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Rapid Biodiversity Assessment Site Report

CITY OF GREATER GEELONG

COGG Officer Details:	[redacted]	**Inspection Date:**	18/05/2022 and 7/05/2026	**RFS Number:**	RFS 2167337

Morena Drive Reserve – Version 3; Updated 25 August 2026

Revisions made to Sections 7, 9a and 11- as per the Further Information letter (21/07/2026).

Project Description: Address, location, area, size, overlays, zoning, land tenure, EVC	**The proposed scope of works includes:** The Highton Open Space Reserve project is about delivering concept plans for Stanbury Avenue Reserve, Esperance Crescent Reserve and Morena Drive Reserve with the focus on providing new and/or improved quality open space that meets community aspirations. The final concept plans will inform detailed plan and construction at each reserve. This RBA is focused on Morena Drive Reserve. The works within Morena Drive Reserve include constructing a concrete path, providing play equipment and a grass 'kick about space', installing garden beds and planting trees, and constructing a rock beach swale along most of the upper length of the gully line. The Reserve is sloped; the highest point is along the southern perimeter of the site, next to the Barwon Water service basin; and the lowest point is at the northern end of the site. An initial assessment of the reserve was undertaken in May 2022. A follow-up assessment was undertaken in May 2026. **Land Tenure:** Public park/open space reserve- public land and freehold land **Zone/s & Overlay/s:** • Public Park and Recreation Zone (PPRZ) in the southern tip the remaining is General Residential Zone (GRZ1) • No environmental planning overlays occur at the subject site.
Site Description	Morena Drive Reserve is an undeveloped local park with no existing formal tracks or infrastructure. There are some existing planted and remnant trees. The works to be undertaken within the reserve include constructing a formal track and rock beach swale, providing play equipment, and installing garden beds and planting trees. The site is located along a gully line which leads from the adjacent (to the east) Barwon Water service basin to the Barwon River. There appears to be a chain of connecting open space reserves located along the gully line, with Morena Drive Reserve being located at the top of the gully/chain of open space reserves.
Supporting documents:	Works Zone Map provided by Jack O'Neill.
Desktop Study (P&E Act Clause 52.17) Location (1, 2, 3), assessment pathway, EVC, Bioregion	**According to NVR and NatureKit:** **Bioregion**: Otway Plain **Ecological Vegetation Class**: EVC 175: Grassy Woodland **Bioregional Conservation Status:** Endangered **Location/Assessment Pathway**- Mixture of Locations 1 & 2 **Wetland's layer**- one mapped in the adjacent Barwon Water land **Threatened species**- VBA not checked, as no threatened species (flora) or habitat (fauna) was detected.

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1. BIODIVERSITY PRESENT

Remnant Patch	☑ Yes ☐ No	Two distinct areas were observed in the reserve- the wet and unmown gully line, and the dry and mown open space/grassy areas. Overall, 13 native vegetation patches were identified at the subject site. **<u>Gully Line</u>** The area in which six of the native vegetation patches were mapped (Patches 2 to 7) is in the unmown central section of the reserve which is very wet and appears to hold water across the year. The native vegetation patches were interspersed amongst very weedy areas (dominated by a mixture of Kikuyu grass, Toowoomba Canary-grass, Paspalum grass and Soursob), with scattered indigenous Rushes and other wetland vegetation also occurring amongst the weedy vegetation. The native vegetation patches were mostly dominated by one species. As the entire area is unmown, indicating it is wet all year, and as the gully would provide habitat for amphibians, reptiles and wetland birds; the entire gully area should be treated a 'no go' zone. **<u>Open Grassy Areas</u>** In addition to the gully line patches, five patches of Grassy Woodland represented as either Wallaby Grass patches or patches of Seaberry Saltbush (Patches 1, 7, 8, 10 & 13) were detected in the mown open grassy areas, along with exotic grass dominated areas containing some scattered Wallaby Grasses (<20% cover). Outside of the open grassy areas with Grassy Woodland patches, the remainder of the open space was dominated by exotic grasses/ herbaceous species. In addition, three wetland patches were also recorded in the lowest end of the reserve- Patches 9, 11 & 12. **The thirteen patches of native vegetation are described below:** • Patch 1 Grassy Woodland- 50-60% cover of Wallaby Grass • Patch 2 Plains Sedgy Wetland- approx. 70% cover of Marsh Club-sedge • Patch 3 Plains Sedgy Wetland - approx. 50% cover of Common Spike-rush • Patch 4 Plains Sedgy Wetland - approx. 70% cover of Common Spike-rush • Patch 5 Plains Sedgy Wetland - approx. 50% cover of Prickly Arrowgrass • Patch 6 Plains Sedgy Wetland - approx. 50% cover of Common Spike-rush • Patch 7 Grassy Woodland - Approximately 10 *Rhagodia candolleana* plants

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		• Patch 8 Grassy Woodland - 40-60% Wallaby Grass under planted trees • In the small dam in the north of the site there was a small patch (Patch 9) of EVC 647: Plains Sedgy Wetland. There was approximately 80% cover of *Eleocharis sp*, *Bolboschoenus caldwellii* and *Schoenoplectus tabernaemontani.* • Patch 10- Grassy Woodland- 25-40% Wallaby Grass in the north-east corner of the subject site. • Patch 11 is a very small patch of Tall Marsh with *Phragmites australis*. • Patch 12 is a larger patch of Tall Marsh that is dominated by *Phragmites australis* and is in the drainage line at the very northern extent of the subject site. • Patch13 contains two native saltbush species *Rhagodia candolleana* and the threatened species Fragrant Saltbush *Rhagodia parabolica*. This patch appears to be just outside of the survey area near the northern boundary of the subject site. **<u>Comparisons with the May 2022 Mapping</u>** Patches 1 to 6 were previously mapped in May 2022. The Lightwood Wattle mapped in 2022 was no longer present in the reserve. Patch 3 is now narrower than when it was mapped in 2022. The other patches were similar in extent and species composition to what had been mapped previously. Patches 7 to 13 were not mapped in 2022, as the extent of the assessment area increased in 2026.
Scattered Trees	☐ **Yes** ☑ **No**	N/a
Other Native Vegetation	☑ **Yes** ☑ **No**	**<u>Scattered Native Grasses</u>** Two distinct areas at the top/southern end of the reserve were noted where there was Wallaby Grass growing amongst the exotic mown grassy species. There was less than 25% cover of grasses in these areas, so they are not considered to be patches of native vegetation. Scattered wetland species (ie: Rush) were also observed along the gully line.
Fauna and Habitat	☑ **Yes** ☐ **No**	The gully line would provide habitat for amphibians, reptiles and wetland birds. Bird species observed during the fieldwork included White-Faced Heron, Straw Necked Ibis and Yellow-tailed Black Cockatoos. Common froglet *Crinia signifera* was heard calling at a few locations. The habitat values at the subject site may provide occasional foraging habitat for some wetland bird threatened species (ie: Egrets).

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2. FLORA LIST

NATIVE SPECIES Botanical Name / Common Name		Status	% Cover
Percentage Cover in Patch 1- Grassy Woodland EVC 175			
Wallaby Grass	*Rytidosperma spp*		**~50%**
Patch 2- Sedgy Wetland EVC 647			
Marsh Club-sedge	*Bolboschoenus caldwellii*		**70%**
Patch 3,4 and 6- Sedgy Wetland EVC 647			
Common Spike-sedge	*Eleocharis acuta*		**50-70%**
Patch 5- Sedgy Wetland EVC 647			
Prickly Arrowgrass	*Triglochin mucronata*		**50%**
Common Spike-sedge	*Eleocharis acuta*		**5%**
Patch 7- Grassy Woodland EVC 175			
Seaberry Saltbush	*Rhagodia candolleana*		**10 plants**
Patch 8- Grassy Woodland EVC 175			
Bristly Wallaby Grass	*Rytidosperma setaceum*		**10%**
Common Wallaby Grass	*Rytidosperma caespitosum*		**20%**
Patch 9- Sedgy Wetland EVC 647			
Marsh Club-sedge	*Bolboschoenus caldwellii*		**20%**
Common Spike-sedge	*Eleocharis acuta*		**10%**
River Club-rush	*Schoenoplectus tabernaemontani*		**40%**
Patch 10- Grassy Woodland EVC 175			
Bristly Wallaby Grass	*Rytidosperma setaceum*		**10%**
Common Wallaby Grass	*Rytidosperma caespitosum*		**20%**
Spear Grass	*Austrostipa sp.*		**5-10%**
Patch 11 and 12- Tall Marsh EVC 821			
Common Reed	*Phragmites australis*		**60-80%**
Rush	*Juncus sp.*		**10%**
Patch 13- Grassy Woodland EVC 175			
Seaberry Saltbush	*Rhagodia candolleana*		**5-10 plants**
Fragrant Saltbush	*Rhagodia parabolica*	**Vu (FFG)**	**3 plants**

SCATTERED TREES Botanical Name / Common Name	Tree I.D.	DBH (cm)	Removal?	Lopping?
N/A				

EXOTIC SPECIES Botanical Name / Common Name		Status	% Cover
Dominant (or CaLP Act listed) exotic species only listed			
Open Grassy Areas			
Serrated Tussock	**Nassella trichotoma*	**WONS, CaLP Act**	**5%**
Chilean needle- grass	**Nassella neesiana*	**WONS, CaLP Act**	**10%**
Kikuyu	**Cenchrus clandestinum*		**80%**
Soursob	**Oxalis pes-caprae*	**CaLP Act**	**5-10%**
Plantain	**Plantago lanceolata*		**5%**
Galenia	**Galenia pubescens*		**5-10%**

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EXOTIC SPECIES Botanical Name / Common Name		Status	% Cover
Gully Line			
Kikuyu	**Cenchrus clandestinum*		**50%**
Paspalum	**Paspalum dilatum*		**10-20%**
Toowoomba Canary-grass	**Phalaris aquatica*		**~20%**
Soursob	**Oxalis pes-caprae*	**CaLP Act**	**5-10%**
Galenia	**Galenia pubescens*		**5%**
Dock	**Rumex spp*		**5%**
Drain Flat-sedge	**Cyperus eragrostis*		**5%**

3. SIGNIFICANT BIODIVERSITY ☑ Yes ☐ No

Several patches of native vegetation were recorded across the reserve:

- Three defined patches of Wallaby Grass in the open grassy area/s, and several areas with scattered Wallaby Grass (less than 25% cover), also in the southern/higher open grassy areas.
- Numerous patches of wetland/aquatic species along the gully line, as depicted in Section 11.

All these patches were modified, and they were surrounded by degraded and very weedy areas.

The main biodiversity values within the reserve were the habitat values present along the gully line, which was defined by the 'no mowing' areas.

The gully line provides habitat for amphibians and reptiles, and wetland birds. The overall vegetation quality of the wetlands is moderate to low quality due to weed invasion. However, these open shallow wetland areas may provide occasional habitat for threatened wetland bird species such as several of the Egret species.

4. ENVIRONMENTAL OVERLAYS ☐ Yes ☑ No

N/a

5. ACTIONS UNDERTAKEN or DISCUSSED TO MINIMISE IMPACTS TO BIODIVERSITY

Potential native vegetation impacts from works associated with the landscape Concept Plan

- The Landscape Concept Plan for the reserve contains plans for two paths that run through the reserve, a rock lined swale and a new playground and grassed play space.
- The Plan appears to have the rock lined swale drain located immediately adjacent to several native vegetation patches (Patches 2,3,5,6 and 7). Given the site's topography, it is likely that the rock lined swale will be located along/adjacent to the lower contours of the gully, which is where Patches 2, 3 & 5 are located.
- The construction of the rock lined will swale will either directly or indirectly (through altering surface water flows or machinery movement) impact parts of these three patches of native vegetation.
- From a native vegetation/biodiversity and habitat perspective, it is recommended that the Landscape Concept Plan consider incorporating areas of wetland vegetation into the swale design- providing a mosaic of hard surface areas (the rock lined swale) and soft areas (shallow ephemeral drainage basins with wetland plants) along the swale; that would also retain bird habitat along the swale.
- The 'soft surface areas' could act as shallow ephemeral drainage basins, and the quality of the wetland areas could be significantly enhanced by native wetland plant species revegetation along with a water regime that encourages shallow wetland vegetation.

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- The preliminary proposed features and construction footprint are provided in Figure 2 in Section 10. The swale will (due to topography and battering/machinery movements) have impacts along the lower sides of Patches 2, 3 & 6.

- The impacts are associated with battering and a minor amount of machine movements on the native vegetation side of the swale. The construction methodology will be to work within the swale and on the outside of the swale (on the non-native vegetation patch side) where possible. These impacts are detailed in Section 7 of this RBA.

- There are also stockpile/soil removal works to depth of 500mm as per EMP requirements- which will impact all of Patch 7 and portions of Patches 4 and 6.

- The other proposed works within the Landscape Concept Plan appear to avoid impacts to native vegetation Patches 1, 5 and 8 to 13.

Planted Indigenous and Native Trees within the Reserve

- Works should be planned to maintain the indigenous and native trees that are within the reserve.

- The Tree Protection Zones of all trees should be protected from tree root impacts from any proposed earthworks (cut or fill) or machinery parking.

General Mitigation Measures

- All machinery movement or stockpiling should be restricted to the areas of non-native vegetation.

- Any stockpiles should be located at least 10m from native vegetation patches.

- Sediment controls should be implemented around any stockpiles, to prevent sediment flowing across the reserve.

- All retained native vegetation patches should be defined/temporarily fenced with parawebbing/bunting and capped star pickets during the construction works. A 2-5 metre buffer should be incorporated into the temporary fencing around the perimeter of all retained native vegetation patches.

- Figure 3, Section 10 depicts recommended parawebbing locations.

- The temporarily fenced native vegetation patches should be inspected by the Env Dept prior to any works commencing.

- Within the gully/recommended ‘No Go’ zone - the works should be timed outside of the breeding season for the common frog species recorded in the area- predominantly spring.

- Fauna salvage and relocation maybe required for amphibians and reptiles- depending when works commence.

- A Construction Environment Management Plan (CEMP) is recommended to manage impact mitigation measures for the reserve/native vegetation patches.

On-going Maintenance once Constructed

- In the longer term, it is likely that a mixture of wetland vegetation and weedy grasses will grow though and along the swale- this vegetation will likely provide habitat for amphibians and reptiles.

- A maintenance schedule that considers fauna and how to avoid impacts to fauna is recommended for the on-going maintenance of the swale.

- As the swale is located along a gully line, the use of herbicides to maintain the swale is not recommended.

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6. PLANNING REQUIREMENTS

P&E Act Native Vegetation Permit Required? ☑ Yes ☐ No

A permit is required for the removal of ANY native vegetation in Victoria, which includes wetland vegetation.

Therefore, a permit is required for the removal of native vegetation associated for any works that occur within any of the mapped native vegetation patches.

The extent of native vegetation impacts is provided in Section 7 of tis RBA.

Do any P&E Act 52.17 Exemptions apply? ☑ Yes, for current mowing regime ☐ No

The existing mowing regime that is undertaken in the reserve is consistent with the exemption for (mowing of native) Grasses in Clause 52.17-7 which outlines:

Native grass that is to be mowed or slashed for maintenance only, provided that the grass is:

- *Located within a lawn, garden or other landscaped area; or*
- *Maintained at a height of at least 10cm above ground level.*

There are no other relevant exemptions for native vegetation removal related to development associated with the Landscape Concept Plan.

FFG Act Permit Required? ☐ Yes ☐ No ☑ Maybe

None of the native vegetation at the subject site meets the definitions of an FFG Act Threatened Community.

A protected Flora Permit under the FFG Act is unlikely to be required unless there were planned impacts to the three Fragrant Saltbush plants (Patch 13) which appear to be located outside of the works area.

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EPBC Act Referral Required? ☐ Yes ☑ No

No, there are no Matters of National Significance within the works area.

None of the vegetation communities meet the definitions of any threatened vegetation communities listed under the EPBC Act.

The open shallow wetland area may provide occasional foraging habitat for some listed bird species under the EPBC Act such as Little Egret *Egretta garzetta*, Plumed Egret *Ardea intermedia plumifera* and Eastern Great Egret *Ardea alba modesta.* However, the potential removal of a small area of marginal habitat WILL NOT have a significant impact on any of these species.

Detailed Assessment Required? ☐ Yes ☑ No

The native vegetation removal would follow the Intermediate (Location 2) assessment pathway provided that the native vegetation impacts were restricted to less than 0.5 ha. If native vegetation impacts are greater than 0.5ha, then a detailed pathway assessment may be required.

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7. GENERAL OFFSETS

- *If "basic" or "intermediate" assessment - attach Native Vegetation Removal (NVR) using NVIM tool. Summarise removal and offset calculations here.*
- *If "detailed" assessment - a return site visit, habitat hectare assessment and detailed report required. Negotiate additional work and timeframes with the City Officer.*

The works will result in the removal of scattered native vegetation/indigenous grasses (from the grassy open space areas of the site, that will have no offset requirements); and the partial removal of Patches 2, 3 and 4; and the full removal of Patches 6 & 7 – all with associated offset requirements.

The area to be removed in each patch is outlined below:

- Patches 2 & 3 (partial removal impacts are combined) – 0.075ha
- Patch 4 (partial removal) - 0.019ha
- Patch 6 (full removal) – 0.008ha
- Patch 7 (full removal) – 0.003ha.

For partial removal of Patches 2, 3 and 4; and the full removal of Patches 6 & 7 - this would equate to the removal of 0.104ha of native vegetation (EVC 647: Sedgy Wetland).

Sections from the DEECA generated NVR report (for PARTIAL and/or FULL removal) of Patches 2, 3, 4, 6 and 7 are provided on the next page, plus it is also provided as a separate report.

The native vegetation removal generates an offset requirement.

This report should be sufficient for the planning permit application.

If less/more native vegetation than what is outlined in the NVR report is removed, then another NVR report will need to be generated.

Full and/or Partial Removal of Patches 2, 3, 4, 6 & 7

Summary of native vegetation to be removed

Assessment pathway	**Intermediate Assessment Pathway**		
Location category	Location 2 The native vegetation extent map indicates that this area is typically characterised as supporting native vegetation. Additionally, it is modelled as encompassing an endangered Ecological Vegetation Class, sensitive wetland or sensitive coastal area. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
Total extent including past and proposed removal (ha) *Includes endangered EVCs (ha): 0.104*	**0.104**	*Extent of past removal (ha)*	*0*
		Extent of proposed removal - Patches (ha)	*0.104*
		Extent of proposed removal - Scattered Trees (ha)	*0.000*
No. Large Trees proposed to be removed	**0**	*No. Large Patch Trees*	*0*
		No. Large Scattered Trees	*0*
No. Small Scattered Trees	0		

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Offset requirements if approval is granted

Any approval granted will include a condition to secure an offset, before the removal of native vegetation, that meets the following requirements:

General Offset amount [1]	**0.042 General Habitat Units**
Minimum strategic biodiversity value score [2]	0.281
Large Trees	0
Vicinity	Corangamite CMA or GREATER GEELONG CITY LGA

NB: values within tables in this document may not add to the totals shown above due to rounding

The availability of third-party offset credits can be checked using the Native Vegetation Credit Register (NVCR) Search Tool - https://nvcr.delwp.vic.gov.au

8. CONCLUSION / NEXT STEPS

If permits required state what next steps are i.e. talk to statutory planning to assist with application, organise consultant to undertake detailed assessment etc… If no permits required state 'no environmental permits are required to undertake works' and if Road safety exemption (RSE) applies, state what actions need to occur to comply with the RSE procedure.

If you have any questions about applying for a permit to remove native vegetation please contact the Statutory Planning Team. For native vegetation and environmental legislation enquiries please contact the Environmental Planning Team.

Native vegetation is present in the wet gully line as two distinct vegetation types either Plains Sedgy Wetland or Tall Marsh. All the patches are relatively low quality with limited indigenous species diversity and a high cover of high threat invasive weed species.

There are four patches of native vegetation located in the drier sections of the reserve that are degraded versions of EVC 175: Grassy Woodland. The remaining vegetation is limited to native Wallaby and Spear Grasses scattered amongst the dominant exotic grasses in the open space areas. Patch 13 has no native grasses but has several plants of the indigenous Seaberry Saltbush and threatened Fragrant Saltbush (FFG Act listed threatened species).

There is wetland bird, amphibian and reptile habitat associated with the unmown gully area in the reserve- in the mixture of wetland patches and weedy vegetation.

The main native vegetation and habitat impacts associated with the proposed works is the construction of the rock swale drain, which is located very close to and encroaches into five of the native vegetation patches (Patches 2, 3,4, 6 & 7).

If feasible it would be good to look at possible swale redesign options for incorporating 'soft areas' with native wetland vegetation into the design to increase the habitat values of the swale. This would still likely have impacts on the native vegetation patches located in/near the gully line; however, there may be longer term biodiversity benefits of improving the area and health of the gully vegetation.

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9. CLAUSE 52.17 APPLICATION REQUIRMENTS

The *Guidelines for the removal, destruction and lopping of native vegetation* (DEECA 2025) outline the application requirements to be provided for permit applications to remove native vegetation.

These requirements and the associated responses for the native vegetation impacts documented in this RBA are detailed below:

Application Requirements for a Permit to Remove Native Vegetation- INTERMEDIATE Pathway

No.	Application requirements	Response- INTERMEDIATE
1	Information about the native vegetation to be removed, including: • The assessment pathway and reason for the assessment pathway. This includes the location category of the native vegetation to be removed. • A description of the native vegetation to be removed. • Maps showing the native vegetation and property in context. • The offset requirement, determined that will apply if the native vegetation is approved to be removed.	• **Location 2** • **Intermediate Assessment Pathway** • **Native vegetation descriptions- Section 1.** • **Maps- Section 11.** • **Offset requirements- Section 7.**
2	Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate.	**The reserve is on a slope, with the highest point at the northern end of the reserve, with the reserve sloping southwards.** **There is an ephemeral gully line near the middle of the reserve.**
3	Recent photographs (dated) of the native vegetation to be removed.	**Refer to Section 12.**
4	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged.	**N/a**
5	An avoid and minimise statement. The statement describes any efforts to avoid the removal of, and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value.	**Refer to Section 9a below.**
6	A copy of any property vegetation plan that applies to the site.	**N/a**
7	Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay.	**N/a**
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan	**N/a**
9	An offset statement explaining that an offset that meets the offset requirements for the native vegetation to be removed has been identified and how it will be secured.	**Offsets will be provided via a third-party broker.**
10	A site assessment report of the native vegetation to be removed, completed by an accredited native vegetation assessor.	**Refer to Sections 1 & 2.**

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9A. AVOID AND MINIMISE STATEMENT

An initial ecological assessment was undertaken of the upper/northern portion of the reserve in May 2022 as part of Master Planning for the reserve; which mapped Patches 1 to 6 and a Lightwood Wattle in the northern portion of the reserve.

One of the main reasons that Patches 2, 3, 4, 5 & 6 have survived within the reserve is that they are located along the gully line, a naturally wetter area that is only infrequently mown. If the area had been mown regularly, it is unlikely the wetland vegetation in these patches would have survived.

Following the initial assessment, a Concept Plan was prepared for the reserve which located the proposed infrastructure (the playground, open/kick around space, pathways, garden beds and a rock beach swale) outside of the mapped native vegetation patches.

As part of on-going design works, this second RBA/ecological assessment was undertaken in May 2026. During the second assessment, a CoGG GIS Officer attended the site to capture the extent of native vegetation patches – to fed directly into the Concept Plan mapping.

The second ecological assessment covered the entire reserve and the results of that mapping were:

- Patches 1 to 6 were in the same locations as previously mapped.
- Patch 3 is now narrower than when it was mapped in 2022. The other patches were similar in extent and species composition to what had been mapped previously.
- The Lightwood Wattle was no longer present.
- Patches 7 to 13 were not mapped in 2022, as the extent of the assessment area increased in 2026. These patches are all located near the southern end of the reserve.

The May 2026 ecological assessment also noted that whilst most of the proposed infrastructure was located outside of the native vegetation patches- the rock beach swale had been designed on the side of the slope (to avoid Patches 2, 3, 5 & 6) and was not practical. Patches 2, 3, 5 & 6 are all located in the lower points of the ephemeral gully line and contain some wetland vegetation fragments that are associated with the gully line.

As the swale will need to be constructed along the gully line, it has been realigned from the initial Concept Plan and it now impacts some of the edges of Patches 2, 3 and 6- either directly or indirectly (due to the associated construction/ machinery access zones). In addition, there are also impacts to Patches 4, 6 and 7 associated with stockpile removal and rubble capping as required under the sites EMP.

These impacts to the edges of the three native vegetation patches along the swale have been located to minimise impacts to these patches and to avoid dissecting the patches into two, as depicted in the maps in Section 11, Figure 3. These impacts equate to the removal of between 1-8m wide strips of the edges of these three patches. Due to site EMP there will also be impacts to three native vegetation patches due to soil/stockpile removal and rubble capping requirements.

There will be no impacts to any of the other mapped native vegetation patches, or associated with the construction of the playground, open/kick around space, pathways and garden beds.

Mitigation measures to ensure that impacts to the other patches are avoided, and that further impacts to patches 2, 3 and 4 are minimised are provided in Section 5 of this RBA.

It is recommended in Section 5 of this RBA, that ‘soft areas’ be incorporated into the swale, that can be planted out with wetland vegetation that will increase the extent of wetland vegetation in the reserve, and will provide habitat values along the swale.

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10. OTHER COMMENTS

Please include any other relevant/interesting information.

Assessment undertaken by: Marty White and Katherine Smedley

Company: Sundew Ecological Services

Contact Details: 0491 711 899

Shapefiles of Area Surveyed Provided: ☑ (tick here if 'yes')

Signed: K. Smedley

Date: 7/06/2026. Updated 25/08/2026.

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11. MAP- Figure 1 - Morena Drive Reserve- Native Vegetation Patches & Proposed Works



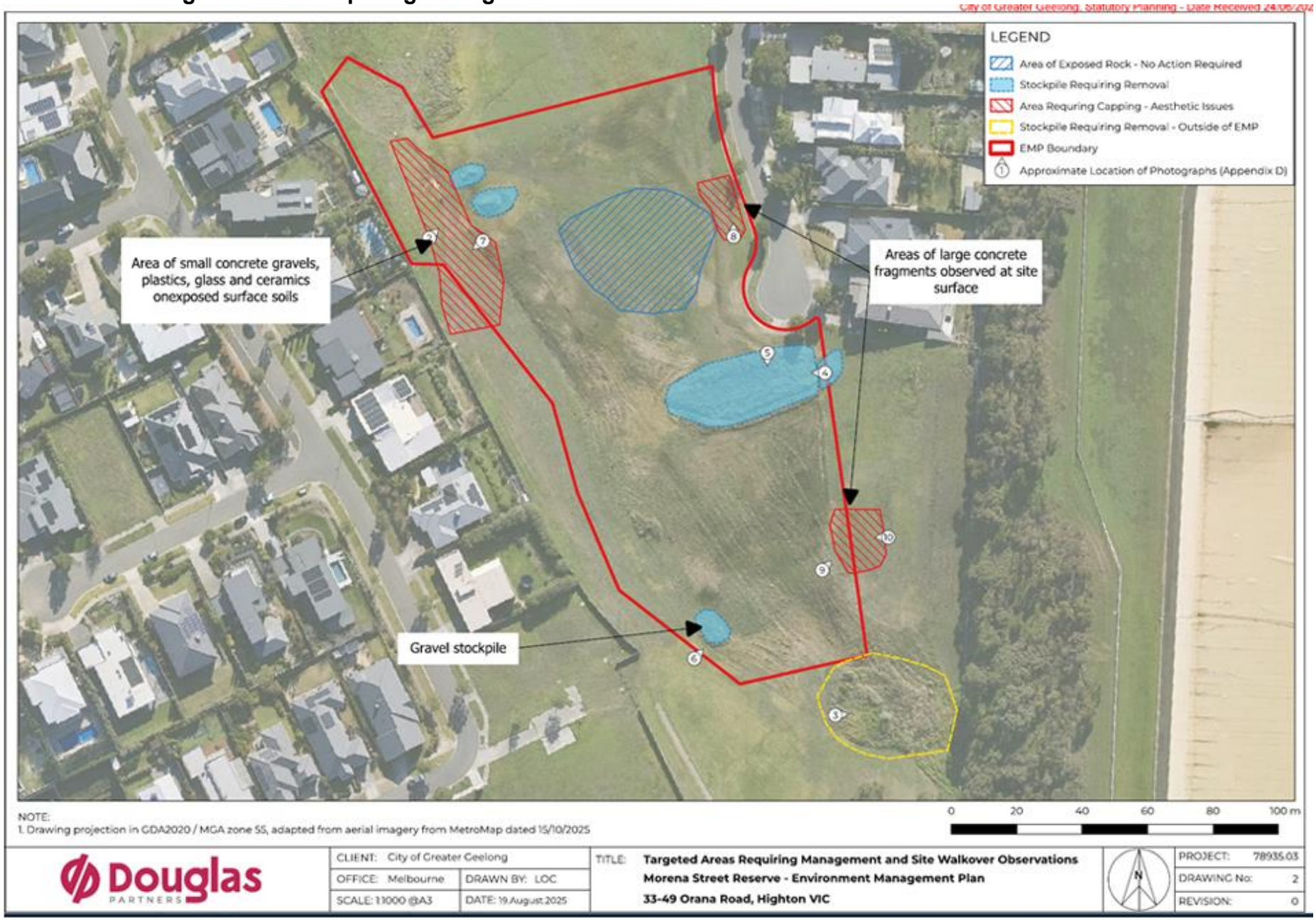
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Figure 2 - Native Vegetation Impacts and Proposed Mitigation Measures



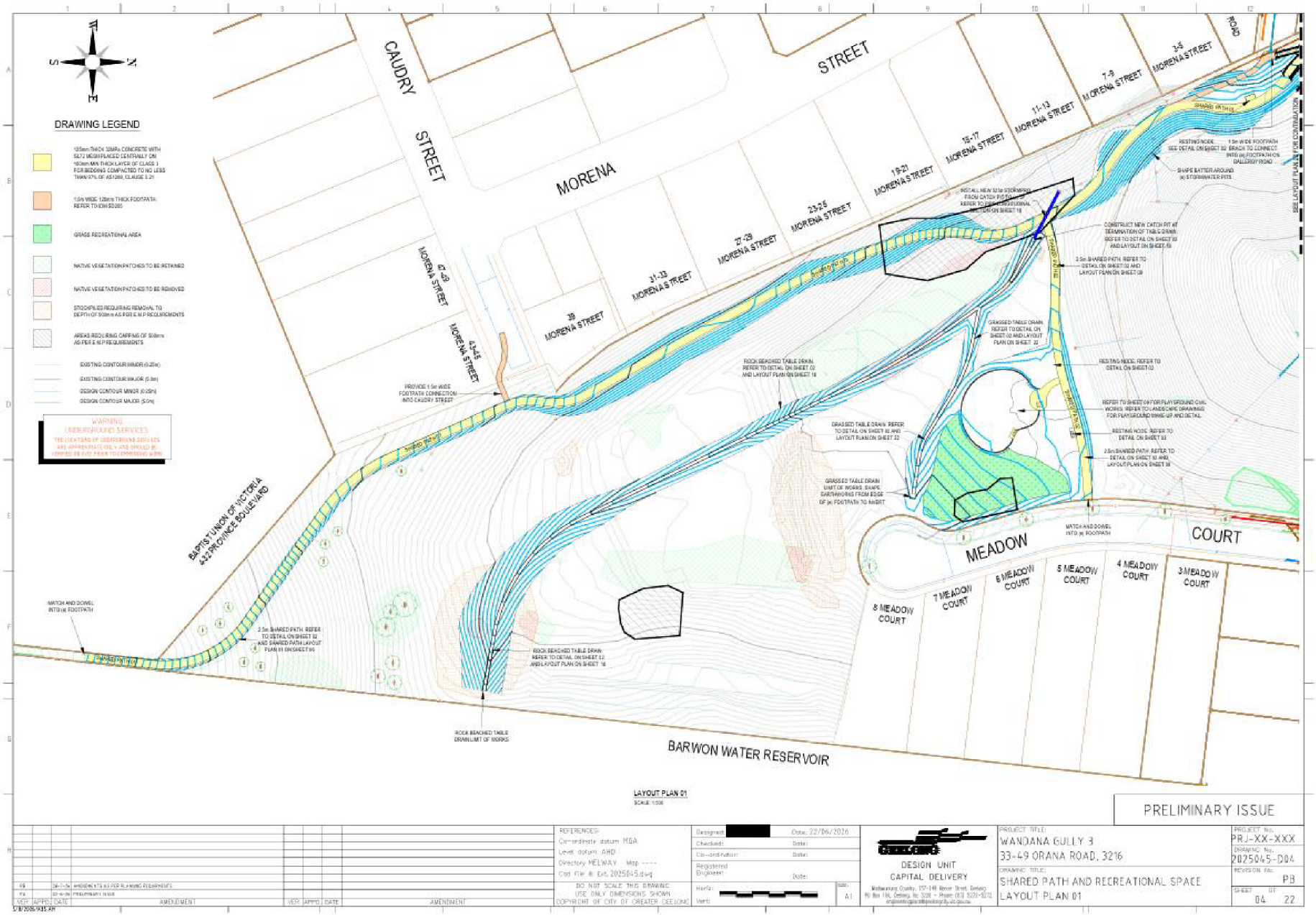
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Figure 3- EMP Plan- Targeted Areas requiring Management



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Figure 4 – Layout Plan (depicts stockpile removal locations & Areas to be Capped)



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12. PHOTOGRAPHS



Patch 2- Plains Sedgy Wetland (Yellow polygon). Photo looking west.



Patch 3 Plains Sedgy Wetland (Yellow Polygon). Located right on the break of slope. Photo looking south.



Patch 4 Plains Sedgy Wetland. Photo looking north.

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Patch 5 Plains Sedgy Wetland. Photo looking north.



Patch 6 Plains Sedgy Wetland (yellow polygon). Photo looking east.



Patch 7 Seaberry Saltbush plants. Photo looking east.

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Patch 8 Native grass under planted native trees (yellow polygon). Photo looking east.



Patch 9 Plains Sedgy Wetland (yellow polygon) in dam. Photo looking east.



Patch 10 Native Wallaby and Spear Grass (yellow polygon). Photo looking south.

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Patch 11 Tall Marsh. Common Reed *Phragmites australis.*



Patch 12 Tall Marsh (yellow polygon) between small and large dam. Photo looking east.



Patch 13 Seaberry Saltbush plants. Photo looking north-east.

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Threatened Species- Fragrant Saltbush in Patch 13.



Threatened Species- Fragrant Saltbush in Patch 13. Photo looking south.