.0
6-letter code lotped jurent ju	10 40 10 10 5 25	Dominant (50/26 rule) Y / N y y Number of dominant species: 2	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush Yorkshire Fog	Threat Status	FAC FACW FACW FAC FAC	species Y	OBL, FACW Yes	Yes Yes	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped jurent ju	10 40 10 10 5 25	Dominant (50/26 rule) Y / N y y Number of dominant species: 2	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush Yorkshire Fog	Threat Status	FAC FACW FACW FAC FAC	species Y	OBL, FACW Yes	Yes Yes	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code ictped junet junet tollan tearner isocer Number of species: 6 OPTIONAL indicators of wetlar Primary hydrology indicators	10 40 10 10 5 25	Dominant (50/20 rule) Y / N y y Number of dominant species: 2 present, 0 = not present)	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush Yorkshire Fog	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes	Yes Yes	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code iotped ipnart jurnert hollan ararep socer Number of species: 6 OPTIONAL Indicators of wetlan Primary hydrology indicators 1.4. Surface wetlan	10 40 10 10 5 25	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial inagery	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush Leafless Rush Yorkshire Fog Creeping Bullercup Scoondary hydrology Indicat 2K. Water-stained leaves	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes	Yes Yes	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code iotped jurnart jurnart holian rarrep isocor Number of species: 6 Optrof NAL Indicators of wetlar Primary hydrology indicators 1A, Surface water	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present (0 = arrol gresent) 20. Inundation on serial inagery 21. Exprash yearded conceive surface	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafless Rush Yorkshire Fog Creeping Buttercup Secondary Lyndrology Intidea 3tk. Water-stained leaves L. Undraleg apatems	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Pasture e	Yes Yes	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped junant junant junet hollan hollan rarrep soccer for of species: 6 Opt 10 VAB indicators of wellan Primary hydrology indicators 1.8 Greenwater 30 em 18. Greenwater 30 em 18. Greenwater 30 em	10 40 10 10 5 25	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial imagery 215. Sparsay vegetand concave surface 2.5 Searcust	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotus Jointed Rush Leafines Rush Vorkshire Fcq Creeping Buttercup Secondary hydrology indicat 2K. Water stained leaves 2L. Drainage patterns 3E. Ony-season water table	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Pasture e Pasture cover	Yes Yes Yes xclusion test:	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped jurnart jurnart jurnart holian ramep socoer Number of species: 6 OPTIONAL Indicators of wellar Parimary Nydrology Indicators 1.6 Serbos water	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial imagery 21. Sparsely vegetated concave surface 21. Sal crust	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotas Jointed Rush Leafless Rush Vorkshire Fog Creeping Buttercup Secondary Inversions Judicia St. Water-stained leaves 32. Drainage patterns 34. Dryseson water tall magery	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Pasture e Pasture cover	Yes Yes Yes xclusion test:	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code coped unant unant code rollin rollin rollin rollin rarsp cocce cocce rollin rollin rarsp cocce rollin rollin rarsp rollin rol	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 presents 0 s not present) 20. Invariation on sental imagery 21-5 parasity vegetand conceive surface 23. Agrants inventebrates 23. Agrants inventebrates	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lottes Jointed Flash Leafless Rash Yorkshire Fog Creeping Bulbercup 24. Water-dained leaves 24. United patricts 25. Dynamage patterns 27. Burlanden and the factors 28. The standard leaves 28. Operation and the factors 28. Operation and the factors 28. Operation in admit leaves 28. Operation in admit lea	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Yes Your and the second of the	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code ticiped jurnart jurnart jurnart holian rarrep stocer Number of species: 6 OPTIONAL Indicators of wetlar Primary lydrology indicators 18. Grandwater 40 cm 16. Grandwater 40 cm 28. Sediment depocks 28. Sediment depocks	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 25. Inundation on eard imagery 21. Sparsely vegetated concave surface 23. Sat crust 33. Algustic invertibrates 34. Hydrogen suffice odour 39. Outdook florestyne on roots	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotas Jointed Rush Leaffiess Rush Yorkshire Fog Creeping Buttercup 24. Water-stained leaves 24. Utain-stained leaves 25. Dynason water tale 35. Securation in serial imagery 48. Econophic position 46. Econophic position	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Xclusion test: 20 100 0.2	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code coped unsist	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 ptsetin (0 = 100 pieseil) 20. Inundation on aerial inagery 21. Sparset occurrence surface 23. Aguatic inventionates 23. Aguatic inventionates 39. Nythogo	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lottes Jointed Fash Jointed Fash Jointed Fash Torishink Fag Creeping Bulbercup 25. Water-stained leaves 25. Drainage patterns 25. Water-stained leaves 25. Brainage patterns 26. Geomorphic patterns 27. Brainage patterns 26. Geomorphic patterns 2	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Yes Your and the second of the	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code cirped urant urant rollin norm Politin Review Re	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial inagery 21s. Sparsely vegitated conceive surface 2.5 Set cents 2.4 Aguatic invertebrates 3.4 Nydrogen suffice octour 30. Reduced from initied soil 30. Reduced from initied soil	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lotas Jointed Rush Leaffiess Rush Yorkshire Fog Creeping Buttercup 24. Water-stained leaves 24. Utain-stained leaves 25. Dynason water tale 35. Securation in serial imagery 48. Econophic position 46. Econophic position	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Xclusion test: 20 100 0.2	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped unsit unsit unsit unsit unsit notation notati	10 40 10 10 5 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (i = 1	Dominant (50/20 rule) Y / N y Number of dominant species: 2 ptsetin (0 = 100 pieseil) 20. Inundation on aerial inagery 21. Sparset occurrence surface 23. Aguatic inventionates 23. Aguatic inventionates 39. Nythogo	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lottes Jointed Fash Jointed Fash Jointed Fash Torishink Fag Creeping Bulbercup 25. Water-stained leaves 25. Drainage patterns 25. Water-stained leaves 25. Brainage patterns 26. Geomorphic patterns 27. Brainage patterns 26. Geomorphic patterns 2	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Xclusion test: 20 100 0.2	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped Loter Lo	10 40 10 10 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial inagery 21s. Sparsely vegitated conceive surface 2.5 Set cents 2.4 Aguatic invertebrates 3.4 Nydrogen suffice octour 30. Reduced from initied soil 30. Reduced from initied soil	Lotus pedunculatus Juncus articulatus Juncus effusus Holcus lanatus Ranunculus repens	Lottes Jointed Fash Jointed Fash Jointed Fash Torishink Fag Creeping Bulbercup 25. Water-stained leaves 25. Drainage patterns 25. Water-stained leaves 25. Brainage patterns 26. Geomorphic patterns 27. Brainage patterns 26. Geomorphic patterns 2	Threat Status	FAC FACW FACW FAC PAC OBL	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover	Yes Yes Yes Xclusion test: 20 100 0.2	3 2 2	30.0 80.0 20.0 30.0 15.0
C-letter code lotped umant umant bolisis Number of species: 6 OptioNAL indicators of weath All formations of options 18. Generalization and one 18. Generalization and one 28. Water marks 28. Self-self-self-self-self-self-self-self-s	10 40 10 10 5 25 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aerial inagery 21s. Sparsely vegitated conceive surface 2.5 Set cents 2.4 Aguatic invertebrates 3.4 Nydrogen suffice octour 30. Reduced from initied soil 30. Reduced from initied soil	Lotus pedunculatus Juncus articulatus Juncus articulatus Juncus et	Lottes Jointed Fash Jointed Fash Jointed Fash Torishink Fag Creeping Bulbercup 25. Water-stained leaves 25. Drainage patterns 25. Water-stained leaves 25. Brainage patterns 26. Geomorphic patterns 27. Brainage patterns 26. Geomorphic patterns 2	Threat Status	FAC FACW FACW FAC FAC	species Y	Yes Yes Yes Pasture e Pasture cover Vegetation cover This is.	Yes Yes Yes Yes 20 100 0.2 not pasture	3 2 2	30.0 80.0 20.0 30.0 15.0
6-letter code lotped Jonat J	10 40 10 10 5 5 Percent vegetation cover: 100 nd hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N Y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aertal imagery 215. Sparsay vegetated conceive surface 12. Agrants inventeriories 23. Agrants inventeriories 34. Agridopes united oder 35. Ordinant dominant species plants 44. Right water table stumbel/bressed plants 45. Reduced for in titled soil 46. Right water table stumbel/bressed plants Welland if all dominant species across all stra	Lotus pedunculatus Juncus articulatus Juncus delfusus Juncus efficulatus Holcus Iaratus Ranunculatus Ranunculatus Isolepis Cerrus Isolepis Cerrus Isolepis Cerrus	Lotas Jointed Risth Leaffiess Risth Yorkshire Fog Creeping Buttercup 24. Water-stained leaves 25. Water-stained leaves 26. Drainage patterns 26. Ory session water table 37. Saturation in serial imagery 48. Genomerpile position 49. FAC-organization 40. FAC-Orga	Threat Status	FACW FACW FACW FAC FAC OBL MFE 2021 Wetland determination	y Y	Yes Yes Yes Pasture cover Vegetation cover This is. Wetland if all do across all strate FACWLOG James command species are rated OBL, are rated Obl.	Yes Yes Yes Yes 100 0.2 not pasture minant species rated OBL and/or rate = 100%	3 2 2 3 3 1	30.0 80.0 20.0 30.0 15.0
6-letter code lotped usuart usuart usuart usuart lotel usuart lotel lote	10 40 10 10 10 5 5 25 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1 1 1 1 1 10 10 10 10 10 10 100%	Dominant (50/20 rule) Y / N y Number of dominant species: 2 present, 0 = not present) 20. Inundation on aertal imagery 21s. Sparsely vegetated concave surface 2.5 Set coses 2. Aquatic inventionate 2. Aquatic inventionate 3. A riyardogen suitide odour 8. Oxidised microphere on roots 3.C. Reduced from in titled soil 4.A. High water table stunted/intressed plants Welfand if all dominant species across all stre (pass score = 100%)	Lotus pedunculatus Juncus articulatus Juncus delfusus Juncus efficulatus Holcus Iaratus Ranunculatus Ranunculatus Isolepis Cerrus Isolepis Cerrus Isolepis Cerrus	Lotas Jointed Rash Jointed Rash Jointed Rash Yorkshire Rag Oreejang Bullercup Secondary by developy and cer- 25. Water-stained leaves 3. Designey patterns 25. Water-stained leaves 4. Designey patterns 25. Burstanton in serial imagery 4. Secondary patterns 4. Senior septiment 4. Senior	Threat Status	FAC FACW FAC FAC FAC FAC FAC OBL. 1 MFE 2021 Wetland determination of the fact of the fac	y Y 100%	Ves Pasture cover Pasture cover Vegetation cover This is Wetland if all do across all strata FACW (pass commant special command special c	Yes Yes Yes Xelusion test: 20 0.2 not pasture minant species rated OBL and/or ore = 100% of so across all strata share. And the series of the series	3 2 2 3 3 1	30.0 80.0 20.0 30.0 15.0
6-letter code lotped unsit unsit unsit unsit unsit incident incide	10 40 10 10 10 5 5 25 Percent vegetation cover: 100 and trydrology and hydric soil (1= 1 1 1 1 1 1 1 10 10 10 10 10 10 10 10 1	Dominant (50/20 rule) Y / N Y Number of dominant species: 2 Passetin, 0 a rod pleasur) 20. Inundation on serbi imagery 21. Sparsety vegetants concave surface 23. Servets 23. Aquatic inventebrates 33. Aquatic inventebrates 34. Hydrogen suifile odour 38. Oxidate office control 38. Oxidate office control 39. Oxidate office control 39. Oxidate office control 30. Reduced for in little soil 44. High veget table stunded/threader plants Wetland if all dominant species across all stre (pass accros = 100%) Wetland if more than 50% of dominant specie 08L, FACW, or FAC using the 50/20 rule.	Lotus pedunculatus Juncus articulatus Juncus delfusus Juncus efficulatus Holcus Iaratus Ranunculatus Ranunculatus Isolepis Cerrus Isolepis Cerrus Isolepis Cerrus	Lottes Jointed Risch Leafless Rinch Yorkshire Fog Creeping Buttercap 24. Water-dained leaves 24. Water-dained leaves 25. Dynasson under table 37. Saturation in aerial imager 46. Sendow aguitant 46. Sendow aguitant 46. Frachese hummocks Hydric Boil? Pass Pass	Threat Status	FAC FACW FACW FAC OSL OSL OSL OSL 1 NFE 2021 Wetland determinant 1. Rapid test score: 2a. Dominance Test Score:	y 100% 100%	Yes Yes Pasture cover Pasture cover Vegetation cover This is. Wettand f all do across all strate FACW (pass sociomars species are rated DBL, it has for a rated of DBL, wettand f are rated bBL, wettand f more than the pass of the	Yes Yes Yes Xelusion test: 20 0.2 not pasture minant species rated OBL and/or ore = 100% of so across all strata share. And the series of the series	3 2 2 3 3 1	30.0 80.0 20.0 30.0 15.0
6-letter code losped unset uns	10 40 10 10 10 5 5 25 Percent vegetation cover: 100 not hydrology and hydric soil (1= 1 1 1 10 10 10 10 10 10 10 10 10 100%	Dominant (50/20 rule) Y / N Y Number of dominant species: 2 presents 0 = not present) St. Insudation on areal imagery 25. Insudation on areal imagery 25. Search year of the search on a real imagery 25. Search year of the search on a real imagery 25. Search of the search on a real imagery 25. Search of the search on a real imagery 25. Reduced one on a real imagery 26. Reduced one on a real imagery 27. Reduced one on a real imagery 28. Reduced one on the search of the search of the search on a real image of the search	Lotus pedunculatus Juncus articulatus Juncus delinus Juncus delinus Policus faretus Pedecus fa	Lotas Jointed Fash Jointed Fash Todathire Toda	Threat Status	FAC FACW FACW FACW FAC FACW FAC FACW FAC	y 100% 2.00	Ves Pasture cover Pasture cover Vegetation cover This is Wetland if all do across all strata FACW (pass commant special command special c	Yes Yes Yes Yes 100 100 0.2 not pasture minant species rated OBL and/or ore = 100%) than 50% of s across all strata FACW, or FAC Using 100 100 100 100 100 100 100 10	2 2 3 3 1 1 1 Pass	30.0 80.0 20.0 30.0 15.0
C-letter code lotped unant unant lotter lott	10 40 10 10 10 5 5 25 Percent vegetation cover: 100 nd try drology and hydric toll (1= 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dominant (50/20 rule) Y / N Y Number of dominant species: 2 Passerin, 0 and pleasuri) 20. Inundation on serial insagery 216. Spersory vegetants concave surface 21. Spersory vegetants 22. Spersory vegetants 23. August inventoriates 24. High vegetant species across all stre (pass across across all s	Lotus pedunculatus Juncus articulatus Juncus articulatus Juncus efficulatus Holicus famitus Ransuculus Ransuculus faoleptis corrus faoleptis corrus ta rated OBL and/or FACW s across all strata are rated	Lotas Jointed Risth Leafless Risch Yorkshire Fog Creeping Butterup Creeping Butterup 24. Water-stained leaves 25. Water-stained leaves 26. Drainage patterns 27. Butterup 27. Butterup 28. The Company of the Company 28. Drainage patterns 28. Drainage patterns 28. Drainage patterns 28. Drainage patterns 28. Pass 29. Pass Pass Pass No Pass	Threat Status	FACW FACW FACW FAC OBL OBL 1 NEE 2021 Wettand determination 1. Rapid test score: 2a. Dominance Test Score: 3. Dominance + Prev. 4a. Indicators of	y y y 100% 100% 2.00 alence	Yes Yes Pasture cover Pasture cover Vegetation cover This is. Wettand if all do across all strata FACW (pass sou domainst specie are rated OBL, the Sou Cover cove	Yes Yes Yes Yes Xclusion test: 20 100 0.2 not pasture minant species rated OBL and/or rore = 100% of s across all strata than 50% of s across all strata delucators. XO (Fail)	2 2 3 3 1 1 Passe Pass Passe Both Passes Hydrology	30.0 80.0 20.0 30.0 15.0

Plot Number		3									
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevalence)
juneff	40	у	Juncus effusus	Leafless Rush		FACW		Yes	Yes	2	80.0
junart	25	у	Juncus articulatus	Jointed Rush		FACW		Yes	Yes	2	50.0
lotped	10		Lotus pedunculatus	Lotus		FAC	Y			3	30.0
plalan	10		Plantago lanceolata	Narrow-leaved Plantain		FACU	Y			4	40.0
pasdil	2		Paspalum dilatatum	Paspalum		FACU	Y			4	8.0
cenuni	5		Centella uniflora	Centella		FACW				2	10.0
cyndac	2		Cynodon dactylon	Bermuda Grass		FACU				4	8.0
pruvul	2		Prunella vulgaris	Selfheal		FACU				4	8.0
belper	2		Bellis perennis	Bellis Daisy		FACU				4	8.0
Number of species: 9	Percent vegetation cover: 98	Number of dominant species: 2									
OPTIONAL Indicators of wetla	and hydrology and hydric soil (1 =										
Primary hydrology indicators				Secondary hydrology indicat	tors						
1A. Surface water		2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture e	xclusion test:		
1B. Groundwater <30 cm		2H. Sparsely vegetated concave surface		2L. Drainage patterns							
1C. Soil saturation «30 cm	1	21. Salt crust						Pasture cover	22		
2A. Water marks		2J. Aquatic invertebrates		3E. Dry-season water table							
				3F. Saturation in aerial imagery				Vegetation	98		
2B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position				cover			
2C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aguitard					4489796		
2D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is	not pasture		
2E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks							
2F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?:		1					
Clarkson 2013						MFE 2021					1
Wetland vegetation determina	ition					Wetland determination	on				
1. Rapid test score:	100%	Wetland if all dominant species across all strate (pass score = 100%)	ta rated OBL and/or FACW	Pass		1. Rapid test score:	100%	Wetland if all dor across all strata FACW (pass so	rated OBL and/or	Pass	
2a. Dominance Test Score:	100%	Wetland if more than 50% of dominant species OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Pass		2a. Dominance Test Score:	100%		than 50% of s across all strata FACW, or FAC using	Pass	
2b. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	2.47	Wetland if PI ≤ 3 around 3.0 shoul other wetland inc	ld be used alongside	Pass	
3. Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev	alence			Passes Both	
4. Prevalence Index Result:	2.5	Wetland if PI ≤ 3.0, but values around 3.0 showetland indicators.	uld be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or N	IO (Fail)	Passes Hydrology Test	
Is it a wetland?		It's wetland vegetation	<u>n!</u>			4b. Indicators of hydric soil present?	Yes	YES (Pass) or N	IO (Fail)	Passes Soil Test	
						Is it a wetland?		It's a W	etland under the R	MA!	l

Plot Number			1								
6-letter code	% Cover	tre of wetland Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevalence
macrub	40	y	Machaerina rubiginosa	Baumea	Not Threatened	OBL		Yes	Yes	1	40.0
junart	30	у	Juncus articulatus	Jointed Rush		FACW		Yes	Yes	2	60.0
juneff	10		Juncus effusus	Leafless Rush		FACW				2	20.0
hollan	5		Holcus lanatus	Yorkshire Fog		FAC	Y			3	15.0
lotped	5		Lotus pedunculatus	Lotus		FAC	Y			3	15.0
cenuni	2		Centella uniflora	Centella		FACW				2	4.0
blemin	4		Blechnum minus	Swamp Kiokio	Not Threatened	FACW OBI				2	8.0
sphagn Number of species: 8	Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Number of dominant species: 2	Sphagnum species			OBL				1	4.0
	ind nydrology and nydric soll (1 =	present, u = not present)									
Primary hydrology indicators		Toronto de la constanta de la		Secondary hydrology indicat	ors						
1A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture ex	xclusion test:		
1B. Groundwater <30 cm	1	2H. Sparsely vegetated concave surface		2L. Drainage patterns				Pasture cover	10		
1C. Soil saturation <30 cm		2l. Salt crust		3E. Dry-season water table							
2A. Water marks		2J. Aquatic invertebrates		3F. Saturation in aerial imagery				Vegetation	100		
2B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position				cover	100		
2C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aguitard					0.1		
2D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is r	not pasture		
2E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks							
2F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?:		1					
Clarkson 2013				nyunc sonr.		MFE 2021					
Wetland vegetation determina	tion					Wetland determination	on				
1. Rapid test score:	100%	Wetland if all dominant species across all stra (pass score = 100%)	ata rated OBL and/or FACW	Pass		1. Rapid test score:	100%	Wetland if all dor across all strata FACW (pass sco	rated OBL and/or	Pass	
2a. Dominance Test Score:	100%	Wetland if more than 50% of dominant specie OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Pass		2a. Dominance Test Score:	100%		than 50% of s across all strata FACW, or FAC using	Pass	
2b. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	1.66	Wetland if PI ≤ 3 around 3.0 should other wetland independent	d be used alongside	Pass	
3. Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev	alence			Passes Both	
4. Prevalence Index Result:	1.7	Wetland if PI ≤ 3.0, but values around 3.0 sho wetland indicators.	ould be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or N	IO (Fail)	Passes Hydrology Test	
Is it a wetland?		It's wetland vegetation	<u>n!</u>			4b. Indicators of hydric soil present?	Yes	YES (Pass) or N	IO (Fail)	Passes Soil Test	
						Is it a wetland?		<u>It's a W</u>	etland under the R	WA!	

		- 4									
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	Points
		Somman (So 20 rais) 1 7 14			Timedi Otalas		species	OBL, FACW	FAC	ocore (i revalence)	(Prevalence)
juneff	10 10		Juncus effusus	Leafless Rush		FACW FAC				2	20.0 30.0
lotped isopro	20	v	Lotus pedunculatus Isolepis prolifera	Lotus Three Square	Not Threatened	OBL	,	Yes	Yes	1	20.0
junart	40	ý	Juncus articulatus	Jointed Rush		FACW		Yes	Yes	2	80.0
lolper ranrep	5 5		Lolium perenne Ranunculus repens	Perennial Rye Grass Creeping Buttercup		FACU FAC	Y			3	20.0 15.0
blemin	5		Blechnum minus	Swamp Kiokio	Not Threatened	FACW				2	10.0
hollan	5		Holcus lanatus	Yorkshire Fog		FAC	Y			3	15.0
pasdil isocer	5		Paspalum dilatatum Isolepis cernua	Paspalum		FACU OBL	Y			4	20.0 5.0
	-										
Number of species: 10	Percent vegetation cover: 110	Number of dominant species: 2									
OPTIONAL Indicators of wetla	nd hydrology and hydric soil (1 =	present, 0 = not present)		Consideration to design							
1A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves	itors			Pasture e	exclusion test:		
1B. Groundwater <30 cm		2H. Sparsely vegetated concave surface		2L. Drainage patterns				Pasture cover	25		
1C. Soil saturation <30 cm		2I. Salt crust		3E. Dry-season water table					25		
2A. Water marks		2J. Aquatic invertebrates		3F. Saturation in aerial imagery				Vegetation	110		
2B. Sediment deposits 2C. Drift deposits		3A. Hydrogen sulfide odour 3B. Oxidised rhizosphere on roots		4B. Geomorphic position				cover	7272727		
2D. Algal mat/crust		3C. Reduced Iron		4C. Shallow aquitard 4D. FAC-neutral test					not pasture		
2E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks				71110 10	not pusture		
2F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?:		1					
Clarkson 2013						MFE 2021					
Wetland vegetation determina	tion	1		1		Wetland determination	on	Wetland if all do			
1. Rapid test score:	100%	Wetland if all dominant species across all stra (pass score = 100%)	ita rated OBL and/or FACW	Pass		1. Rapid test score:	100%	across all strata FACW (pass scr	rated OBL and/or ore = 100%)	Pass	
2a. Dominance Test Score:	100%	Wetland if more than 50% of dominant specie OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Pass		2a. Dominance Test Score:	100%	are rated OBL, I the 50/20 rule.	s across all strata FACW, or FAC using	Pass	
2b. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	2.14	Wetland if PI ≤ 3 around 3.0 shou other wetland in	ld be used alongside	Pass	
3. Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev	alence			Passes Both	
4. Prevalence Index Result:	2.1	Wetland if PI ≤ 3.0, but values around 3.0 sho wetland indicators.	ould be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or N	NO (Fail)	Passes Hydrology Test	
Is it a wetland?		It's wetland vegetation	<u>n!</u>			4b. Indicators of hydric soil present?	Yes	s YES (Pass) or NO (Fail)		Passes Soil Test	
						Is it a wetland?		<u>It's a W</u>	Vetland under the R	MA!	
			-								
Plot Number		5									
6-letter code	% Cover	5 Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevalence)
6-letter code	10	Dominant (50/20 rule) Y / N	Juncus effusus	Leafless Rush	Threat Status	FACW		OBL, FACW	FAC	Score (Prevalence)	(Prevalence) 20.0
6-letter code juneff junart	10 20	Dominant (50/20 rule) Y / N	Juncus effusus Juncus articulatus	Leafless Rush Jointed Rush	Threat Status	FACW FACW		Dominant Species is OBL, FACW	FAC Yes	2 2	(Prevalence) 20.0 40.0
6-letter code juneff junart hollan ranrep	10 20 35 10	Dominant (50/20 rule) Y / N	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup	Threat Status	FACW FACW FAC FAC		OBL, FACW	FAC	2 2 3 3	20.0 40.0 105.0 30.0
6-letter code juneff junart hollan ranrep pruvul	10 20 35 10 2	Dominant (50/20 rule) Y / N Y Y	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal	Threat Status	FACW FACW FAC FAC	y	OBL, FACW	FAC Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0
6-letter code juneff junert bollan ranrep pruvul pasdil	10 20 35 10 2 2	Dominant (50/20 rule) Y / N	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal Paspalum	Threat Status	FACW FACW FAC FAC FACU FACU		OBL, FACW	FAC Yes	2 2 3 3	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code juneff junart hollan ranrep pruvul	10 20 35 10 2	Dominant (50/20 rule) Y / N Y Y	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal	Threat Status	FACW FACW FAC FAC	y	OBL, FACW	FAC Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0
6-letter code Lineff Linest Innest I	10 20 35 10 2 20 3 3	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal Paspalum	Threat Status	FACW FACW FAC FAC FACU FACU	y	OBL, FACW	FAC Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code Juneff Junart hollan rannep pruval pasdi perhyd Number of species: 7	10 20 35 10 2 2 20 3	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Yorkshire Fog Crepting Buttercup Selfheal Paspalum Water Papper	Threat Status	FACW FACW FAC FAC FACU FACU	y	OBL, FACW	FAC Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code Janest Innest holian rannep pruvul pasdi pashi Number of species: 7 OPTIONAL indicators of wetla Primary lydrology indicators.	10 20 35 10 2 2 20 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3 present, 0 = not present)	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal Paspalum Water Pepper	Threat Status	FACW FACW FAC FAC FACU FACU	y	Yes	Yes Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code sarseff sarset boilsin carreno portural passifi perhyd Option of species: 7 OptioNAL indicators of weth Primary hydrology indicators 1.8 Surface weth	10 20 35 10 2 2 20 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. hundation on areatel imagery	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Yorkshire Fog Creeping Buttercup Selfheal Paspalum Water Pepper	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Yes Pasture ex	Yes Yes Yes Colusion test:	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code uneff unert brotelin rarea postpol muse of species: 7 Olst ONAL indicators of wetle chansy by office office 1A. Surface water 1A. Surface water	10 20 35 10 2 2 20 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 =	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 9 mol present) 20. Inundation on aerial imagery 22. Inundation on aerial imagery	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leefless Rush Jointed Rush Vorkshire Fog Creeping Buttercup Selfhead Paspalum Water Papper Water Papper Secondary hydrology Indicat 2K. Water-state leaves L. Drahage patterns	iors	FACW FACW FAC FAC FACU FACU	y	Yes	Yes Yes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code uneff Jarrart Dealin Jarrart Dealin Jarrart Dealin Jarrare Dealin Jarrare Jarrar	10 20 35 10 2 2 30 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1)	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. hundation on areatel imagery	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Jointed Rush Vorkshire Fog Creeging Buttercup Selfheal Paspalum Water Papper Secondary hydrology Indicat 2K. Water stated leaves 3L. Draksage patterns Lib. Dryssage water table	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Yes Pasture ex	Yes Yes Yes Xes Xes	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code aneff danat dana	10 20 35 10 2 2 30 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1)	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. hundation on aerial imagery 21. Sparset yvegstade concave surface 23. Agrants inventerbrate 23. Agrants inventerbrate 23. Agrants inventerbrate 23. Agrants decoder	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leefless Rush Jointed Rush Vorkshire Fog Creeping Buttercup Selfhead Paspalum Water Papper Water Papper Secondary hydrology Indicat 2K. Water-state leaves L. Drahage patterns	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Yes Yes Pasture ex Pasture cover Vegetation cover	Yes Yes Yes Colusion test: 55	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code sareff sareart bottom carreep orthyd named of species: 7 Olar 10 ML, Indicators of swetch (M. Surface water 16. Good sarearion of de one 16. Sold sarearion of de one 16. Sold sarearion of de one 28. Sedment deposits 28. Sedment deposits 29. Ont deposits	10 20 35 10 2 2 30 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 ***********************************	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Johnsd Rush Vorkshire Fog Oreiging Buttercup Selfmeal Posspalar Posspalar Posspalar Visiter Popper Selfmeal Posspalar Visiter Popper Secondary Bylandery andrea Schotter Popper Secondary Bylandery andrea Schotter Popper Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Sec	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Pasture expension of the cover	Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code anett danet dane	10 20 35 10 2 2 30 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. Inundation on serial insigery 216. Sparsety vegetated concave surface 22. Serious 12. Sparsety inventionates 23. Agrants inventionates 23. Agrants divertificates 33. Network inventionates 34. Network inventionates 35. Reduced for on nosts 56. Reduced for on nosts	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Vorkshire Leafless Creening Reflectuag Creening Reflectuag Desposition Water Papper Water Papper Water Stated Rusve 25. Water stated Rusve 25. Driskspap gatterns 25. Dryssesson water table 95. Saturation in aerial imager, 46. Shadow squiters	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Pasture expension of the cover	Yes Yes Yes Colusion test: 55	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code arreft izrert broten carrep Ortod George George Number of species: 7 Ortot Ortod Ortot Ortog Ortog Ortot Ortog O	10 20 35 10 2 2 3 3 5 10 10 2 0 3 3 3 Percent vegetation cover: 100 nd hydrology and h	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3 Postering # Enrici presents Description on aerial imagery 28 Spersely replaced concress surface 18 Saferous 38 Hydrogen suffice odour 38 Hydrogen suffice odour 50 Reduced from instead od 50 Reduced from instead od	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Johnsd Rush Vorkshire Fog Oreiging Buttercup Selfmeal Posspalar Posspalar Posspalar Visiter Popper Selfmeal Posspalar Visiter Popper Secondary Bylandery andrea Schotter Popper Secondary Bylandery andrea Schotter Popper Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Bylandery Secondary Sec	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Pasture expension of the cover	Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code anett danet dane	10 20 35 10 2 2 20 3 3 Percent vegetation cover: 100 nd hydrology and hydra soil (1 = 1)	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. Inundation on serial insigery 216. Sparsety vegetated concave surface 22. Serious 12. Sparsety inventionates 23. Agrants inventionates 23. Agrants divertificates 33. Network inventionates 34. Network inventionates 35. Reduced for on nosts 56. Reduced for on nosts	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Vorkshire Leafless Creening Reflectuag Creening Reflectuag Desposition Water Papper Water Papper Water Stated Rusve 25. Water stated Rusve 25. Driskspap gatterns 25. Dryssesson water table 95. Saturation in aerial imager, 46. Shadow squiters	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Pasture expension of the cover	Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code aveil format for	10 20 35 10 2 2 3 3 5 10 10 2 10 3 3 3 Percent vegetation cover: 100 nd hydrology and	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3 Postering # Enrici presents Description on aerial imagery 28 Spersely replaced concress surface 18 Saferous 38 Hydrogen suffice odour 38 Hydrogen suffice odour 50 Reduced from instead od 50 Reduced from instead od	Juncus effusus Juncus articulatus Holcus lanatus Ranunculus repens Prunella vulgaris Paspalum dilatatum	Leafless Rush Jointed Rush Vorkshire Leafless Creening Reflectuag Creening Reflectuag Desposition Water Papper Water Papper Water Stated Rusve 25. Water stated Rusve 25. Driskspap gatterns 25. Dryssesson water table 95. Saturation in aerial imager, 46. Shadow squiters	iors	FACW FACW FAC FAC FAC FACU FACU FACU	y	Pasture expension of the cover	Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code parett parett parett parett parett politics parett politics parett politics parett politics parett politics parett	10 20 35 10 2 2 3 3 5 10 10 2 10 3 3 3 Percent vegetation cover: 100 nd hydrology and	Dominant (50/20 rule) Y / N Y Y Y Number of dominant species: 3 Postering # Enrici presents Description on aerial imagery 28 Spersely replaced concress surface 18 Saferous 38 Hydrogen suffice odour 38 Hydrogen suffice odour 50 Reduced from instead od 50 Reduced from instead od	Juncus efficulatus Juncus erficulatus Holicus lanatus Panuruculus repens Prunelle vulgaris Paspelum dilatatum Persicaria hydropiper	Leafless Rush Jointed Rush Vorkshire Leafless Creening Reflectuag Creening Reflectuag Desposition Water Papper Water Papper Water Stated Rusve 25. Water stated Rusve 25. Driskspap gatterns 25. Dryssesson water table 95. Saturation in aerial imager, 46. Shadow squiters	iors	FACW FACW FAC FAC FAC FAC FACU FACU FACU FACW FACW 1	y	Pasture over Pasture cover Vegetation cover Cover Weterd if all done	Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code ameti ameti brant brotell carren brot	10 20 35 10 2 2 30 35 10 4 2 3 3 Percent vegetation cover: 100 addity-droboys and hydrosom (1=1)	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) SS. hundation on aerial mapery 28. Spandy imperated conceive surface 28. Spandy imperated conceive surface 28. April of the surface 28. April of the surface 28. April of the surface 28. Checked via no still of the surface 38. Oxidized records in still of the surface 48. Till of the surface surf	Juncus efficiales Juncus erficidates Holicus fendus Ramuculus repens Promite videntis Reservative Provide videntis Persicaria hydropiper Persicaria hydropiper ta rated OBL and/or FACW	Leafless Rush Jorised Rush Vorkshire Fog Oreeping Buttercup Selfmed Paspalam Paspalam Water Papper Water Papper S. Despension Buttercup S. Despension Buttercup S. Despension Buttercup S. Despension Buttercup S. Drysseson water table The Saturation I active I active S. Drysseson water table The Saturation I active S. Drysseson water table S. Drysseson water table The Saturation I active S. Butter Self-I mager S. Butter Self-I mager S. Batter S. Batter Self-I mager S. Batter Self-I mager S. Batter Self-I mager S. Batter Se	iors	FACW FACW FAC FAC FAC FACU FACU FACU FACW FACW Wetland determination	y Y	Pasture over Pasture over Vegetation cover Vegetation across all strata fail donacross all strata face to dominant series from the company	Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4 4 2	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code anett Janett Jan	10 20 35 35 10 10 20 3 Percent vegetation cover: 100 d hydrology and hydric soil (1 = 1) 1	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 presents 0 a not present) 20. hundation on serial inagery 216. Species y vagisted concave surface 218. Species y vagisted concave surface 218. Species in wenter lates 22. Aquatic inventer lates 138. Oxidised inventer lates 139. Oxidised inventer lates 139. Oxidised inventer lates 130. Reduced for non stilled and 130. Reduced from in stilled and 140. Reduced from in stilled and 150. Reduced from in sti	Juncus efficiales Juncus erficidates Holicus fendus Ramuculus repens Promite videntis Reservative Provide videntis Persicaria hydropiper Persicaria hydropiper ta rated OBL and/or FACW	Leafless Rush Jointed Rush Vorshaft Page Creeping Bettercap Creeping Bettercap Responsim Water Papper Water Papper Secondary hydrology andeas 25. Water-stained leaves 25. Under Secondary Secondary Indicate 25. Dryssasse mater table 35. Saturation in settle Imager 46. Bender Rush 46. Resempths Bester 46. Frost-heave hummocks Hydric Best?	iors	FACW FACW FAC FAC FAC FACU FACU FACU FACW FACW FACW FACW FACW FACW FACW FACW	y Y Y 33%	Pasture ex- Pasture cover Pasture cover Vegetation cover C This in Wethard if all donarrased all strata across all strata across all strata across all strata across all strata packets dominant species are rated OBL, Fither 50/20 in the 50/20 in Pic 3 wether Wethard if Pic 3 wether Wethard	Yes Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4 4 4 2	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code Janet Jane	10 20 35 10 2 2 35 10 2 3 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1) 1 1 1 67%	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 26. Inundation on asrial inapery 28. Sparset years and species: 3 26. Inundation on asrial inapery 28. Sparset workers 28. Sparset workers 28. Against inventionate 29. Against inventionate 39. Against inventionate 30. Against i	Juncus efficiales Juncus erficidates Holicus fendus Ramuculus repens Promite videntis Reservative Provide videntis Persicaria hydropiper Persicaria hydropiper ta rated OBL and/or FACW	Leafless Rush Jointed Rush Vorshire Fog Creeping Bettercup Soffmen Soffmen Water Papper Water Papper 25. Water stained leaves 25. Water stained leaves 25. Water stained leaves 26. Under Soffmen Soff	iors	FACW FACW FACW FAC FAC FACU FACU FACU FACU FACU FACU F	y y y 1 33% 67%	Pasture on Pasture cover Vegetation Cover	Yes Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4 4 4 2 2	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code aveil format for	10 20 38 38 10 10 20 3 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1) 1 1 tion 33% 67%	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. Invandation on serial inspery 216. Speared vegetated concave surface 21. Speared vegetated concave surface 21. Against inventedrates 32. Against inventedrates 33. Indigent of the species of the	Juncus effususe Juncus erficulatus Holicus lanatus Ranunculus repens Prunsila vidgaris Pespalum dilatatum Persacaria hydropiper at rated OBL and/or FACW s across all strata are rated	Leafless Rush Jointed Rush Vorshift of Rush Vorshift of Rush Leaflest of Rush Leaflest of Rush Rush Rush Rush Rush Rush Rush Rush	iors	FACW FACW FACW FAC FAC FACU FACU FACU FACU FACU FACU F	y y y 1 33% 67%	Pasture on Pasture cover Vegetation Cover	Yes Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 3 3 4 4 2 2	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code proff Ameri Amer	10 20 35 10 2 2 35 35 10 2 2 3 3 3 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1) 1 1 tion 33% 67%	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, () = not present) 26. Nundation on antal inapery 28. Sparsay wegsted concave surface 28. Sparsay wegsted concave surface 28. Sparsay wegsted concave surface 28. A editor in west of the sparsay of	Juncus effusus Juncus erriculatus Holicus frankus Ranunculus repens Promelia valgaris Fasspalam distilius ta rated OBL and/or FACW sa across all strata are rated	Leafless Rush Jointed Rush Vorshire Fog One-pairs Betterup Soffmen Soffmen Water Papper Water Papper 28. Water stated leaves 24. Water stated leaves 24. Someonity hydrology redicat 25. Paterston is acrial imagery 46. Someonity laydrology select 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydrology 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydrology 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydro	iors	FACW FACW FAC FAC FAC FAC FACU FACU FACU FACW FACW FACW FACW FACW FACW FACW FACW	y	Pasture ex- Pasture cover Vegetation cover This in Wettard if all do- across all strate FACW (pass soo Wettard if more to do- do-mark special to 50 c/ Wettard if 91 s 3 acround 3.0 should other wetland ind	Yes Yes Yes Yes 100 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 105	2 2 3 3 4 4 4 2 Fall Pass Passe Both	20.0 40.0 105.0 30.0 8.0 80.0
6-letter code unreff un	10 20 35 10 2 2 35 35 10 2 2 3 3 3 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 = 1) 1 1 tion 33% 67%	Dominant (50/20 rule) Y / N Y Y Number of dominant species: 3 present, 0 = not present) 20. Inundation on asrial inagery 218. Sparset years and species: 3 25. Inundation on asrial inagery 218. Sparset years are species: 3 25. Agrassic inventionals 21. Agrassic inventionals 22. Agrassic inventionals 23. Agrassic inventionals 24. Agrassic inventionals 25. Agrassic inventionals 26. Agrassic inventiona	Juncus effusus Juncus erriculatus Holicus frankus Ranunculus repens Promelia vidgaris Fasspalam distilius ta rated OBL and/or FACW sa across all strata are rated	Leafless Rush Jointed Rush Vorshire Fog One-pairs Betterup Soffmen Soffmen Water Papper Water Papper 28. Water stated leaves 24. Water stated leaves 24. Someonity hydrology redicat 25. Paterston is acrial imagery 46. Someonity laydrology select 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydrology 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydrology 26. Paterston in acrial imagery 26. Someonity laydrology 26. Someonity laydro	iors	FACW FACW FAC FAC FAC FAC FAC FACU FACU FACW FACW FACW FACW FACW FACW FACW FACW	y Y Y 33% 67% 2.89	Pasture ex- Pasture cover Pasture cover Vegetation cover C This is FACW (pass soot see a factor of the Suzo o	Yes Yes Yes Yes 100 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 100 105 105	2 2 3 3 4 4 2 Fall Fass Passe Both Passes Both Passes Sol Test	20.0 40.0 105.0 30.0 8.0 80.0

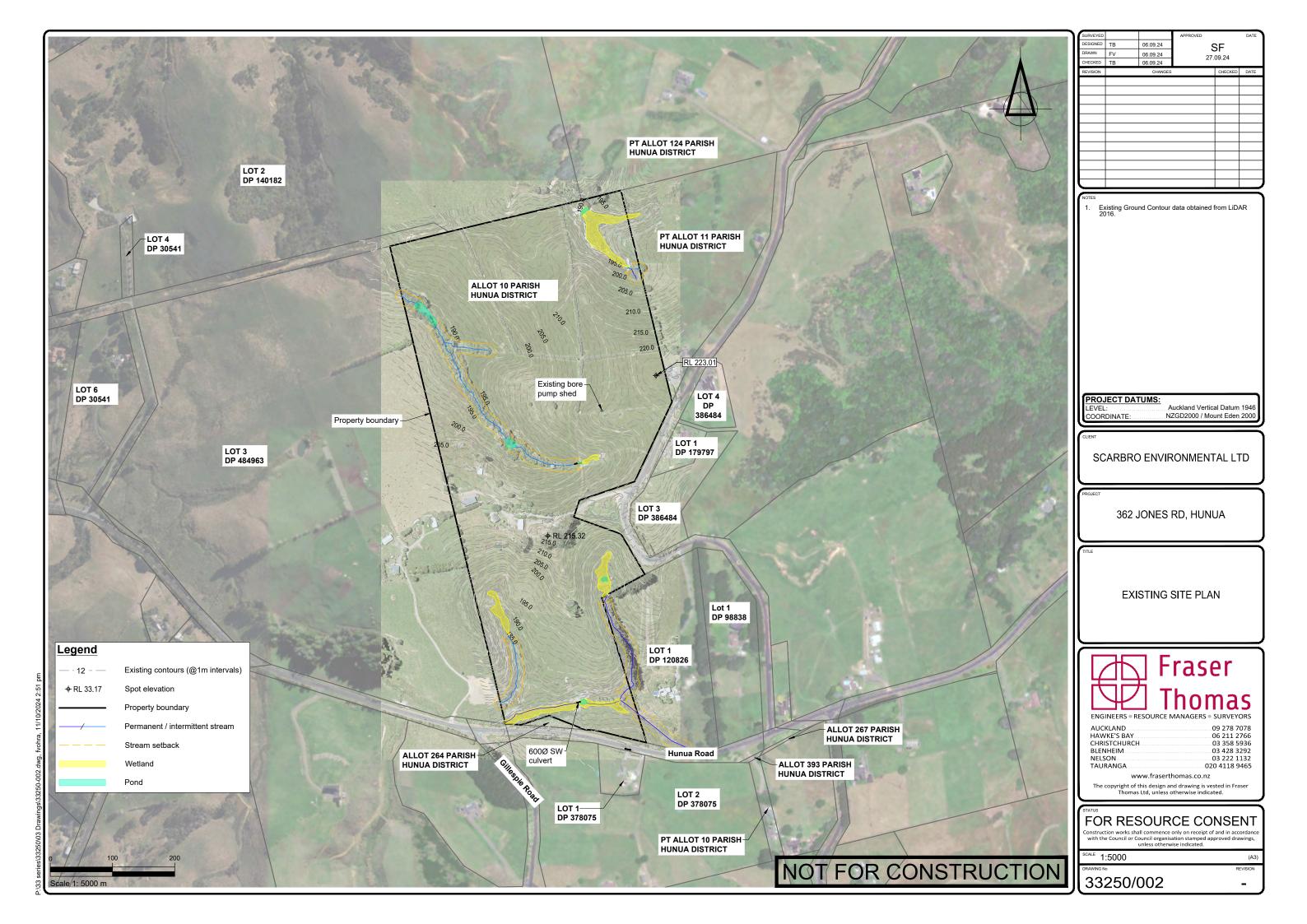
6-letter code				Common Name	Threat Status	Wetland Status	Pasture	Dominant			Points
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name					Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	Points
	/a Cover	Dominant (30/20 rule) 1 / N	Species Name	Common Name	Tilleat Status	Wetland Status	species	OBL, FACW	FAC	Score (Frevalence)	(Prevale
nedg	20	v	Juncus edgariae	Wiwr	Not Threatened	FACW		Yes	Yes	2	40.
ped	10	,	Lotus pedunculatus	Lotus		FAC	Y			3	30.
pro	35	V	Isolepis prolifera	Three Square	Not Threatened	OBL		Yes	Yes	1	35.
rep	5	,	Ranunculus repens	Creeping Buttercup	Not miredianed	FAC		100	100	3	15
rhyd	5		Persicaria hydropiper	Water Pepper		FACW				2	10.
sdil	5		Paspalum dilatatum	Paspalum		FACU	Y			4	20.
llan	5		Holcus lanatus	Yorkshire Fog		FAC	Y			3	15.
nart	15		Juncus articulatus	Jointed Rush		FACW	,			3	30.
idit	10		Juncus areculatus	Joined Rusii		TACW					30.
umber of species: 8	Percent vegetation cover: 100	Number of dominant species: 2									
PTIONAL Indicators of wetlan	Percent vegetation cover: 100	present, 0 = not present)									
PTIONAL Indicators of wetlan	id nydrology and nydric soli (1 =	present, 0 = not present)									
rimary hydrology indicators				Secondary hydrology indicate	ors						
A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture ex	clusion test:		
B. Groundwater <30 cm		2H. Sparsely vegetated concave surface		2L. Drainage patterns							
C. Soil saturation <30 cm		2l. Salt crust		3E. Dry-season water table				Pasture cover	20		
A. Water marks		2J. Aquatic invertebrates									
				3F. Saturation in aerial imagery				Vegetation	100		
B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position				cover			
C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aquitard					0.2		
D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is r	not pasture	1	
. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks							
Surface soil cracks		4A. High water table stunted/stressed plants		4E. Prosidicave numinocks		1					
		4A. High water table stuffled/stressed plants		Hydric Soil?:							
larkson 2013						MFE 2021					
etland vegetation determinati	ion					Wetland determination	on				
		Wetland if all dominant species across all stra	to rated OBL and/or EACW					Wetland if all don	minant species		
Rapid test score:	100%	(pass score = 100%)	ita rated OBL and/or FACW	Pass		1. Rapid test score:	100%	across all strata	rated OBL and/or	Pass	
		(pass score = 100%)						FACW (pass sco	re = 100%)		
								Wetland if more t	N F00/ -4		
		Wetland if more than 50% of dominant species	e across all strata are roted	I	1	2a. Dominance Test			nan 50% or across all strata		l
ta. Dominance Test Score:	100%	OBL, FACW, or FAC using the 50/20 rule.	Delta an engry and recommen	Pass	1	Score:	100%	are rated OP!	ACW, or FAC using	Pass	l
		ODE, I ACIV, OF FAC USING the 50/20 fule.		1	1	Score:		the 50/20 rule.	ACTV, UT FAC USING		
		<u> </u>									
						Oh December		Wetland if PI ≤ 3.	.0, but values		
b. FAC dominants	0%	Are all or most dominants FAC?		No	1	2b. Prevalence	1.95	around 3.0 should	d be used alongside	Pass	l
						Index Score:		other wetland ind	licators		
Indicators of budgic soil											
Indicators of hydric soil nd wetland hydrology	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev	alongo			Passes Both	
nd wetland flydrology	165	I LS (Fass) of NO (Fas)		rass		3. Dominance + Frev	alence			rasses botti	
resent?						de Indicators of	_				
Burney Burney		Wetland if PI ≤ 3.0, but values around 3.0 sho	uld be used alongside other			4a. Indicators of		VEO (D.)	0 (5 1)	Passes Hydrology	
Prevalence Index Result:	2.0	wetland indicators.		Pass		wetland hydrology	Yes	YES (Pass) or N	O (Fail)	Test	
						present?					
		the state of the state of				4b. Indicators of					
it a wetland?		It's wetland vegetation	<u>n!</u>			hydric soil present?	Yes	YES (Pass) or N	O (Fail)	Passes Soil Test	
						,					
						le it a watland?		It'c a W	otland under the Ri		
						Is it a wetland?		<u>It's a W</u>	etland under the Ri	WA!	
						Is it a wetland?		<u>It's a W</u>	etland under the Ri	<u>MA!</u>	
						Is it a wetland?		<u>It's a W</u>	etland under the Ri	MA!	
Plot Number		7	1			Is it a wetland?		<u>It's a W</u>	etland under the Ri	MA!	
Plot Number		7						It's a W	Dominant Species	MA!	
Plot Number 6-letter code	% Cover	7 Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status		Pasture	Dominant	Dominant Species		Point
	% Cover	7 Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	is it a wetland? Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW,	Score (Prevalence)	(Prevale
6-letter code	% Cover	7 Dominant (50/20 rule) Y / N	Species Name Ranunculus repens		Threat Status			Dominant Species is	Dominant Species is OBL, FACW,		
6-letter code		7 Dominant (50/20 rule) Y / N		Common Name Creeping Buttercup Passalum	Threat Status	Wetland Status		Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	(Prevale
6-letter code anrep asdil	20 15	7 Dominant (50/20 rule) Y / N	Ranunculus repens Paspalum dilatatum	Creeping Buttercup Paspalum	Threat Status	Wetland Status FAC FACU	species	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	(Prevale 60.0
6-letter code anrep asdil lalan	20 15 5	7 Dominant (50/20 rule) Y / N	Ranunculus repens Paspalum dilatatum Plantago lanceolata	Creeping Buttercup Paspalum Narrow-leaved Plantain	Threat Status	Wetland Status FAC FACU FACU	y Y	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence) 3 4 4	60.0 60.0 20.0
6-letter code anrep asdil lalan	20 15	7 Dominant (50/20 rule) Y / N	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus	Creeping Buttercup Paspalum	Threat Status	Wetland Status FAC FACU FACU FAC	species	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence)	60.4 60.4 20.4
6-letter code inrep asdil alan tped osax	20 15 5 5	7 Dominant (50/20 rule) Y / N	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC	y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3	60.1 60.1 20.1 15.1
6-letter code innep assdi alan tped ossax neff	20 15 5 5 2 2	7 Dominant (50/20 rule) Y / N	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FAC FAC FAC	y Y Y	Dominant Species is	Dominant Species is OBL, FACW,	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0
6-letter code sinrep ssdil slatin tiped osax neiff	20 15 5 5 2 2 25	7 Dominant (50/20 rule) Y / N y y	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
	20 15 5 5 2 2	7 Dominant (50/20 rule) Y / N y y	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FAC FAC FAC	y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale
6-letter code asdi aslan dped osax eneff elper rep	20 15 5 5 2 2 25 25 3	y y	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
6-letter code annep assdi assdi assam apped ossax reaff aper irrep umber of species: 8	20 15 6 5 2 2 25 25 3	y y Y Number of dominant species: 2	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
6-letter code annep assdi assdi assam apped ossax reaff aper irrep umber of species: 8	20 15 6 5 2 2 25 25 3	y y Y Number of dominant species: 2	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
6-letter code annep assdi assdi assam apped ossax reaff aper irrep umber of species: 8	20 15 5 5 2 2 25 25 3 3 Percent vegetation cover: 100 dt hydrology and hydric soil (1 =	Y Y Number of dominant species: 2 present, 0 = not present)	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
6-letter code annep asdi asdi alah dped ossax neff deper vep umber of species: 8 PTIONAL indicators of wetlan imary hydrology indicators	20 15 5 5 2 2 25 25 3 3 Percent vegetation cover: 100 dt hydrology and hydric soil (1 =	Y Y Number of dominant species: 2 present, 0 = not present)	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass White Clover	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60.1 60.1 20.1 15.1 6.0 50.1
6-letter code arrep assist ass	20 15 5 5 2 2 25 25 3 3 Percent vegetation cover: 100 dt hydrology and hydric soil (1 =	y Y Number of dominant species: 2 present, 0 = not present) 20. hundation on aerial inagery	Ranunculus repens Paspalum dilatatum Plantago lanceolata Lotus pedunculatus Leontodon saxatilis Juncus effusus Lolium perenne	Creeping Buttercup Paspalum Narrow-leaved Plantain Lotus Leafless Rush Perennial Rye Grass White Clover Secondary hydrology Indicat 2K. Water-stained leaves	Threat Status	Wetland Status FAC FACU FACU FAC FAC FAC FAC FAC FAC FACW FACU	y Y Y	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC Yes	Score (Prevalence) 3 4 4 3 3 2 2	(Prevale 60. 60. 20. 15. 6.0 50.
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6-letter code preop sodd sodd sold sold sold sold sold sold	20 15 5 5 2 2 25 25 3 Percent vegetation cover: 100 nd hydrology and hydric soil (1 =	Y. Y. Y. Number of dominant species: 2 present, 2e not present) 26. Inundation on aerial imagery 215. Separally vegation domicine surface 21. Saft crust 21. Saft crust 21. Apparties more surface 21. Reduced into in little soil 44. High vater table sumindhireased plants Wetland if all dominant species across all stre (pass score = 100%)	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Lotus pedunculatus Leonicoda assailis Janous effusus Lotus pedunculatus Janous effusus Lotus perene Trifolium repens	Creeging Buttercap Paspalum Narrow-leaved Partain Lotta Lotta Lanface Rush Perennial Rye Grass White Clover Scondary Invitations of the Control Material Rye Grass White Clover Scondary Invitations y Inflient 24. Water-stained leaves 25. Defining patterns 26. Defining patterns 27. Water-stained leaves 28. Defining patterns 29. Submitted in seed imagely 39. Submitted in seed imagely 49. Sachardian in seed imagely 40. Sachardian seed imagely 40. Sachardian seed imagely 40. Hot Control leaves 40. Hot Control leaves 40. Hot Control leaves 40. Hot Control leaves 41. Frost have hummocks Hydric Seet?	Threat Status	Wetland Status FACU FACU FACU FACU FACU FACU FACU FACU	y y y y y y y y y y y y y y y y y y y	Dominant Species is OBL_FACW Yes Pasture cover Vegetation cover Wetand if all doacross all strate FACW (pass cover) Wetand if more dominant species wetand if pic s are are down and so all the source of the	Dominant Species is GBL, FACW, FAC Yes Yes xelusion test: 53 100 0.53 is pasture minant species rated OBL and/or rate = 100% of a sarcoss all strata = ACW, or FAC using the usual strata = ACW, or FAC using the use of alongside the used alongside the used alongside to the used to the	Score (Prevalence) 3 4 4 3 3 2 4 4 4 Fall	(Prevale 60. 60. 20. 15. 6.0 50.
6-letter code prop add add add add add add add add add ad	20 15 5 5 2 25 25 3 Percent vegetation cover: 100 11 1 1 50%	Y Y Number of dominant species: 2 present of a not present of the present of th	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Lotus pedunculatus Leonicoda assailis Janous effusus Lotus pedunculatus Janous effusus Lotus perene Trifolium repens	Creeging Buttercup Paspulum Narrow-leaved Partain Lotta Lotta Leafies Rush Perennal Rya Grass White Clover Secondary Invited by Indiana 24. Water stained leaves 24. Water stained leaves 25. Drasses water table 37. Saturation in serial imagery 48. Company of the Company of the Company 48. Comp	Threat Status	Wetland Status FAC FACU FACU FAC FACW FACU FACU FACU FACU FACU FACU FACU FACU	y y y y y y y y y y y y y y y y y y y	Dominant Species is OBL. FACW Yes Pasture cover Pasture cover Vegetation cover This if Wettand if all doa across all strata FACW (pass soc dominant species are rated OBL, if the 50/20 rule.	Dominant Species is GBL, FACW, FAC Yes Yes xelusion test: 53 100 0.53 is pasture minant species rated OBL and/or rate = 100% of a sarcoss all strata = ACW, or FAC using the usual strata = ACW, or FAC using the use of alongside the used alongside the used alongside to the used to the	Score (Prevalence) 3 4 4 3 3 2 4 4 4 Fall	(Prevale 60. 60. 20. 15. 6.0 50.
6-letter code urrep assol asso	20 15 5 5 5 2 2 25 25 3 Percent vegetation cover: 100 d hydrotegy and hydric soil (1 = 1) 1 1 50%	Y Y Y Number of dominant species: 2 present, 0s not present) 20. Invadation on antal snapery 215. Survival control of the state of the	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Lotus pedunculatus Leonicoda assailis Janous effusus Lotus pedunculatus Janous effusus Lotus perene Trifolium repens	Creeging Buttercup Paspolum Narrow-leaved Partain Lotta Lotta Lotta Lotta Rath Perennial Rye Grass White Clover Secondary hydrology indicat 28. Water stained leaves 28. Water stained leaves 28. Delayage patrion 29. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 48. Commynial position 49. Salarotino in serial imagery 49. Factorial inside 49. Factorial in	Threat Status	Wetland Status FAC FACU FACU FACU FAC FAC FAC FACU FACU	900 S S S S S S S S S S S S S S S S S S	Dominant Species is OBL_FACW Yes Pasture cover Vegetation cover Wetand if all doacross all strate FACW (pass cover) Wetand if more dominant species wetand if pic s are are down and so all the source of the	Dominant Species is GBL, FACW, FAC Yes Yes xelusion test: 53 100 0.53 is pasture minant species rated OBL and/or rate = 100% of a sarcoss all strata = ACW, or FAC using the usual strata = ACW, or FAC using the use of alongside the used alongside the used alongside to the used to the	Score (Prevalence) 3 4 4 3 3 3 2 4 4 4 Fail	(Prevale 60. 60. 20. 15. 6.0 50.
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6-letter code urrep assol asso	20 15 5 5 5 2 2 25 25 3 Percent vegetation cover: 100 d hydrotegy and hydric soil (1 = 1) 1 1 50%	Y Y Y Number of dominant species: 2 present, 0s not present) 20. Invadation on antal snapery 215. Survival control of the state of the	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Lotus pedunculatus Leonidodi nasaaliis Janous effusus Lotus pedunculatus Janous effusus Lotus perene Trifolium repens	Creeging Buttercup Paspolum Narrow-leaved Partain Lotta Lotta Lotta Lotta Rath Perennial Rye Grass White Clover Secondary hydrology indicat 28. Water stained leaves 28. Water stained leaves 28. Delayage patrion 29. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 48. Commynial position 49. Salarotino in serial imagery 49. Factorial inside 49. Factorial in	Threat Status	Wetland Status FAC FACU FACU FACU FAC FAC FAC FACU FACU	900 S S S S S S S S S S S S S S S S S S	Dominant Species is OBL_FACW Yes Pasture cover Vegetation cover Wetand if all doacross all strate FACW (pass cover) Wetand if more dominant species wetand if pic s are are down and so all the source of the	Dominant Species is GBL, FACW, FAC Yes Yes xelusion test: 53 100 0.53 is pasture minant species rated OBL and/or rate = 100% of a sarcoss all strata = ACW, or FAC using the usual strata = ACW, or FAC using the use of alongside the used alongside the used alongside to the used to the	Score (Prevalence) 3 4 4 3 3 3 2 4 4 4 Fail	(Preval 60. 60. 20. 15. 6.0 50.
6-letter code prop social soci	20 15 5 5 5 2 2 25 25 3 Percent vegetation cover: 100 d hydrotegy and hydric soil (1 = 1) 1 1 50%	Y. Y. Y. Number of dominant species: 2 present, 2e not present) 26. Invadation on aerial imagery 215. Separally vegation concerve surface 21. Saft context 21.	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Loss pedurculatus Loss pedurculatus Surcus edifusus Lucius pedurculatus Surcus edifusus Lucium perenne Trifolium repens Trifolium repens ta rated OBL and/or FACW s	Creeging Buttercup Paspolum Narrow-leaved Partain Lotta Lotta Lotta Lotta Rath Perennial Rye Grass White Clover Secondary hydrology indicat 28. Water stained leaves 28. Water stained leaves 28. Delayage patrion 29. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 48. Commynial position 49. Salarotino in serial imagery 49. Factorial inside 49. Factorial in	Threat Status	Wetland Status FAC FACU FACU FACU FAC FAC FAC FACU FACU	900 S S S S S S S S S S S S S S S S S S	Dominant Species is OBL_FACW Yes Pasture cover Vegetation cover Wetand if all doacross all strate FACW (pass cover) Wetand if more dominant species wetand if pic s are are down and so all the source of the	Dominant Species is GBL, FACW, FAC Yes Yes xelusion test: 53 100 0.53 is pasture minant species rated OBL and/or per = 100% of a sarces all strata FACW, or FAC using the use of the use of alongside due used alongside due used alongside due used alongside due seed alongsid	Score (Prevalence) 3 4 4 3 3 3 2 4 4 4 Fail Fail Fail Fails Both	(Preval 60. 60. 20. 15. 6.0 50.
6-letter code integrated by the code of th	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Number of dominant species: 2 Present 0 = not present) 25. Invadation on serial imagery 24. Sparsily vegatated concave surface 25. Shartous 25. Anyonic invertebrates 35. Anytogon surface and the present of the present	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Loss pedurculatus Loss pedurculatus Surcus edifusus Lucius pedurculatus Surcus edifusus Lucium perenne Trifolium repens Trifolium repens ta rated OBL and/or FACW s	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status	Wetland Status FAC FACU FACU FACU FACU FACU FACU FACU	9	Dominant Species is OBL_FACW Yes Pasture e Pasture cover Vegetation cover Wethord if all doserous all strate packed if more dominant species FACW (pass so wethord if more dominant species the So/20 rule. Wethand if PI s 2 around 3.0 should gother wetland in the	Dominant Species is OBL, FACW, FAC SIGN STATE ST	Score (Prevalence) 3 4 4 3 3 2 4 4 4 5 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(Preval 60. 60. 20. 15. 6.1
6-letter code integrated by the code of th	20 15 5 5 5 2 2 25 25 3 Percent vegetation cover: 100 d hydrotegy and hydric soil (1 = 1) 1 1 50%	Y. Y. Y. Number of dominant species: 2 present, 2e not present) 26. Invadation on aerial imagery 215. Separally vegation concerve surface 21. Saft context 21.	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Loss pedurculatus Loss pedurculatus Surcus edifusus Lucius pedurculatus Surcus edifusus Lucium perenne Trifolium repens Trifolium repens ta rated OBL and/or FACW s	Creeging Buttercup Paspolum Narrow-leaved Partain Lotta Lotta Lotta Lotta Rath Perennial Rye Grass White Clover Secondary hydrology indicat 28. Water stained leaves 28. Water stained leaves 28. Delayage patrion 29. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 46. Commynial position 47. Salarotino in serial imagery 48. Commynial position 49. Salarotino in serial imagery 49. Factorial inside 49. Factorial in	Threat Status	Wetland Status FAC FACU FACU FACU FAC FAC FAC FACU FACU	900 S S S S S S S S S S S S S S S S S S	Dominant Species is OBL_FACW Yes Pasture cover Vegetation cover Wetand if all doacross all strate FACW (pass cover) Wetand if more dominant species wetand if pic s are are down and so all the source of the	Dominant Species is OBL, FACW, FAC SIGN STATE ST	Score (Prevalence) 3 4 4 3 3 3 2 4 4 4 Fail Fail Fail Fails Both	(Preval 60. 60. 20. 15. 6.1
6-letter code prop social soci	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Number of dominant species: 2 Present 0 = not present) 25. Invadation on serial imagery 24. Sparsily vegatated concave surface 25. Shartous 25. Anyonic invertebrates 35. Anytogon surface and the present of the present	Ranunculus repens Paspalum dilatatum Plantago Inaccelata Loss pedurculatus Loss pedurculatus Surcus edifusus Lucius pedurculatus Surcus edifusus Lucium perenne Trifolium repens Trifolium repens ta rated OBL and/or FACW s	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status	Wetland Status FAC FACU FACU FACU FACU FACU FACU FACU	9	Dominant Species is OBL_FACW Yes Pasture e Pasture cover Vegetation cover Wethord if all doserous all strate packed if more dominant species FACW (pass so wethord if more dominant species the So/20 rule. Wethand if PI s 2 around 3.0 should gother wetland in the	Dominant Species is OBL, FACW, FAC SIGN STATE ST	Score (Prevalence) 3 4 4 3 3 2 4 4 4 5 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(Preval 60. 60. 20. 15. 6.1
6-letter code prop acid acid acid acid acid acid acid acid	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Y Number of dominant species: 2 present, 0 = not present) 26. Invadation on aerdi mappy 28. Service version of the species of the spec	Ranunculus repens Paspalum dilatutum Plantago Incocelata Lotus peduruculatus Leonodorus assailis Leonodorus assailis Leonodorus assailis Leonodorus Trifolium repens Trifolium repens tata rated OBL and/or FACW s across all strata are rated	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FACW FACU FACU FACU FACU FACU FACU FACU FACU	Y	Dominant Species is OBL_FACW Yes Pasture cover Pasture cover This i Wettand if all doacross all strata FACW (pass soc dominant species are rated OBL_FACW Wettand if more dominant species are rated OBL_FACW Wettand if more Yes (Pass) or N	Dominant Species is OBL, FACW, FAC Yes Yes Yes 100 0.5 100	Score (Prevalence) 3 4 4 3 3 2 4 4 4 4 Fall Fall Fall Fall Falsses Hydrology Test	(Preval 60. 60. 20. 15. 6.0 50.
6-letter code rerep code code code code code code code code	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Number of dominant species: 2 Present 0 = not present) 25. Invadation on serial imagery 24. Sparsily vegatated concave surface 25. Shartous 25. Anyonic invertebrates 35. Anytogon surface and the present of the present	Ranunculus repens Paspalum dilatutum Plantago Incocelata Lotus peduruculatus Leonodorus assailis Leonodorus assailis Leonodorus assailis Leonodorus Trifolium repens Trifolium repens tata rated OBL and/or FACW s across all strata are rated	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status	Wetland Status FAC FACU FACU FACU FACU FACU FACU FACU	9	Dominant Species is OBL_FACW Yes Pasture e Pasture cover Vegetation cover Wethord if all doserous all strate packed if more dominant species FACW (pass so wethord if more dominant species the So/20 rule. Wethand if PI s 2 around 3.0 should gother wetland in the	Dominant Species is OBL, FACW, FAC Yes Yes Yes 100 0.5 100	Score (Prevalence) 3 4 4 3 3 2 4 4 4 5 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(Preval 60. 60. 20. 15. 6.0 50.
6-letter code prep godi soft lam ped doll lam ped ped doll lam ped ped doll lam lam ped doll lam lam ped doll lam lam lam lam lam lam lam lam lam l	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Y Number of dominant species: 2 present, 0 = not present) 26. Invadation on aerdi mappy 28. Service version of the species of the spec	Ranunculus repens Paspalum dilatutum Plantago Incocelata Lotus peduruculatus Leonodorus assailis Leonodorus assailis Leonodorus assailis Leonodorus Trifolium repens Trifolium repens tata rated OBL and/or FACW s across all strata are rated	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status ors	Wetland Status FAC FACU FACU FAC FAC FACW FACU FACU FACU FACU FACU FACU FACU FACU	Y	Dominant Species is OBL_FACW Yes Pasture e Pasture cover Vegetation cover This if Wettand if all dod across all strata FACW (pass soc dominant species are rated Obl_F, the So 270 rule. Wettand if more VES (Pass) or N	Dominant Species is OBL, FACW, FAC Yes Yes Yes 100 53 100 53 Is pasture Immart species rated OBL and/or ree = 100%) than 50% of than 50% of the AcW, or FAC using the best of the control of the	Score (Prevalence) 3 4 4 3 3 2 4 4 4 4 Fall Fall Fall Falls Both Passes Hydrology Test	(Preval 60. 60. 20. 15. 6.0 50.
6-letter code prep godi soft lam ped doll lam ped ped doll lam ped ped doll lam lam ped doll lam lam ped doll lam lam lam lam lam lam lam lam lam l	20 15 5 6 9 22 25 25 3 3 Percent vegetation cover: 100 id hydrology and hydric soil (1 = 1) 1 1 50% 50% 50%	Y Y Y Number of dominant species: 2 present, 0 = not present) 26. Invadation on aerdi mappy 28. Service version of the species of the spec	Ranunculus repens Paspalum dilatutum Plantago Incocelata Lotus peduruculatus Leonodorus assailis Leonodorus assailis Leonodorus assailis Leonodorus Trifolium repens Trifolium repens tata rated OBL and/or FACW s across all strata are rated	Creeping Buttercup Paspalum Narrow-leave Plantain Lotte Lotte Leafines Ruth Perennial Rye Grass White Clover Secondary hydrology insticat 2t Water stained leaves 2t Water stained leaves 2t Water stained leaves 15 Dentage patient 15 Dentage patient 16 Dentage patient 16 Dentage patient 16 Dentage patient 16 Shallow application 16 Shallow application 16 Shallow application 17 Shallow Shallow Shallow 18 Fall Fall No Pass	Threat Status	Wetland Status FAC FACU FACU FAC FAC FACW FACU FACU FACU FACU FACU FACU FACU FACU	Y	Dominant Species is OBL_FACW Yes Pasture e Pasture cover Vegetation cover This if Wettand if all dod across all strata FACW (pass soc dominant species are rated Obl_F, the So 270 rule. Wettand if more VES (Pass) or N	Dominant Species is OBL, FACW, FAC Yes Yes Yes 100 0.5 100	Score (Prevalence) 3 4 4 3 3 2 4 4 4 4 Fall Fall Fall Falls Both Passes Hydrology Test	(Preva 60 60 20 15 6. 50

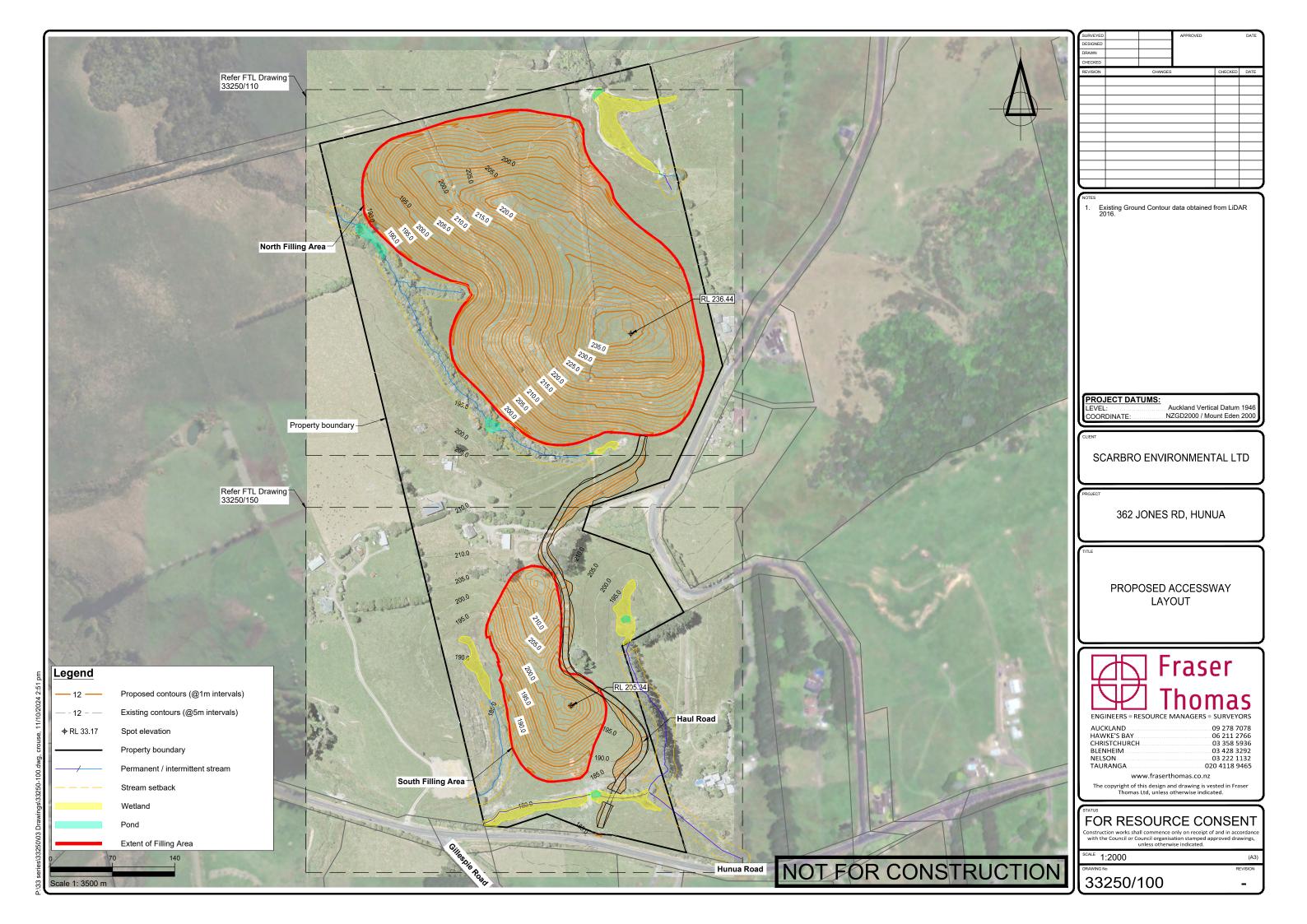
Plot Number	8 - with	in wetland centre						Dominant	Dominant Species		
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture	Species is	is OBL, FACW,	Score (Prevalence)	Points (Prevalence
							species	OBL, FACW	FAC		
macrub	50	у	Machaerina rubiginosa	Baumea	Not Threatened			Yes	Yes	1	50.0
juneff isopro	20 30	У	Juncus effusus Isolepis prolifera	Leafless Rush Three Square	Not Threatened	FACW OBL		Yes Yes	Yes Yes	2	40.0 30.0
isopio	30	y	isolepis prolitera	Titlee Square	Not Illieatelled	OBL		1 63	165	'	30.0
Number of species: 3	Percent vegetation cover: 100	Number of dominant species: 3									
OPTIONAL Indicators of wetla	and hydrology and hydric soil (1 =	present, 0 = not present)									
Primary hydrology indicators				Secondary hydrology indical	tors						
1A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture e:	xclusion test:		
1B. Groundwater <30 cm	1	2H. Sparsely vegetated concave surface		2L. Drainage patterns				Pasture cover	0		
1C. Soil saturation <30 cm		2l. Salt crust		3E. Dry-season water table					•		
2A. Water marks		2J. Aquatic invertebrates		3F. Saturation in aerial imagery				Vegetation	100		
2B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position				cover			
2C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aquitard					0		
2D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is i	not pasture		
2E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks							
2F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?:		1					
Clarkson 2013						MFE 2021					
Wetland vegetation determina	ation			ı		Wetland determination	on	Wetland if all dor			
1. Rapid test score:	100%	Wetland if all dominant species across all stra (pass score = 100%)	ta rated OBL and/or FACW	Pass		1. Rapid test score:	100%		rated OBL and/or	Pass	
2a. Dominance Test Score:	100%	Wetland if more than 50% of dominant species OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Pass		2a. Dominance Test Score:	100%		than 50% of s across all strata FACW, or FAC using	Pass	
2b. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	1.20	Wetland if PI ≤ 3 around 3.0 shoul other wetland inc	d be used alongside	Pass	
3. Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev	alence			Passes Both	
4. Prevalence Index Result:	1.2	Wetland if PI ≤ 3.0, but values around 3.0 sho wetland indicators.	uld be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or N	O (Fail)	Passes Hydrology Test	
Is it a wetland?		It's wetland vegetation	<u>n!</u>			4b. Indicators of hydric soil present?	Yes	YES (Pass) or N	O (Fail)	Passes Soil Test	
						Is it a wetland?		<u>It's a W</u>	etland under the R	MAL	
			•							•	
Plot Number		9	1								
r lot Humber											
								Dominant	Dominant Species		
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Species is	is OBL, FACW,	Score (Prevalence)	Points (Prevalence
		Dominant (50/20 rule) Y / N			Threat Status		Pasture species	Species is OBL, FACW	is OBL, FACW, FAC	Score (Prevalence)	(Prevalenc
pasdis	50	Dominant (50/20 rule) Y / N	Paspalum distichum	Mercer Grass	Threat Status	FACW		Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	Score (Prevalence)	(Prevalenc
pasdis perhyd		Dominant (50/20 rule) Y / N y y	Paspalum distichum Persicaria hydropiper		Threat Status			Species is OBL, FACW	is OBL, FACW, FAC	Score (Prevalence) 2 2 2 2	(Prevalenc
pasdis	50 20	Dominant (50/20 rule) Y / N y y	Paspalum distichum	Mercer Grass Water Pepper		FACW FACW		Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2	(Prevalence 100.0 40.0
pasdis perhyd junedg rubfru rumobt	50 20 15 5	Dominant (50/20 rule) Y / N y y	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Wiwf Blackberry Broad-leaved Dock		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd junedg rubfru	50 20 15 5	Dominant (50/20 rule) Y / N Y Y	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus	Mercer Grass Water Pepper Wiwi Blackberry		FACW FACW FACW FAC		Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2 2 2 3	100.0 40.0 30.0 15.0
pasdis perhyd junedg rubfru rumobt pasdil	50 20 15 5 5	y y	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Wiwf Blackberry Broad-leaved Dock		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd junedg rubfru rumobt pasdil Number of species: 6	50 20 15 5 5 5 Percent vegetation cover: 100	y y y Number of dominant species: 2	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Wiwf Blackberry Broad-leaved Dock		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd junedg rubfru rumobt pasdil Number of species: 6	50 20 15 5 5	y y y Number of dominant species: 2	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Whit Blackberry Broad-leaved Dock Paspalum		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes	is OBL, FACW, FAC Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd junedg rutofru rumobt pasdil OPTIONAL Indicators of wetla Primary hydrology indicators	50 20 15 5 5 5 Percent vegetation cover: 100	Y Y Number of dominant species: 2 Present, 0 = not present)	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Why Blackberry Broad-leaved Dock Paspalum Secondary hydrology Indical		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes	is OBL, FACW, FAC Yes Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd innedg rundru rumobt pasdil Number of species: 6 OPTIONAL Indicators of wetla Primary hydrology indicators 1.8 Surface water	50 20 15 5 5 5 Percent vegetation cover: 100	V V V V V V V V V V V V V V V V V V V	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper What Blackberry Broad-leaved Dock Paspalum Secondary hydrology Indical 24: Water-stained leaves		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes	is OBL, FACW, FAC Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd unedg rubfru rumobt pasdis Number of species: 6 OPTIONAL Indicators of wetla Primary hydrology indicators 1A. Surface water 1B. Groundwater 40 cm	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	V y y Number of dominant species: 2 present, 0 = not present) 20. Inundation on antal langury 25. Insufficient oracces surface	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Papper Why Blackberry Broad-leaved Dock Paspalum Secondary hydrology Indica 28. Water-tailed leaves Lt. brainage patterns		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes	is OBL, FACW, FAC Yes Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasdis perhyd perhyd pasdi fubriu rumobt pasdi OartoNAL Indicators of wetin Primary hydrology indicators 18. Surfacewale 18. Groundwater 40 cm	50 20 15 5 5 5 Percent vegetation cover: 100	V V V V V V V V V V V V V V V V V V V	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Popper Whyr Blackberry Broad-leaved Dock Paspalum Secondary hydrology Indicat 2K. Water-stained leaves 2L. Drahage patterns 3E. Dry-season water table		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes Yes Pasture e: Pasture cover	is OBL, FACW, FAC Yes Yes Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pandis partyd partyd puned pribfru runobt pandi Number of species: 6 OPTIONAL Indicators of wetla Palmary lydrology Indicators 18. Groundwater 40 cm 16. Soil sauration 40 cm 16. Soil sauration 40 cm 16. Soil sauration 40 cm	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	Y Y Y Number of dominant species: 2 present, 0= not present) 20. Inundation on artisl imagery 21. Sparsely vegled oracure surface 2. Sa extra Call Sa ex	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper What Blackberry Broad-leaved Dock Paspalum Secondary hydrology Indicat 24. Water stained leaves 24. Drainage patterns 35. Dry. staration in aerial magery		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes Yes Pasture e: Pasture cover	is OBL, FACW, FAC Yes Yes Yes	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasidis perityd inned; inned; inded; inded	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	V. V. Number of dominant species: 2 Passerin, U shoot present) 20. Invadation on serial imagery 21. Sparsely vegetated conceive surface 23. Against inventionates 23. Against inventionates	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Water Blackberry Broad-leaved Dock Paspalum 25. Water stained leaves 25. Water stained leaves 26. Drassage patterns 27. Drassage patterns 28. Drassage patterns 29. Drassage patterns 20. Drassag		FACW FACW FACW FAC FAC	species	Species is OBL, FACW Yes Yes Pasture e Pasture cover	is OBL, FACW. FAC Yes Yes Xusion test: 5	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasidis pasidi	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	Y Y Y Number of dominant species: 2 present, 2 e not present) 20. Invandation on artial imagery 21. Sparsely vegical concave surface 22. Sparsely vegical concave surface 23. Sparsely vegical concave surface 33. Applied in	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Water Pepper Water Pepper Water Pepper Broad-learned Dock Paspalum Secondary hydrology Indicat 2K. Water stained leaves 2L. Water stained leaves 1L. Drainege patient 5L. Dryssacon water table 75. Sautration is admit imagery 48. Generophic position 65. Sallow explained		FACW FACW FACW FAC FAC	species	Species is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover	is OBL_FACW. FAC Yes Yes Yes Tolorian test: 5 100 0.05	2 2 2 2 3 3	100.0 40.0 30.0 15.0
pasidis perifyd innedg innedg indifyd indifyd indifyd indifyd gasid Nember of species: 6 Gart o NAB indicatos o i weth Primsy llydd obyy indicatos: 1 8. Generifydae o do i 8. Generifyd o do y A. Water marks 2. Besefinin dd on 2. Water marks 2. Besefinin depoets 2. Chrift depoets 2. Chrift depoets	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	V. Y. Number of dominant species: 2 Passerin (U strot) present) 20. hundation on serial inagery 21. Sparsely synglasted concines surface 31. Agrustic inventebrates 31. Agrustic inventebrates 33. Agricular discontinuation of the serial synglastic office o	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Popper With Blickberry Blickberry Broad-leved Dock Plaspallum School spallum School spall		FACW FACW FACW FAC FAC	species	Species is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover	is OBL, FACW. FAC Yes Yes Xusion test: 5	2 2 2 2 3 3	100.0 40.0 30.0 15.0
posidis postry d post	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	Y Y Y Number of dominant species: 2 present, 2e not present) 20. Invariation on artisl imagery 21. Sparsely vegical concave surface 23. Safe crust 24. Aquatic invariations 36. Allydrogen suifile adear 36. Reduced ten 50. Reduced ten ten titted sol	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Pepper Water Pepper Water Pepper Water Pepper Broad-learned Dock Paspalum Secondary hydrology Indicat 2K. Water stained leaves 2L. Water stained leaves 1L. Drainege patient 5L. Dryssacon water table 75. Sautration is admit imagery 48. Generophic position 65. Sallow explained		FACW FACW FACW FAC FAC FAC FAC FAC	species	Species is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover	is OBL_FACW. FAC Yes Yes Yes Tolorian test: 5 100 0.05	2 2 2 2 3 3	100.0 40.0 30.0 15.0 15.0
posidis posthyd posthy	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydrolo	V. Y. Number of dominant species: 2 Passerin (U strot) present) 20. hundation on serial inagery 21. Sparsely synglasted concines surface 31. Agrustic inventebrates 31. Agrustic inventebrates 33. Agricular discontinuation of the serial synglastic office o	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Popper With Blickberry Blickberry Broad-leved Dock Plaspallum School spallum School spall		FACW FACW FACW FAC FAC	species	Species is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover	is OBL_FACW. FAC Yes Yes Yes Tolorian test: 5 100 0.05	2 2 2 2 3 3	100.0 40.0 30.0 15.0 15.0
pasidis partidis part	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Y Y Y Number of dominant species: 2 present, 2e not present) 20. Invariation on artisl imagery 21. Sparsely vegical concave surface 23. Safe crust 24. Aquatic invariations 36. Allydrogen suifile adear 36. Reduced ten 50. Reduced ten ten titted sol	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Popper Water Blackborry Broad-leaved Dock Paspalum Secondary hydrology indicas 2K. Water-stained leaves 2K. Water-stained leaves 2L. Drainage patterns 2L. Sharuston in aerdal imagery 4B. Geomorphic position 4G. Shallow squared 4D. FAG-ensural text		FACW FACW FACW FAC FAC FAC FAC FAC FAC FAC FAC FACU	Y	Species is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover	is OBL_FACW. FAC Yes Yes Yes Tolorian test: 5 100 0.05	2 2 2 2 3 3	100.0 40.0 30.0 15.0 15.0
pasidis perhyd innedig innedig richfru runotit pasidi pasidi pasidi innedig runotit pasidi innedig inn	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Y Y Y Number of dominant species: 2 present, 2e not present) 20. Invariation on artisl imagery 21. Sparsely vegical concave surface 23. Safe crust 24. Aquatic invariations 36. Allydrogen suifile adear 36. Reduced ten 50. Reduced ten ten titted sol	Paspalum distichum Persicaria hydropiper Juncus edgariae Rubus fruticosus Rumex obtusifolius	Mercer Grass Water Popper Water Blackborry Broad-leaved Dock Paspalum Secondary hydrology indicas 2K. Water-stained leaves 2K. Water-stained leaves 2L. Drainage patterns 2L. Sharuston in aerdal imagery 4B. Geomorphic position 4G. Shallow squared 4D. FAG-ensural text		FACW FACW FACW FAC FAC FAC FAC FAC	Y	Species is OBL_FACW Yes Yes Yes Pasture e- Pasture cover Vegetation cover This is i	is OBL. FACW. FAC. Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 2 2 3 3	100.0 40.0 30.0 15.0 15.0
pasidis partidis part	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Y Y Y Number of dominant species: 2 present, 2e not present) 20. Invariation on artisl imagery 21. Sparsely vegical concave surface 23. Safe crust 24. Aquatic invariations 36. Allydrogen suifile adear 36. Reduced ten 50. Reduced ten ten titted sol	Paspalum distichum Persicaria hydropiper Juncus deginee Rubus hutcosus Rutus hutcosus Rutus distinutionidas Paspalum distatum	Mercer Grass Water Popper Water Blackborry Broad-leaved Dock Paspalum Secondary hydrology indicas 2K. Water-stained leaves 2K. Water-stained leaves 2L. Drainage patterns 2L. Sharuston in aerdal imagery 4B. Geomorphic position 4G. Shallow squared 4D. FAG-ensural text		FACW FACW FACW FAC FAC FAC FAC FAC FAC FAC FAC FACU	Y	Species Is OBL_FACW Yes Yes Yes Pasture e: Pasture cover Vegetation cover Wetand if all doi	is OBL. FACW, FAC. Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 2 2 3 3	100.0 40.0 30.0 15.0 15.0
pasidis periodic peri	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydric soil (1 =	Y Y Y Number of dominant species: 2 present, 2 e not present) 20. Invariation on artisl inagery 21. Sparsely register docures surface 23. Safe rure 24. Aquatic inventionates 3A. Hydrogen suffice adoor 3B. Oddised ribergiere on rootes 5C. Reduced ten on titled coll 4A. High water table stunied/bressed plants Welland if all dominant species across all strately	Paspalum distichum Persicaria hydropiper Juncus edariane Rabus fruticosus Rubus fruticosus Paspalum distatum Paspalum distatum ta rated OBL and/or FACW	Mercer Grass Water Popper Water Water Water Brook-leaved Dock Passpalum Secondary hydrology indicat 2K Water stained leaves 2L Oralines patients 3E. Dry-season water table 19. Substantial Secondary 4B. Genomphic position 4B. Salvarian is and in langury 4B. Genomphic position 4D. FAC constraint less 4D. FAC constraint		FACW FACW FACW FACW FAC FAC FAC FAC FAC FAC FAC FACU FAC FACU Wetland determinate	y Y	Species is OBL, FACW Yes	s OBL FACW, FAC Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 2 2 3 3 4	100.0 40.0 30.0 15.0
pasidis parthyd parthyd parthyd pared pared pasidis pa	50 20 15 5 5 5 Percent vogetation cover: 100 and hydrology and hydrology and hydrology and the following the follo	V. Y. Y. Number of dominant species: 2 present, 0 = not present) 20. hundrator on antial langury 20. hundrator on antial langury 21. Sant orust 22. Santa verse 23. Sant orust 24. Aquatic inventranse 24. Aquatic inventranse 25. Reduced son 25. Reduced son 26. Reduced son 26. Reduced son 27. Reduced son 28. Reduced son 29. Reduced son 29. Reduced son 30. Reduced son sin little sol 30. Reduced son si	Paspalum distichum Persicaria hydropiper Juncus edariane Rabus fruticosus Rubus fruticosus Paspalum distatum Paspalum distatum ta rated OBL and/or FACW	Mercer Grass Water Popper What Blackberry Broad-leaved Dock Paspallum Sociation of the Security Indicates 2K. Water stained leaves 2K. Water stained leaves 2K. Diralege patterns 2K. Diralege pattern		FACW FACW FACW FAC	y Y	Species is OBL. FACW Yes	is OBL FACW, FAC Yes Yes Yes 100 100 100 100 100 100 100 100 100 1	2 2 2 3 3 4	100.0 40.0 30.0 15.0
posidis postfyd postfy	50 20 15 5 5 5 Fercent vegetation cover: 100 multiyetrology and hydra soil (1 = 1) 1 1 1 100%	Number of dominant species: 2 Number of dominant species: 2 Passette (Define) present) 20. Inundation on serial imagery 21. Sparsety syngetised concrew surface 32. Agricult inventionals 33. Agricult inventionals 33. Network inventionals 33. Oxidiate inventionals 34. Hydrogen surface down 36. Reduced serial 37. Reduced serial 38. Agricultural 38. Serial 39. Reduced seria	Paspalum distichum Persicaria hydropiper Juncus edariane Rabus fruticosus Rubus fruticosus Paspalum distatum Paspalum distatum ta rated OBL and/or FACW	Mercer Grass Water Pepper What Blackberry Broad-leaved Dock Paspellum Scoondary Bydratory Andies 28. Water stained leaves 28. Water stained leaves 28. Drissasson water stale 39. Samarian in agric magnetic magn		FACW FACW FACW FAC	Y 100% 2.20	Species Is OBL, FACW Yes	is OBL FACW, FAC Yes Yes Yes 100 100 100 100 100 100 100 100 100 1	2 2 2 3 3 4	100.0 40.0 30.0 15.0
posidis postyled post	50 20 15 5 5 5 5 Percent vegetation cover: 100 and hydrology and hydric soil (1 = 1 1 100%	V. Y. Y. Number of dominant species: 2 present, 0 = not present) 25. Invadation on artisl imagery 25. Invadation on artisl imagery 25. Search vegation domare surface 3. Sat creat 3. Sat creat 3. A sputial invadant domare surface 3. Reduced sea 4. Rejn value slabel seal (petal sea of the sea of the seal of the	Paspalum distichum Persicaria hydropiper Juncus degine Rubus frutcosus Rubus frutcosus Paspalum distatum ta rated OBL and/or FACW s across all strata are rated	Mercer Grass Water Pepper What Pepper Blackberry Blackberry Blackberry Broad-leaved Dock Pospalium Secondary hydrology indicate 28. Water statined leaves 22. Water statined leaves 25. Dry-staten water table 17. Sauranian in serial imagery 48. Seconomistic position 46. Shallow acquisited 46. Prosi-hassy hummocks hydrological Secondary Pass Pass Pass Pass No		FACW FACW FACW FAC	Y 100% 2.20	Species Is OBL, FACW Yes	is OBL FACW, FAC Yes Yes Yes 100 100 100 100 100 100 100 100 100 10	2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	100.0 40.0 30.0 15.0

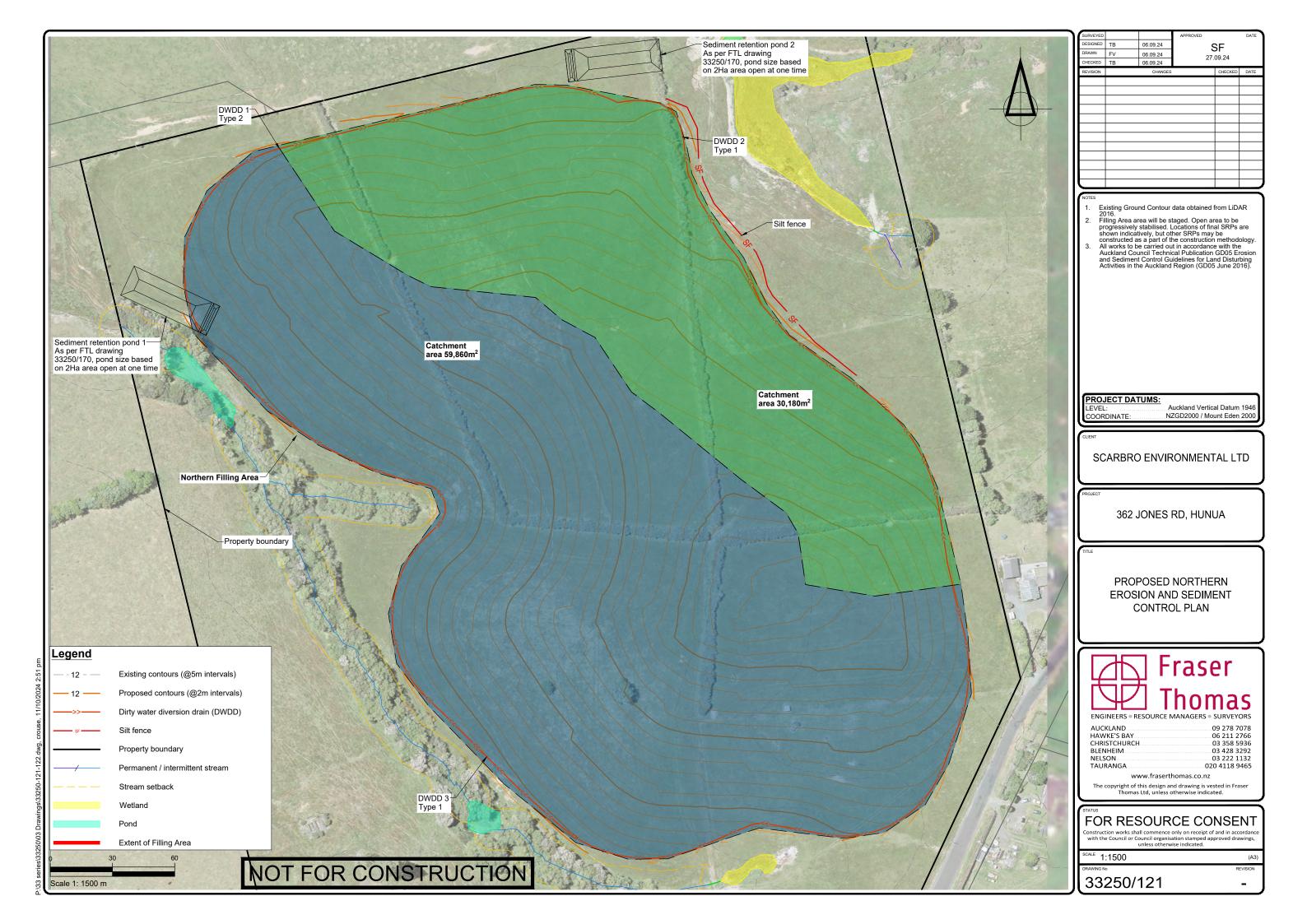
Plot Number		10											
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevaler		
asdis	40	y	Paspalum distichum	Mercer Grass		FACW		Yes	Yes	2	80.0		
neff	20	у	Juncus effusus	Leafless Rush		FACW		Yes	Yes	2	40.0		
inrep	10		Ranunculus repens	Creeping Buttercup		FAC				3	30.0		
tped	10		Lotus pedunculatus	Lotus		FAC	Y			3	30.0		
ollan	5		Holcus lanatus	Yorkshire Fog		FAC	Y			3	15.0		
inedg	5		Juncus edgariae	Wiwf	Not Threatened	FACW				2	10.0		
asdil	5		Paspalum dilatatum	Paspalum		FACU	Y			4	20.0		
opro	5		Isolepis prolifera	Three Square	Not Threatened	OBL				1	5.0		
lumber of species: 8	Percent vegetation cover: 100	Number of dominant species: 2											
PTIONAL Indicators of wetla	nd hydrology and hydric soil (1 =	present, 0 = not present)											
rimary hydrology indicators				Secondary hydrology indica									
A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture e	xclusion test:				
B. Groundwater <30 cm	1	2H. Sparsely vegetated concave surface		2L. Drainage patterns	1								
C. Soil saturation <30 cm		21. Salt crust		3E. Dry-season water table	+		1	Pasture cover	20				
A. Water marks		2J. Aquatic invertebrates	l		-		+						
				3F. Saturation in aerial imagery			1	Vegetation	100				
B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position			1	cover					
C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aquitard					0.2				
D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is	not pasture				
E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks									
F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?		1							
larkson 2013		47C riigii water tabe staneostiessed plants		Hydric Soil?:		MFE 2021	_						
Vetland vegetation determina	tion					Wetland determinati	on						
. Rapid test score:	100%	Wetland if all dominant species across all stra (pass score = 100%)	ata rated OBL and/or FACW	Pass		Rapid test score:	100%		rated OBL and/or	Pass			
a. Dominance Test Score:	100%	Wetland if more than 50% of dominant specie OBL, FACW, or FAC using the 50/20 rule.	es across all strata are rated	Pass		2a. Dominance Test Score:	100%	FACW (pass score = 100%) Wetland if more than 50% of dominant species across all strata are rated OBL, FACW, or FAC using the 50/20 rule.		Pass			
tb. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	2.30	Wetland if PI ≤ 3 around 3.0 shou other wetland in	ld be used alongside	Pass			
Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass		3. Dominance + Prev			Passes Both				
. Prevalence Index Result:	2.3	Wetland if PI ≤ 3.0, but values around 3.0 showetland indicators.	ould be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		YES (Pass) or NO (Fail)		Passes Hydrology Test	
s it a wetland?		It's wetland vegetatio	n!			4b. Indicators of hydric soil present?			Passes Soil Test				
						Is it a wetland?		<u>It's a V</u>	etland under the R	MA!			
Plot Number		11	1										
		I					1	Dominant	Dominant Species				
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Species is OBL, FACW	is OBL, FACW, FAC	Score (Prevalence)	Point (Prevale		
acrub	25	Y	Machaerina rubiginosa	Baumea	Not Threatened	OBL		Yes	Yes	1	25.0		
erhyd	15		Persicaria hydropiper	Water Pepper		FACW				2	30.0		

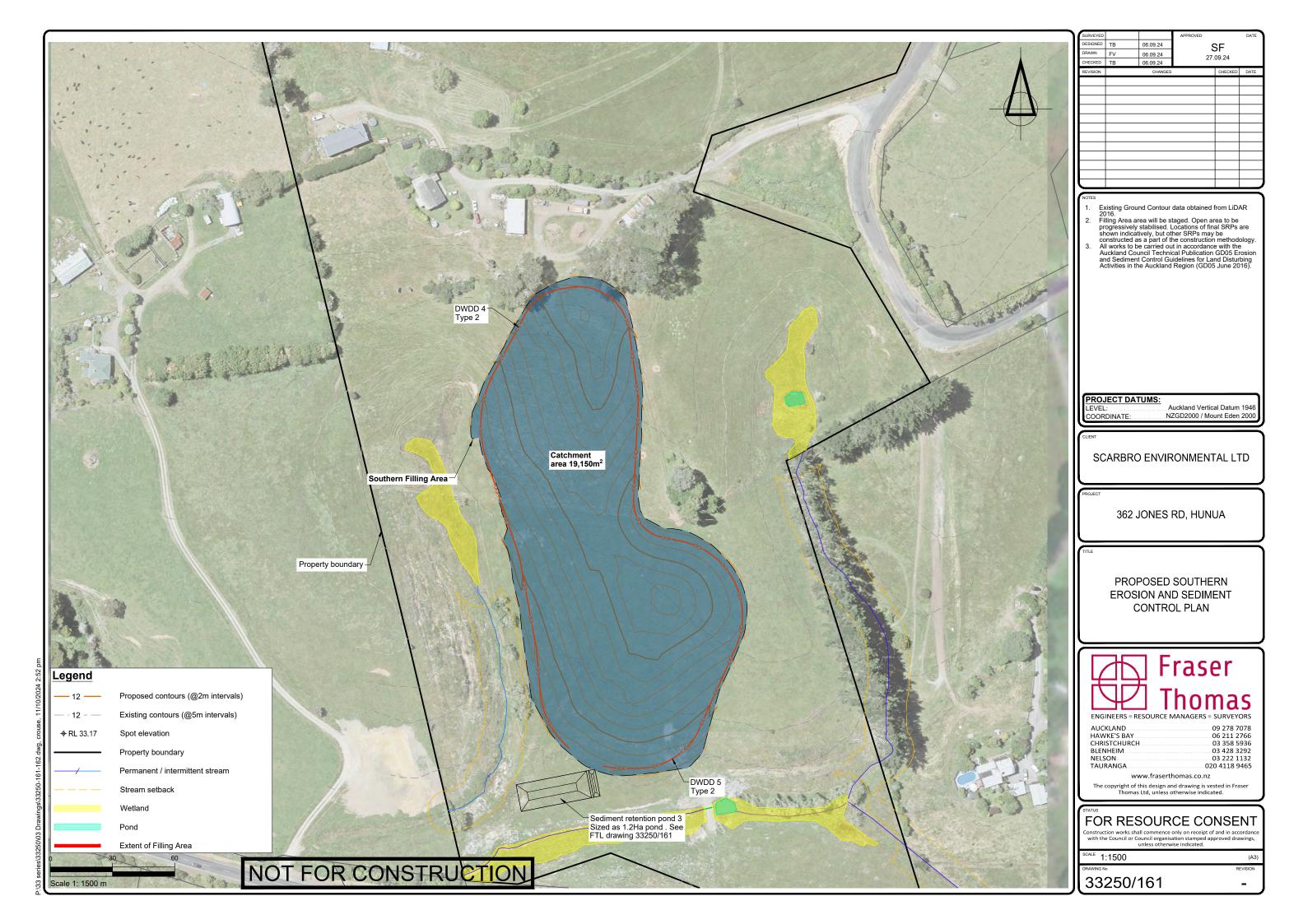
Plot Number		11	1										
6-letter code	% Cover	Dominant (50/20 rule) Y / N	Species Name	Common Name	Threat Status	Wetland Status	Pasture species	Dominant Species is OBL, FACW	Dominant Species is OBL, FACW, FAC	Score (Prevalence)	Points (Prevalenc		
macrub	25	Y	Machaerina rubiginosa	Baumea	Not Threatened	OBL		Yes	Yes	1	25.0		
perhyd	15		Persicaria hydropiper	Water Pepper		FACW				2	30.0		
pasdis	35	Y	Paspalum distichum	Mercer Grass		FACW		Yes	Yes	2	70.0		
Number of species: 4	25 Percent vegetation cover: 100	Number of dominant species: 2	Isolepis prolifera	Three Square	Not Threatened	OBL				1	25.0		
OPTIONAL Indicators of wetle	and hydrology and hydric soil (1 =	present, 0 = not present)											
Primary hydrology indicators				Secondary hydrology indica	tors								
1A. Surface water	1	2G. Inundation on aerial imagery		2K. Water-stained leaves				Pasture e	xclusion test:				
1B. Groundwater <30 cm		2H. Sparsely vegetated concave surface		2L. Drainage patterns									
1C. Soil saturation <30 cm		2i. Salt crust		3E. Dry-season water table			1	Pasture cover 0	Pasture cover 0				
2A. Water marks		2J. Aquatic invertebrates		3F. Saturation in aerial imagery			1	Vegetation					
2B. Sediment deposits		3A. Hydrogen sulfide odour		4B. Geomorphic position			1	cover	100				
2C. Drift deposits		3B. Oxidised rhizosphere on roots		4C. Shallow aquitard					0				
2D. Algal mat/crust		3C. Reduced iron		4D. FAC-neutral test				This is	not pasture				
2E. Iron deposits		3D. Reduced iron in tilled soil		4E. Frost-heave hummocks									
2F. Surface soil cracks		4A. High water table stunted/stressed plants		Hydric Soil?:		1							
Clarkson 2013				nyunc sour:		MFE 2021							
Wetland vegetation determina	ation					Wetland determinati	on						
1. Rapid test score:	100%	Wetland if all dominant species across all stra (pass score = 100%)	ata rated OBL and/or FACW	Pass		1. Rapid test score:		Wetland if all do across all strata FACW (pass sco	rated OBL and/or	Pass			
2a. Dominance Test Score:	100%	Wetland if more than 50% of dominant specie OBL, FACW, or FAC using the 50/20 rule.	s across all strata are rated	Pass		2a. Dominance Test Score:		Wetland if more than 50% of dominant species across all strata are rated OBL, FACW, or FAC using the 50/20 rule.		Pass			
2b. FAC dominants	0%	Are all or most dominants FAC?		No		2b. Prevalence Index Score:	1.50	Wetland if PI ≤ 3.0, but values around 3.0 should be used alongside other wetland indicators.		Pass			
3. Indicators of hydric soil and wetland hydrology present?	Yes	YES (Pass) or NO (Fail)		Pass	3. Dominance + Prevalence		Passes Both						
4. Prevalence Index Result:	1.5	Wetland if PI ≤ 3.0, but values around 3.0 sho wetland indicators.	ould be used alongside other	Pass		4a. Indicators of wetland hydrology present?	Yes	YES (Pass) or N	IO (Fail)	Passes Hydrology Test			
Is it a wetland?		It's wetland vegetation	<u>n!</u>			4b. Indicators of hydric soil present?	Yes	YES (Pass) or N	IO (Fail)	Passes Soil Test			
						Is it a wetland?		It's a W	etland under the R	MAI			

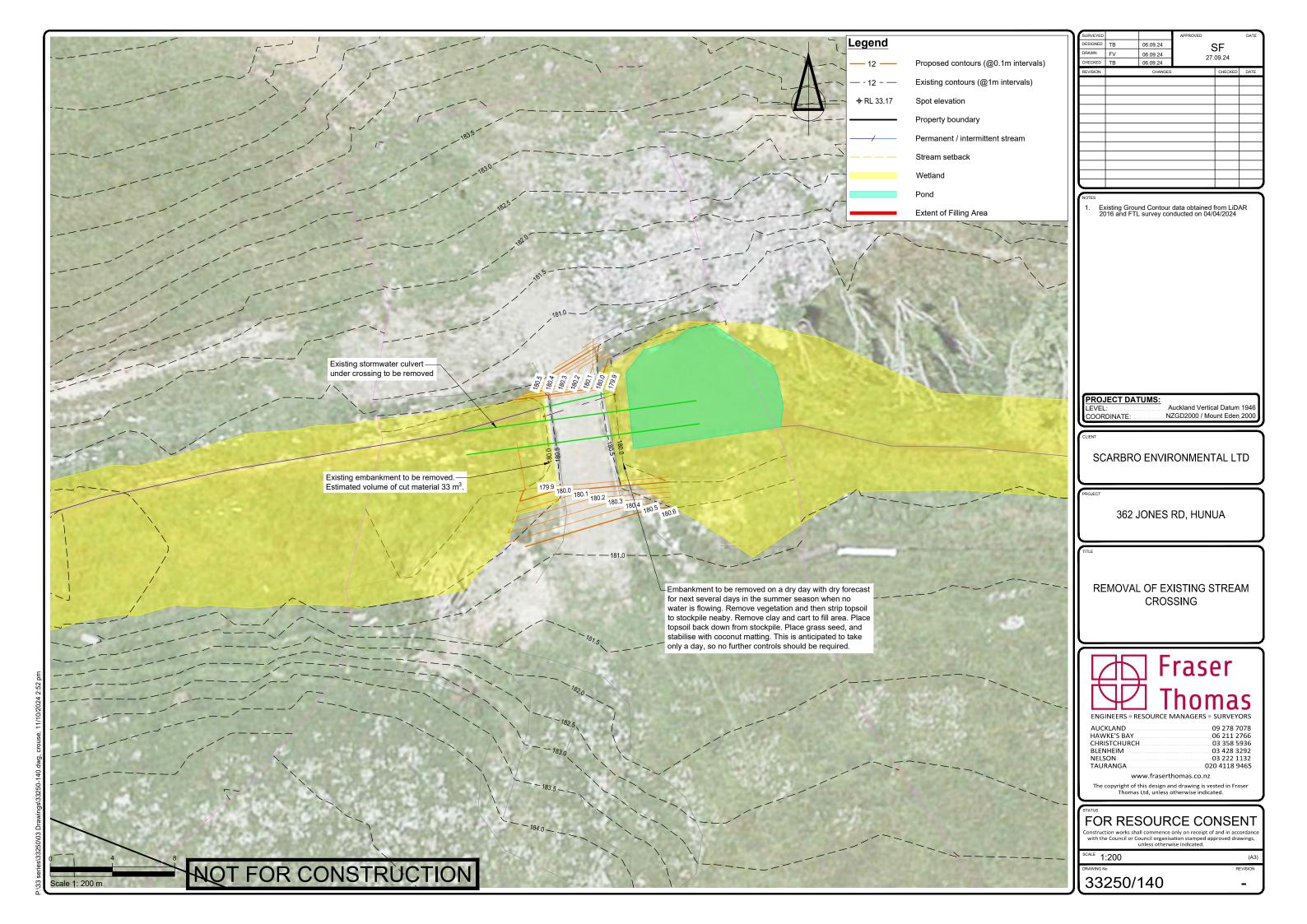
Appendix 4. Project Plans

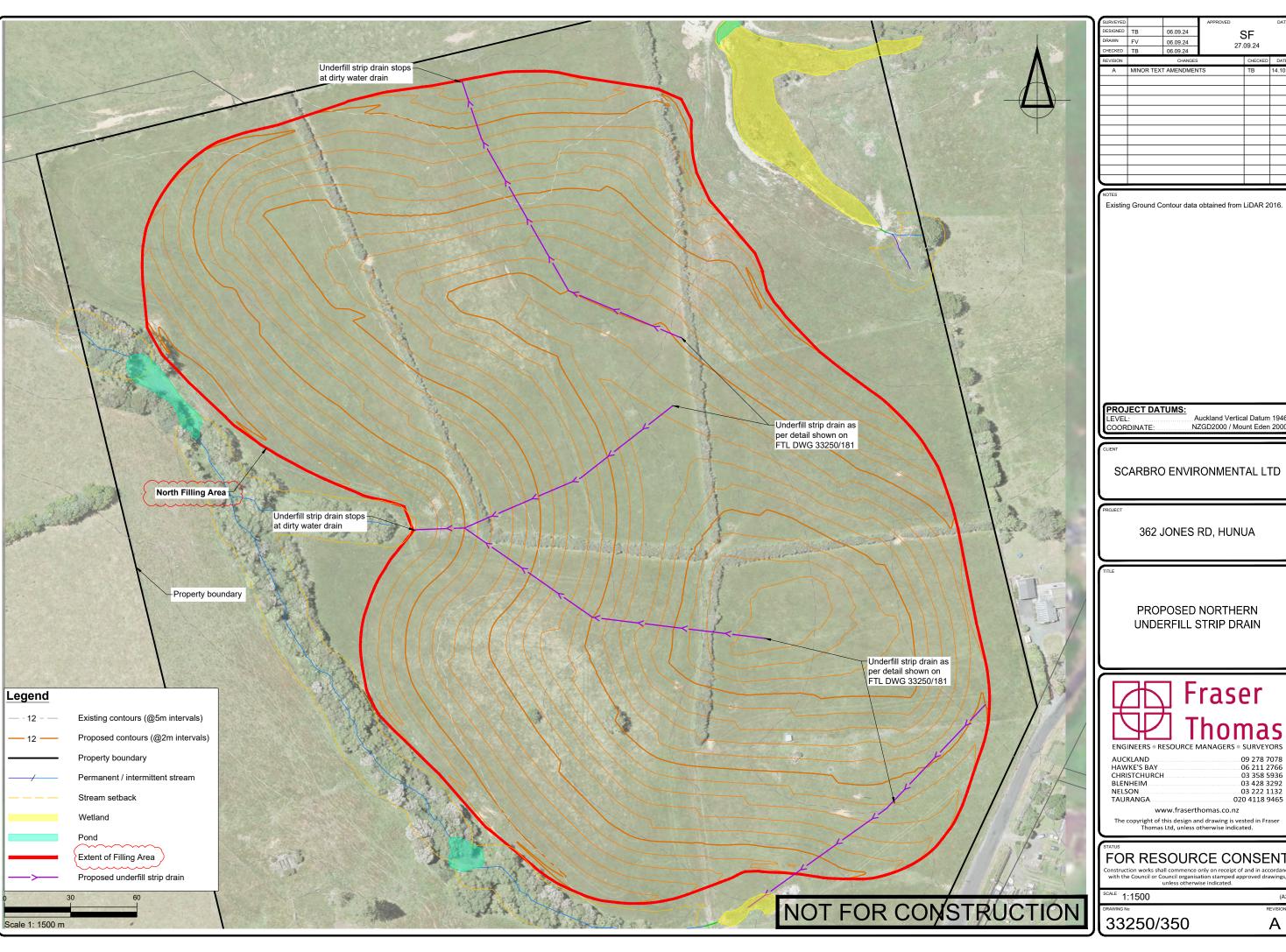


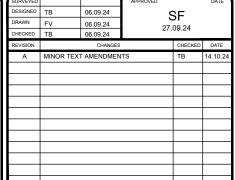












NZGD2000 / Mount Eden 2000

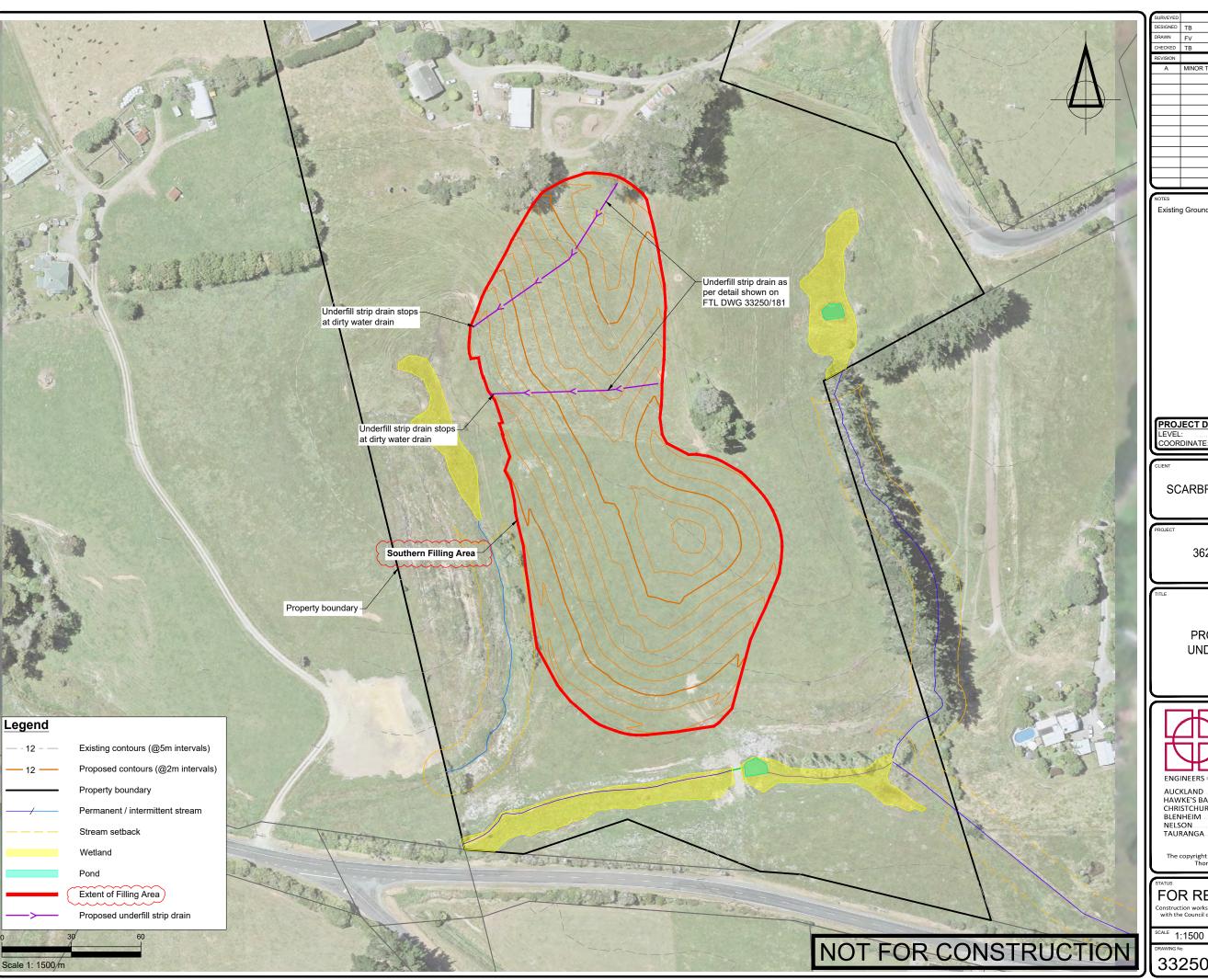
PROPOSED NORTHERN



..09 278 7078

.06 211 2766 .03 358 5936 03 428 3292 03 222 1132 020 4118 9465

FOR RESOURCE CONSENT



SURVETED			APPROVED		DATE
DESIGNED	TB	06.09.24		SF	
DRAWN	FV	06.09.24		ار 09.24	
CHECKED	TB	06.09.24	21.	09.24	
REVISION		CHANGES		CHECKED	DATE
Α	MINOR TEXT	T AMENDMEN	TS	TB	14.10.24
t					

Existing Ground Contour data obtained from LiDAR 2016.

PROJECT DATUMS:

Auckland Vertical Datum 1946 NZGD2000 / Mount Eden 2000

SCARBRO ENVIRONMENTAL LTD

362 JONES RD, HUNUA

PROPOSED SOUTHERN UNDERFILL STRIP DRAIN



AUCKLAND. ..09 278 7078

HAWKE'S BAY CHRISTCHURCH BLENHEIM NELSON .06 211 2766 .03 358 5936 03 428 3292 03 222 1132 TAURANGA 020 4118 9465

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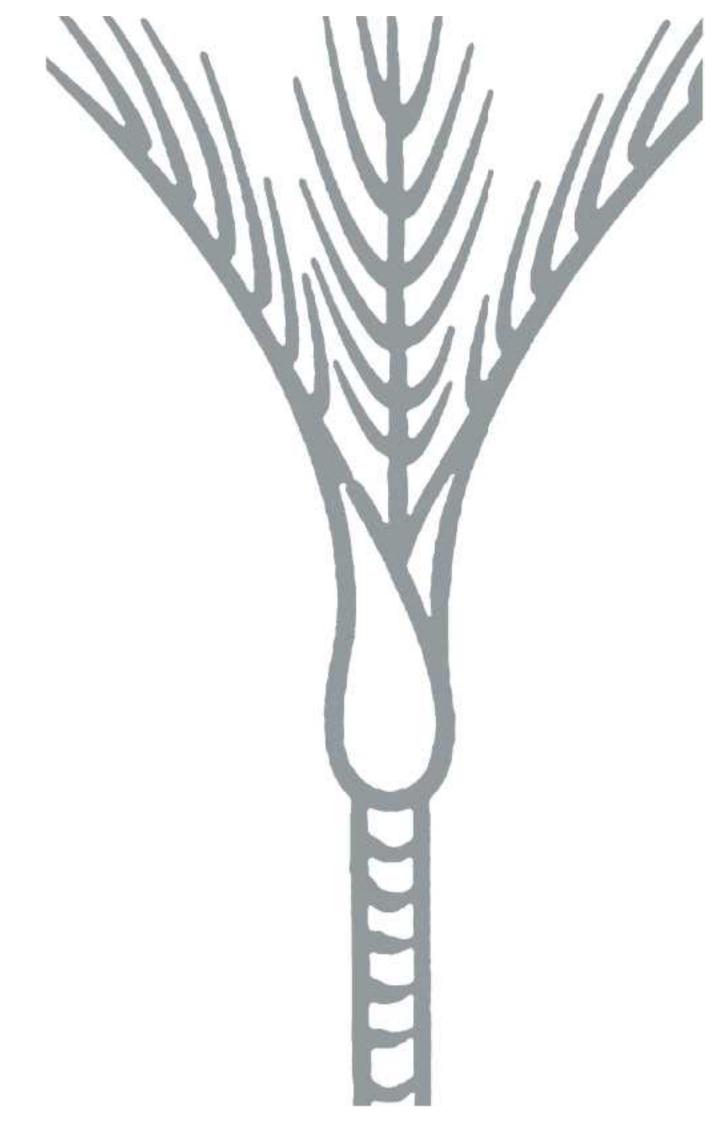
Wetland + Riparian Planting Plan Scarbro Environmental Ltd Jones Road Managed Fill

362 Jones Road Hunua Auckland

Prepared by LA4 Landscape Architects Issued 24.09.2025 (FOR CONSENT)

Contents

Drawing Number	Title	Revision	Date
PP00	Site + Key Plan	В	24.09.25
PP01	Riparian Plan 1	В	24.09.25
PP02	Riparian Plan 2	В	24.09.25
PP03	Plant Details	С	24.09.25





SITE + KEY PLAN

KEY

Site Boundary

Stream Riparian Planting

Pond

Wetland Planting

Wetland Riparian Planting

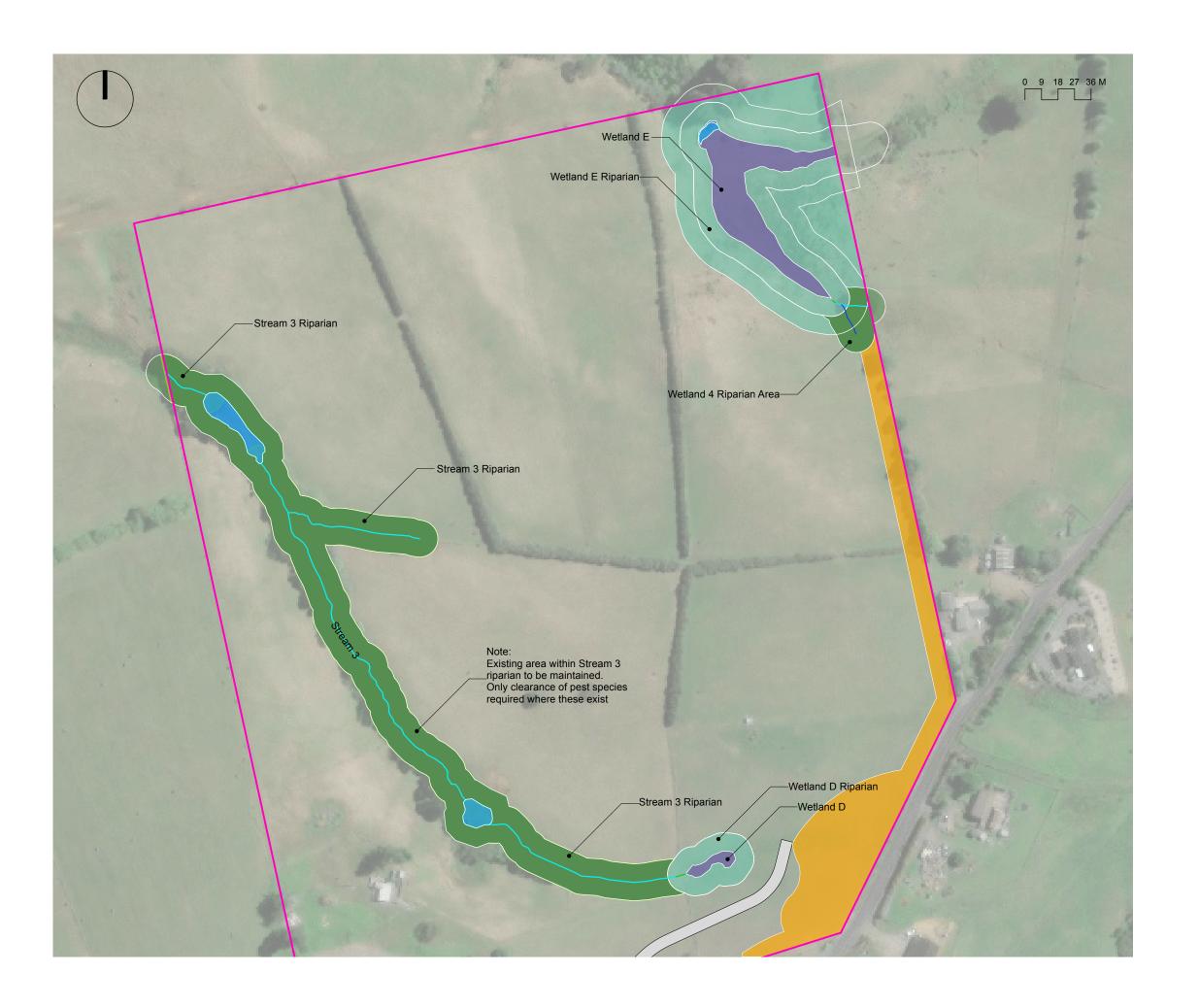
Indigenous Revegetation Planting



Jones Road Managed Fill Riparian Planting Plan

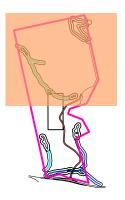
362 Jones Rd Hunua Scarbro Environmental Ltd

24273 PP00 24.09.2025 1:2000 @ A3



RIPARIAN PLAN 1

LOCATION



KEY

Site Boundary

Stream Riparian Planting

Pond

Wetland Planting

Wetland Riparian Planting

Indigenous Revegetation Planting



Jones Road Managed Fill Riparian Planting Plan

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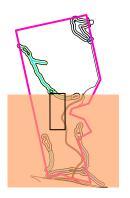
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LANDSCAPE REV: B
ARCHITECTS FOR CONSENT



RIPARIAN PLAN 2

LOCATION



KEY

Site Boundary



Pond

Wetland Planting

Wetland Riparian Planting

Indigenous Revegetation Planting



Jones Road Managed Fill Riparian Planting Plan

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24273 PP02 24.09.2025 1:2000 @ A3

WETLAND - PLANT SCHEDULE (5798m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex geminata	ratauhi	10	700	1L	1220
Carex secta	purei	20	700	1L	2440
Carex virgata	pukio	20	700	1L	2440
Cordyline australis	cabbage tree	10	1400	1.5lt	341
Dacrycarpus dacrydiodes	kahikatea	10	1400	2.5lt	341
Laurelia novae zelandiae	pukatea	5	1400	2.5lt	170
Carpodetus serratus	putaputaweta	5	1400	2.5lt	170
Phormium tenax	harakeke	20	1400	1.5lt	682

WETLAND- PLANT IMAGES











WETLAND RIPARIAN - PLANT SCHEDULE (17290m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex secta	purei	5	700	1L	1820
Carex virgata	pukio	5	700	1L	1820
Cordyline australis	cabbage tree	10	1400	1.5lt	1017
Dacrycarpus dacrydiodes	kahikatea	5	5000	1.5lt	40
Coprosma robusta	karamu	5	1400	1.5lt	509
Phormium tenax	harakeke	10	1400	1.5lt	1017
Melicytus ramiflorus	mahoe	5	1400	1.5lt	509
Kunzea robusta	kanuka	25	1400	1.5lt	2545
Corynocarpus laevigatus	karaka	5	5000	2.5lt	40
Hedycarya arborea	pigeonwood	5	5000	2.5lt	40

WETLAND RIPARIAN- PLANT IMAGES

















STREAM PLANTING (1+2) - PLANT SCHEDULE (13861m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex secta	purei	5	700	1L	1459
Carex virgata	pukio	5	700	1L	1459
Cordyline australis	cabbage tree	10	1400	1.5lt	816
Dacrycarpus dacrydiodes	kahikatea	5	5000	2.5lt	32
Coprosma robusta	karamu	5	1400	1.5lt	408
Phormium tenax	harakeke	10	1400	1.5lt	816
Melicytus ramiflorus	mahoe	5	1400	1.5lt	408
Kunzea robusta	kanuka	25	1400	1.5lt	2040
Corynocarpus laevigatus	karaka	5	5000	2.5lt	32
Hedycarya arborea	pigeonwood	5	5000	2.5lt	32

STREAM PLANTING - PLANT SCHEDULE

















INDIGENOUS REVEGETATION PLANTING - PLANT SCHEDULE (6261m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Cordyline australis	Cabbage tree	10	1400	1.5lt	368
Coprosma robusta	Karamu	5	1400	1.5lt	184
Hedycarya arborea	Pigeonwood	5	5000	2.5lt	14
Kunzea robusta	Kanuka	25	1400	1.5lt	920
Leptospermum scoparium	Manuka	25	1400	1.5lt	920
Melicytus ramiflorus	Mahoe	5	1400	1.5lt	184
Myrsine australis	Mapou	5	1400	1.5lt	184
Phormium tenax	Harakeke	10	1400	1.5lt	368
Piper excelsum	Kawakawa	5	1400	1.5lt	184
Veronica stricta	Koromiko	5	1400	1.5lt	184

INDIGENOUS REVEGETATION PLANTING - PLANT SCHEDULE















Phormium tenax

PLANTING DETAILS

KEY

— Site Boundary

Stream Riparian Planting

Wetland Planting

Wetland Riparian Planting

Indigenous Revegetation Planting



Jones Road Managed Fill Riparian Planting Plan

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LANDSCAPE REV: C ARCHITECTS FOR CONSENT

About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Whangarei, Auckland, Hamilton, Tauranga, Wellington, Nelson, 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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