



Tahimana subdivision, Tasman

Fast Track Substantive Application

Draft Wetland Monitoring Plan

Report prepared for

Tahimana Limited

Prepared by

RMA Ecology Ltd

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1.0 Introduction

Tahimana Ltd has been granted Fast Track Consent (**consent number xxx**) to undertake the subdivision and development of approximately 70 hectares of land on Stagecoach Road, Tasman to establish residential and rural lifestyle lots. The project will include works within Stagecoach Road, Dicker Road and Williams Road reserves, hereafter referred to as 'the site' (**Figure 1**).

The project will include:

- (a) Subdivision to create approximately 145 allotments, including 4 allotments for reserve, roading and services, and enable construction of approximately 141 residential units across a range of densities;
- (b) Development of an open space network including a public reserve and walkways, and upgrades to shared pathways;
- (c) Landscape planting and restoration and enhancement of waterways and wetlands; and
- (d) Associated infrastructure including three waters services and transport (including external road upgrade works).

The Concept Plan is illustrated in **Figure 2**.

1.1 Scope

This Wetland Monitoring Plan (WMP) details a programme of monitoring to provide assurance that the proposed project is having no measurable adverse effect on the wetlands on the site.

The WMP will provide methods for monitoring wetlands to:

- (i) Establish the baseline condition of the wetlands, pre-development; and
- (ii) Measure any change in wetland condition that may be occurring during, or on completion of, earthworks and stormwater management systems within each stage.

A separate Ecological Planting Plan¹, in conjunction with the Landscape Plan², provides details of the areas proposed for native planting, the species to be planted, and a management and monitoring programme.

¹ RMA Ecology Ltd. 2026. *Tahimana subdivision, Tasman: Fast Track Substantive Application Ecological Planting Plan*. Report prepared for Tahimana Ltd.

² Rough Milne Landscape Architects. July 2026.



Figure 1: Location of the site (turquoise boundary lines). The site comprises two lots, legal descriptions Lot 1 DP 450728 (western lot) and Lot 3 DP 450728 (eastern lot).

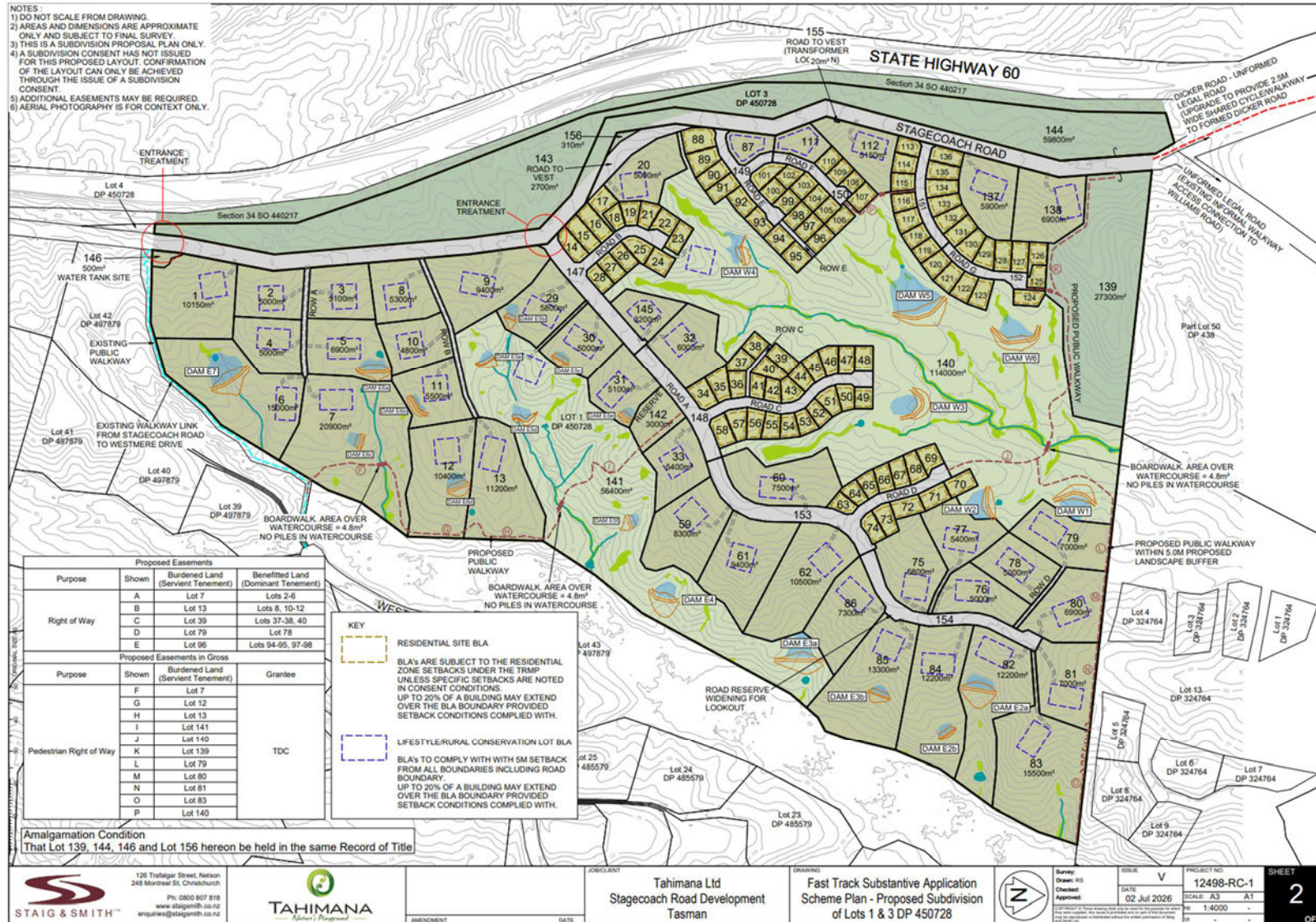


Figure 2: Scheme Plan for the proposed subdivision showing the larger lifestyle lots and smaller residential lots. The proposed walkways are illustrated with a red dashed line. Wetlands are shown in green, and streams and farm ponds are marked in blue.

2.0 Site description

The site is located within a typical Tasman rural environment. The original natural ecology has been heavily modified or removed through past and current farming activities; however, the site still supports freshwater ecosystems which are of ecological value. Other than small patches of common native shrubs in some of the gullies, the site supports little native vegetation and is predominantly under pasture. The site is currently used for livestock grazing.

The site contains two catchments, an eastern and western catchment, that between them support a network of 13 streams and 54 natural inland wetlands (Figure 3). The streams and wetlands are all in poor to very poor condition as a result of past and current land uses, latterly forestry and currently stock grazing. The wetlands have formed alongside streams (at least in part the result of trampling or pugging of stream banks by stock), or are a result of seepage zones in catchment heads. They are generally small, with an average area of 230 m², although the largest has an area of 2,486 m². The wetlands are mostly narrow and linear in shape, and are confined to stream margins, or to small seepages at gully heads.

A summary of the 54 wetlands is provided in Table 1 below. The wetlands have been grouped according to their morphological type and/ or species composition. Representative photographs of the wetlands are presented in Appendix A.

Table 1: Summary description of the 54 natural inland wetlands present on the site.

Label	Geodetic area (m ²)	Description
W12	267	Valley floor wetland. Dominated by <i>Juncus acuminatus</i> . Other species include <i>Isolepis prolifera</i> , <i>Erythranthe moschata</i> , <i>Carex maorica</i> , <i>Epilobium ciliatum</i> , <i>Holcus lanatus</i> , <i>Juncus effusus</i> .
W14	101	Seep wetland dominated by <i>Holcus lanatus</i> and <i>Juncus effusus</i> . Other species include <i>Isolepis prolifera</i> , <i>Trifolium repens</i> , <i>Anthoxanthum odoratum</i> , <i>Agrostis capillaris</i> , and <i>Epilobium ciliatum</i> .
W15	70	Seep wetland dominated by <i>Isolepis prolifera</i> . Other species include <i>Juncus effusus</i> , <i>Holcus lanatus</i> , <i>Lotus pedunculatus</i> , <i>Plantago lanceolata</i> , <i>Trifolium repens</i> .
W16	95	Proximal wetlands grouped together based on similar hydrology and vegetation characteristics. Generally dominated by <i>Juncus effusus</i> . Other species include <i>Plantago lanceolata</i> , <i>Trifolium repens</i> , <i>Leontodon saxatilis</i> , <i>Isolepis prolifera</i> , <i>Holcus lanatus</i> , <i>Agrostis capillaris</i> .
W18	24	
W19	42	
W20	126	
W21	27	
W91	84	
W57	69	
W58	23	

Label	Geodetic area (m ²)	Description
W22	295	Seep wetland dominated by <i>Juncus acuminatus</i> . Other species include <i>Juncus effusus</i> , <i>Holcus lanatus</i> , <i>Isolepis prolifera</i> , <i>Myosotis laxa</i> subsp. <i>caespitosa</i> , <i>Epilobium ciliatum</i> , <i>Anthoxanthum odoratum</i> .
W24	169	Mosaic wetland at gully head. Patches of dry soil and upland veg, but clear wetland areas. Dominant wetland plant species include <i>Eleocharis acuta</i> and <i>Juncus effusus</i> . 20 % <i>Plantago lanceolata</i> . Other species include <i>Juncus acuminatus</i> , <i>Isolepis prolifera</i> , <i>Holcus lanatus</i> , <i>Hypochaeris radicata</i> , <i>Isolepis cernua</i> , and <i>Anthoxanthum odoratum</i> .
W26	67	Dominated by <i>Isolepis prolifera</i> , <i>Juncus effusus</i> , <i>Juncus acuminatus</i> . Passes rapid wetland test.
W27	405	Dominated by <i>Carex maorica</i> , <i>Carex virgata</i> , <i>Carex secta</i> . Other species include <i>Isolepis prolifera</i> and <i>Juncus acuminatus</i> .
W28	24	Nearby wetlands grouped together based on similar hydrology and vegetation characteristics. All are seep wetlands. Generally dominated by <i>Juncus acuminatus</i> , <i>Juncus effusus</i> , <i>Juncus sarophorus</i> . Also present are <i>Holcus lanatus</i> among other species.
W29	18	
W80	35	
W3	77	Dominated by <i>Juncus effusus</i> and <i>Holcus lanatus</i> .
W32	1030	Nearby wetlands grouped together based on similar hydrology and vegetation characteristics. All are valley floor wetlands fed by overland runoff and seeps at gully heads and on valley floors. Dominant plants include <i>Isolepis prolifera</i> , <i>Carex virgata</i> , <i>Juncus acuminatus</i> , <i>Juncus effusus</i> , <i>Persicaria maculosa</i> , <i>Holcus lanatus</i> , and <i>Erythranthe moschata</i> .
W33	163	
W34	280	
W35	92	
W36	749	
W62	319	
W63	215	
W48	126	
W49	220	
W60	934	
W61	609	
W70	2486	
W39	303	Dominated by <i>Holcus lanatus</i> and <i>Lotus pedunculatus</i> , with <i>Juncus effusus</i> . Soils are hydric.
W65	53	
W4	452	Valley floor, riparian wetland dominated by <i>Isolepis prolifera</i> and <i>Carex maorica</i> . Other notable species are <i>Erythranthe moschata</i> , <i>Juncus effusus</i> , and <i>Persicaria maculosa</i> .
W40	59	Nearby wetlands grouped together based on similar hydrology and vegetation characteristics. All are valley floor wetlands fed by overland runoff and seeps at gully heads and on valley floors. Dominant plants include <i>Juncus acuminatus</i> , <i>Juncus effusus</i> , <i>Holcus lanatus</i> . Other species include <i>Lotus pedunculatus</i> , <i>Ranunculus repens</i> , <i>Plantago lanceolata</i> , <i>Hypochaeris radicata</i> , <i>Erythranthe moschata</i> .
W41	36	
W42	100	
W43	402	
W45	210	
W46	289	
W47	159	

Label	Geodetic area (m ²)	Description
W64	74	
W52	65	Dominated by <i>Juncus sarophorus</i> , <i>Holcus lanatus</i> , <i>Ranunculus repens</i> .
W5	48	Dominated by <i>Juncus effusus</i> (80%). Other species include <i>Holcus lanatus</i> , <i>Plantago lanceolata</i> , <i>Juncus prismatocarpus</i> , <i>Leontodon saxitilis</i> , <i>Lotus pedunculatus</i> , <i>Trifolium repens</i> .
W59	133	Dominated by <i>Isolepis prolifera</i> , <i>Juncus effusus</i> , <i>Juncus acuminatus</i> . Other species include <i>Lotus pedunculatus</i> , <i>Holcus lanatus</i> , <i>Ranunculus repens</i> .
W50	384	Dominated by <i>Juncus effusus</i> and <i>Juncus sarophorus</i> , with patches of <i>Persicaria hydropiper</i> .
W56	28	Seep wetland dominated by <i>Juncus sarophorus</i> and <i>Lolium perenne</i> . Other species include <i>Juncus effusus</i> , <i>Paspalum dilatatum</i> , <i>Plantago lanceolata</i> , <i>Holcus lanatus</i> , <i>Agrostis capillaris</i> , <i>Anthoxanthum odoratum</i> , <i>Trifolium repens</i> .
W83	56	
W85	67	Dominated by <i>Carex virgata</i> . <i>Erythranthe moschata</i> , <i>Isolepis prolifera</i> , <i>Juncus effusus</i> , <i>Juncus sarophorus</i> , <i>Persicaria maculosa</i> .
W88	32	
W86	139	Dominated by <i>Juncus effusus</i> , <i>Carex virgata</i> , <i>Isolepis prolifera</i> .
W87	74	Passes rapid test. Dominated by <i>Juncus effusus</i> and <i>Typha orientalis</i> .
W9	21	Seep wetland dominated by <i>Holcus lanatus</i> , <i>Isolepis prolifera</i> , and <i>Juncus effusus</i> .
W84	30	Dominated by <i>Juncus effusus</i> .



Figure 3: Map of the riparian and gully head seep wetlands (green polygons) and streams (blue lines). Farm ponds are shown as turquoise polygons.

3.0 Wetland monitoring methods

3.1 Aim of monitoring

The aim of wetland monitoring at the site is to provide assurance that the proposed development works (in particular earthworks and the stormwater management systems) are having no measurable adverse effect on the extent and condition of the wetlands within the two catchments, including the status of the wetlands as natural inland wetland, as defined by the National Policy Statement for Freshwater Management (NPS-FM).

3.2 Monitoring objectives

The monitoring programme will measure progress towards meeting the following objectives:

1. Maintenance of status of each wetland as natural inland wetland, as defined by the NPS-FM;
2. Maintenance of baseline wetland extent within expected existing minor variation resulting from seasonal fluctuations of the water table/ hydrological regime; and
3. Improvement in wetland condition as a result of the proposed removal of stock and extensive native planting within and around each wetland.

3.3 Monitoring methods

The large number of wetlands across the site would make monitoring of each one impractical and costly; therefore, a representative sample of wetlands has been selected for monitoring, and the results will be extrapolated for the wetlands remaining outside of the monitoring programme.

The sample of wetlands will cover one third of the total number of wetlands (18 wetlands out of 54), and will include wetlands of a range of sizes (area), types (gully/ riparian wetland or seep), and locations (gully head or valley bottom) across both catchments.

The focus for monitoring will be the gully head wetlands (particularly in the western catchment) and upper catchment seep wetlands, and those wetlands that are close to stormwater detention dams or basins, as these are the wetlands most likely to be affected by development activity e.g., potential loss of groundwater re-charge, re-direction of groundwater flow by earthworks cuts, flooding of wetlands near to detention basins during storm events.

All of the western catchment gully-head wetlands (eight in total) and all wetlands identified as being potentially affected by the stormwater detention basins are included in the monitoring programme. In the eastern catchment, the focus for monitoring is on wetlands at the boundary with the large wetland on the neighbouring property (as a proxy for monitoring any potential change in the neighbouring wetland), and on seep wetlands, and the one wetland that is close to a detention basin.

The wetlands selected for monitoring are listed in **Table 2** below, and illustrated in **Figures 4-6**.

Table 2: The sample of wetlands selected for the monitoring programme across the eastern and western catchments.

Monitoring Point reference	Wetland number	Area	Catchment	Location
MP1	W24	169 m ²	Eastern	Gully head. Upstream of detention Dam E7.
MP2	W27	405 m ²	Eastern	Valley floor. Immediately upstream of significant wetland on neighbouring property.
MP3	W12	267 m ²	Eastern	Valley floor.
MP4	W4	452 m ²	Eastern	Valley floor. Immediately upstream of significant wetland on neighbouring property.
MP5	W15	70 m ²	Eastern	Seep.
MP6	W22	295 m ²	Eastern	Seep.
MP7	W88	32 m ²	Eastern	Valley floor. Immediately upstream of significant wetland on neighbouring property.
MP8	W32	1,030 m ²	Western	Gully head.
MP9	W36	749 m ²	Western	Gully head. Upstream of detention Dam W4.
MP10	W33	163 m ²	Western	Gully head.
MP11	W60	934 m ²	Western	Gully head.
MP12	W39	303 m ²	Western	Gully head.
MP13	W43	402 m ²	Western	Gully head.
MP14	W40	59 m ²	Western	Gully head. Upstream of detention Dam W5.
MP15	W41	36 m ²	Western	Gully head. Upstream of detention Dam W5.
MP16	W70	2,486 m ²	Western	Valley floor.
MP17	W45	210 m ²	Western	Gully head. Upstream of detention Dam W6.
MP18	W46	289 m ²	Western	Gully head.

3.3.1 Monitoring of wetland status as natural inland wetland

To monitor wetland status as natural inland wetland, the methods outlined in the Wetland Delineation Protocols³ will be used. Within each selected wetland, the following assessments will be undertaken:

- Assessment of vegetation in a 2 m x 2 m plot using the Clarkson (2014)⁴ method;
- Assessment of wetland soils according to Fraser (2018)⁵; and

³ Ministry for the Environment. 2022. *Wetland delineation protocols*. Wellington: Ministry for the Environment.

⁴ Clarkson, B. 2014. *A vegetation tool for wetland delineation in New Zealand*. Landcare Research Contract Report LC1793.

⁵ Fraser *et al.* 2018. *Hydri soils – field identification guide*. Manaaki Whenua – Landcare Research Contract Report LC3233 for Tasman District Council.

- Assessment of wetland hydrology, according to MfE (2021)⁶.

A summary of the natural inland wetland assessment process is provided in **Appendix B**.

One monitoring point has been selected for each selected wetland at locations where baseline data was collected in the February 2022 surveys. This will allow direct comparison of monitoring data with baseline data. **Figures 4-6** illustrate the location of monitoring points within each wetland.

3.3.2 Monitoring of wetland extent

Monitoring of wetland extent will be based on the boundaries of the wetlands mapped during the February 2022 surveys. The overall extent of each selected wetland will be assessed using professional judgement, based on observations of vegetation and hydrological indicators. Where a wetland boundary is unclear, additional vegetation plot, soil and hydrological assessments will be undertaken, as per the methods listed above.

3.3.3 Monitoring of wetland condition

Wetland health, i.e., condition, will be assessed using the methods outlined in the Handbook for Monitoring Wetland Condition⁷ which measures change in the following five condition indicators:

- Hydrological integrity;
- Physiochemical parameters;
- Ecosystem intactness;
- Pressure from browsing, predation, and harvesting regimes; and
- Dominance of native plants.

The baseline condition of the wetlands selected for monitoring will be assessed using the data collected during the February 2022 surveys.

3.3.4 Baseline monitoring data

Wetland data was collected in February 2022 to inform the initial ecological values and effects assessment report for the site, undertaken for resource consent application to Tasman District Council. The data collected in February 2022 used the above methods for natural inland wetland status and extent assessments, and is therefore suitable for use as a baseline against which to compare future data collected for monitoring purposes. However, not all wetlands were subject to consistent survey, as several areas of wetland passed the Rapid Test for vegetation assessment, and a vegetation plot was not undertaken.

⁶ Ministry for the Environment. 2021. *Wetland delineation hydrology tool for Aotearoa New Zealand*. Wellington: Ministry for the Environment.

⁷ Clarkson *et al.* 2004. *Handbook for Monitoring Wetland Condition: Co-ordinated Monitoring of New Zealand Wetlands*. A Ministry for the Environment Sustainable Management Fund Project (5105).

To ensure a complete set of baseline data is available for comparison with subsequent monitoring data, one round of survey across all the monitoring points will be collected during December-February prior to the commencement of Stage 1 earthworks.

See **Section 4.0** for further details regarding the timing of monitoring tasks.

3.4 Reporting

A report will be submitted to the Council within two months of each monitoring visit and the detail the following:

- The date of the inspection;
- The person carrying out the inspection and their qualifications;
- The results of the monitoring described above; and
- Recommendations for any remedial action that may be required e.g., adjustment to stormwater management systems.

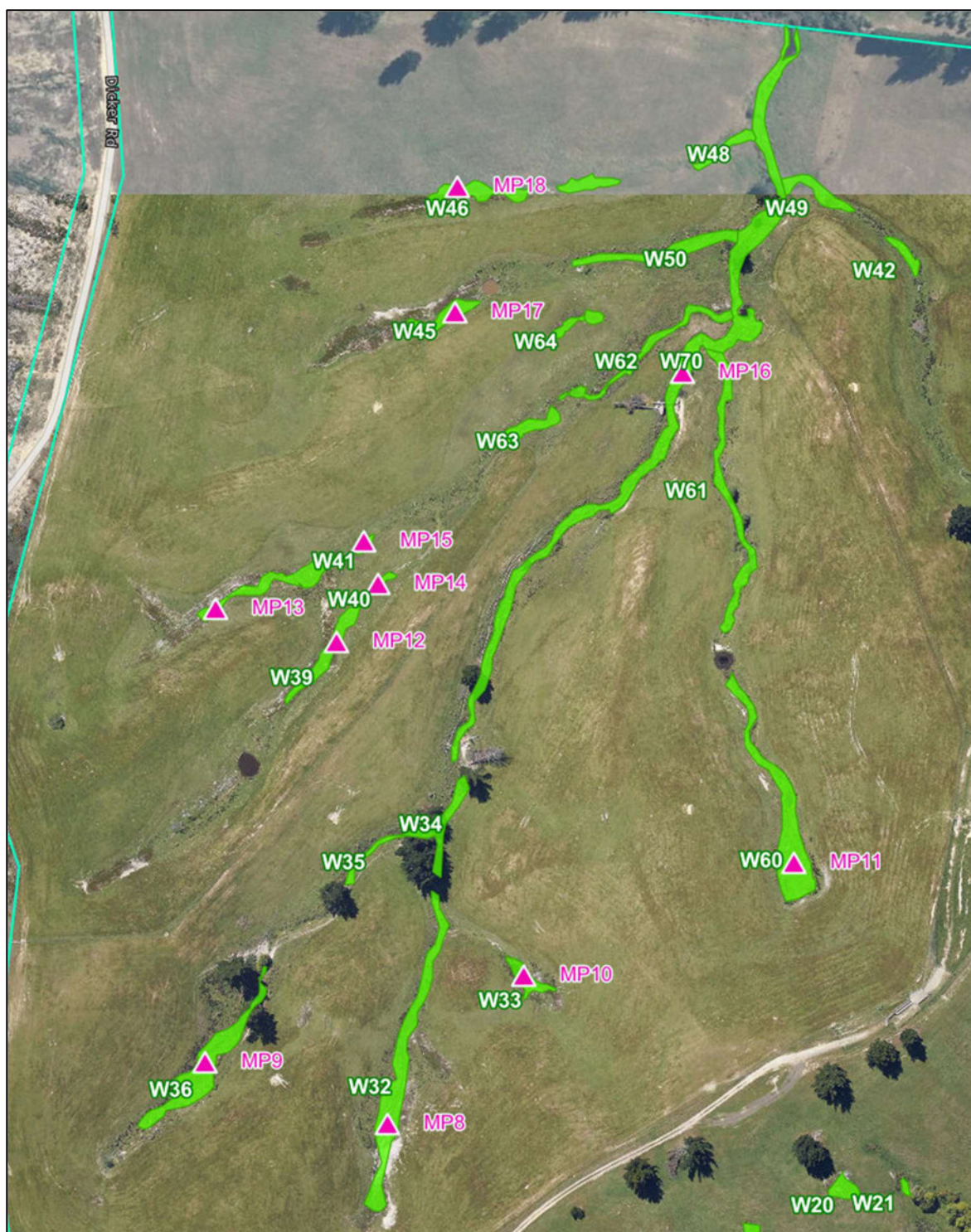


Figure 4: Western catchment – location of wetland monitoring points (pink triangles and labels) and wetlands (green polygons and white labels).

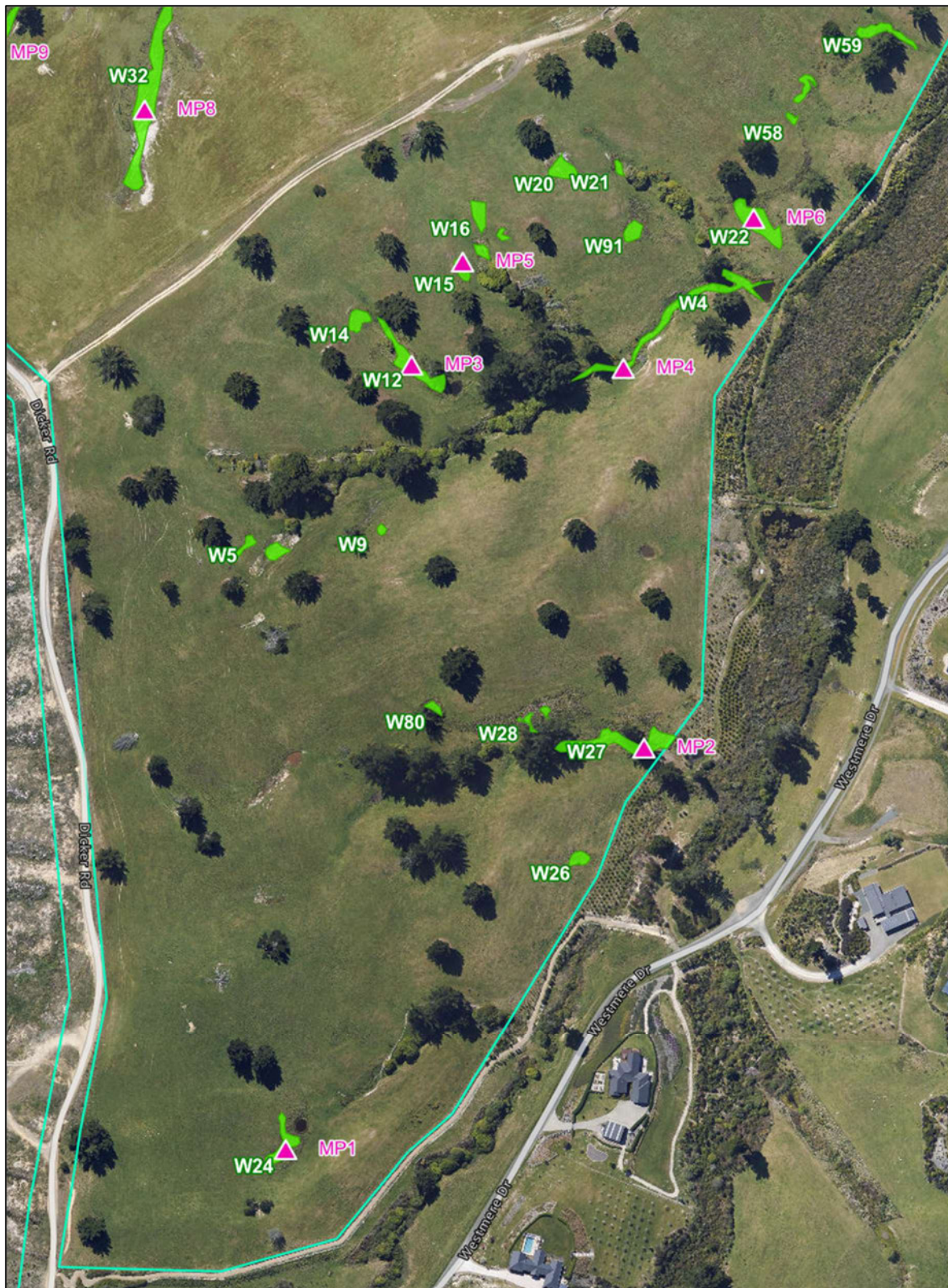


Figure 5: Eastern catchment (southern end) – location of wetland monitoring points (pink triangles and labels) and wetlands (green polygons and labels).

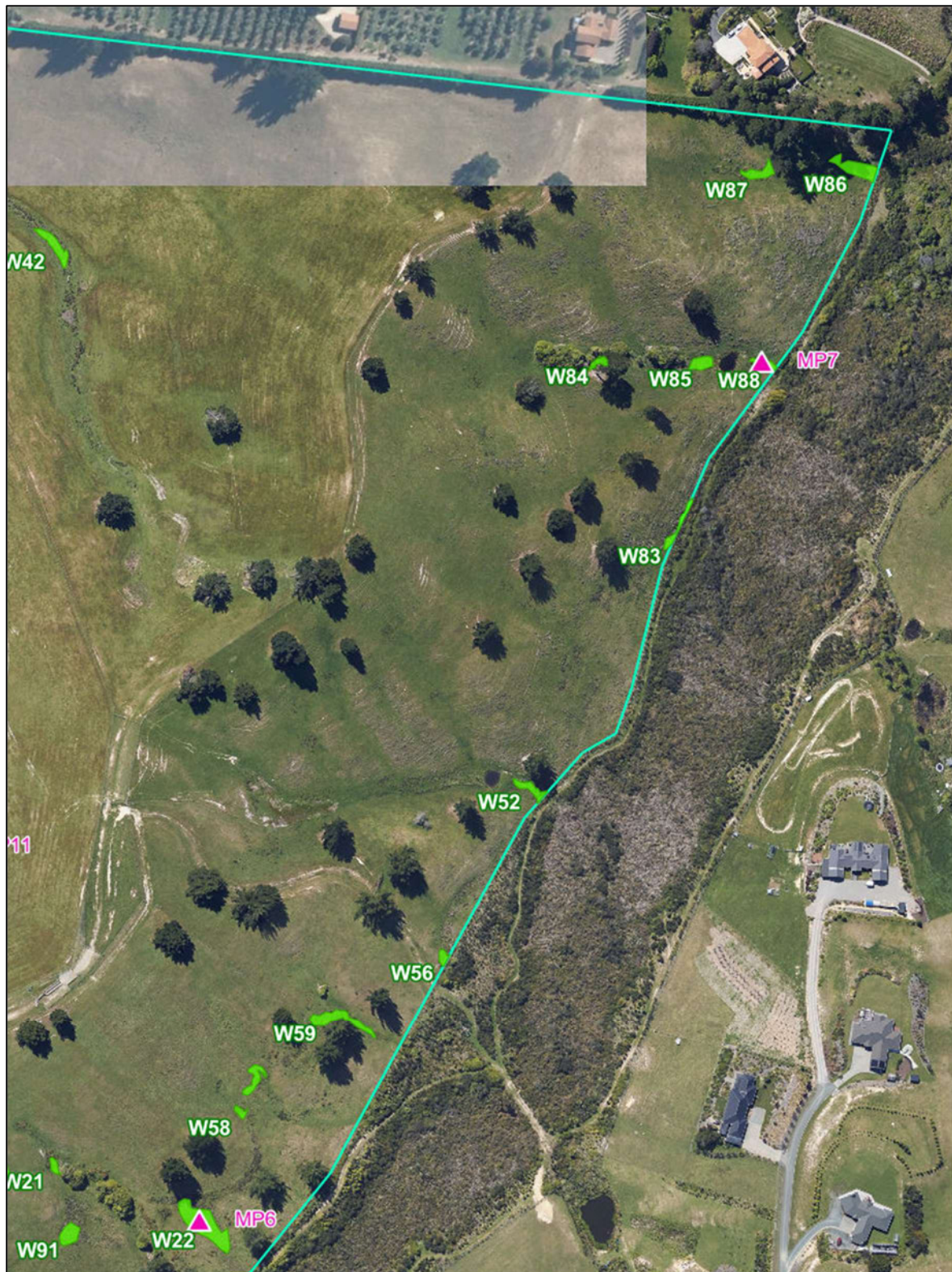


Figure 6: Eastern catchment (northern end) – location of wetland monitoring points (pink triangles and labels) and wetlands (green polygons and labels).

4.0 Timing of tasks

As the reason for monitoring is to provide assurance that the proposed earthworks and stormwater discharge systems are having no measurable adverse effect on the wetlands, the timing of monitoring will be based on the timing of earthworks for each stage of the development.

It is assumed that the majority of the site's earthworks will take place during the typical earthworks 'season' of October through to March. Wetland monitoring will therefore be undertaken during the summer (December to February) following commencement of earthworks within each earthworks stage. Wetland monitoring will take place during these summer months to ensure the data collected is comparable with the February 2022 baseline data.

A full round of monitoring across all the monitoring points will take place during the December-February prior to the commencement of earthworks in Stage 1, to ensure a complete set of baseline data is available for comparison with subsequent monitoring.

Monitoring will then continue on an annual basis at the wetlands within Stage 1. As subsequent earthworks stages start, monitoring at wetlands potentially affected by the earthworks will commence, and continue on an annual basis.

Monitoring will be undertaken on an annual basis, and will continue for a minimum period of 5 years following commencement of earthworks in each stage.

A summary of the monitoring tasks and timing is presented in **Table 3**.

Table 3: Summary of tasks and timing.

Task	Timing	Wetlands to be monitored	Frequency	Duration
Monitoring	Between December and February.	All	Once – second baseline data collection.	Once
- Wetland vegetation plots				
- Soil core assessments	Prior to start of earthworks in Stage 1.			
- Hydrology assessments				
- Wetland condition assessments				
Monitoring	Between December and February.	Wetlands within Stage 1	Annual	Five years
- Wetland vegetation plots				
- Soil core assessments	Following start of Stage 1 earthworks.			
- Hydrology assessments				
- Wetland condition assessments				

Task	Timing	Wetlands to be monitored	Frequency	Duration
Monitoring - Wetland vegetation plots - Soil core assessments - Hydrology assessments - Wetland condition assessments	Between December and February. Following start of all subsequent Stages.	Wetlands within the Stage, and/ or wetlands that may be affected by works within the Stage e.g., wetlands down-slope of earthworks areas.	Annual	Five years
Reporting	Within two months of each monitoring visit.		Annual	5 years for each stage of earthworks

Appendix A: Representative photographs of wetlands



Plate 1: Wetland W70 in the western catchment – a large valley floor wetland.



Plate 2: Wetland W36 in the western catchment – gully head wetland.



Plate 3: Wetland W33 in the western catchment – small gully head wetland.



Plate 4: Wetland W33 in the western catchment – a small gully head wetland.

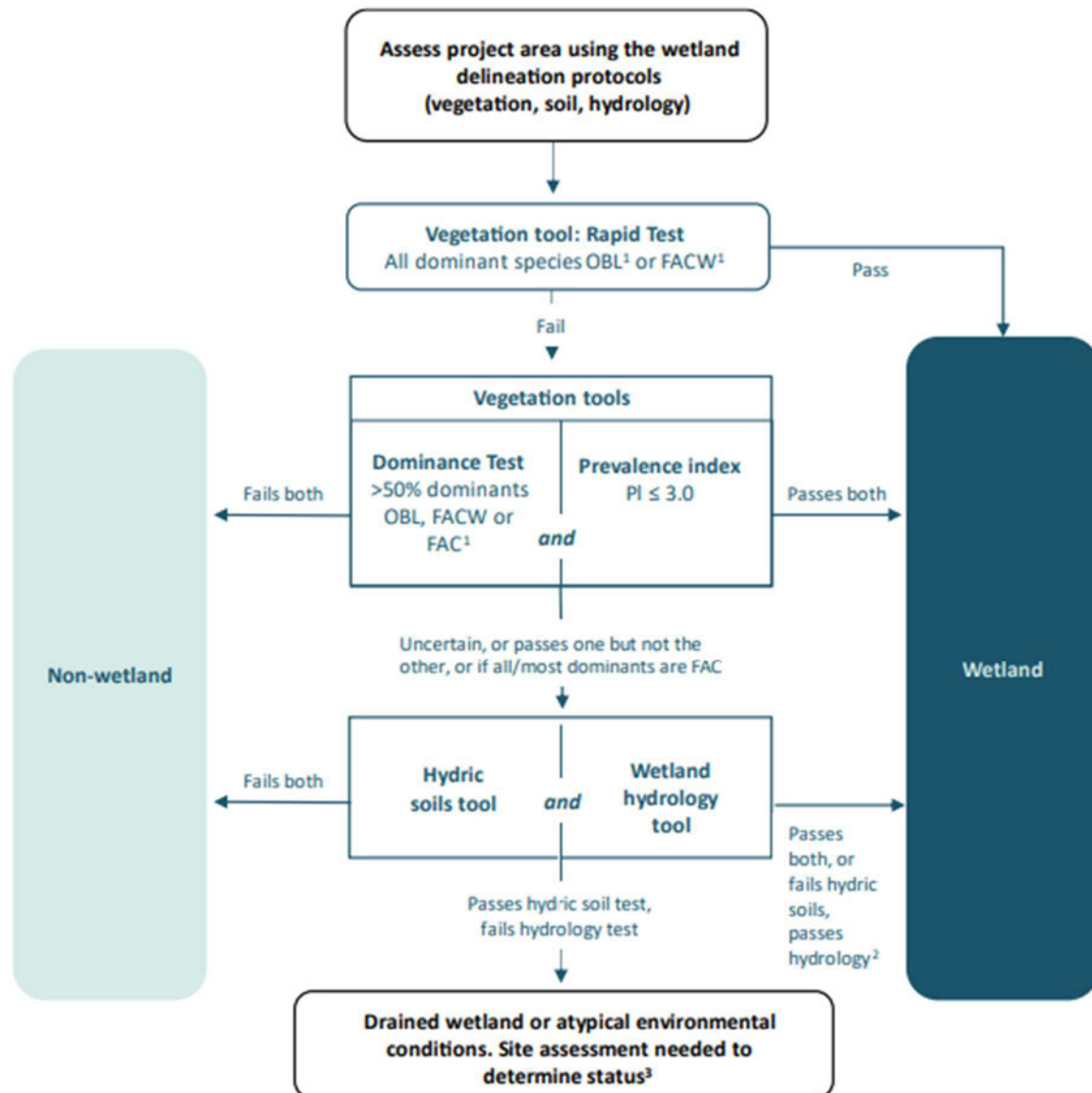


Plate 5: Wetland W27 in the eastern catchment – a small valley floor wetland.



Plate 6: Wetland W27 in the eastern catchment – a small valley floor wetland.

Appendix B: Summary flow chart of the process for determining the presence of natural inland wetland, as defined by the NPS-FM.



Footnotes:

¹ Wetland indicator status abbreviations: FAC = facultative, FACW = facultative wetland, OBL = obligate wetland.

² For example, recent wetland.

³ The US procedures for atypical or problematic situations are recommended.

Appendix C: Proposed staging of earthworks.

