Amendment C387 ggee to the Greater Geelong Planning Scheme

Landscape Architecture Evidence

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8 April, 2024

mlc murphy landscape consultancy
landscape architecture + urban design

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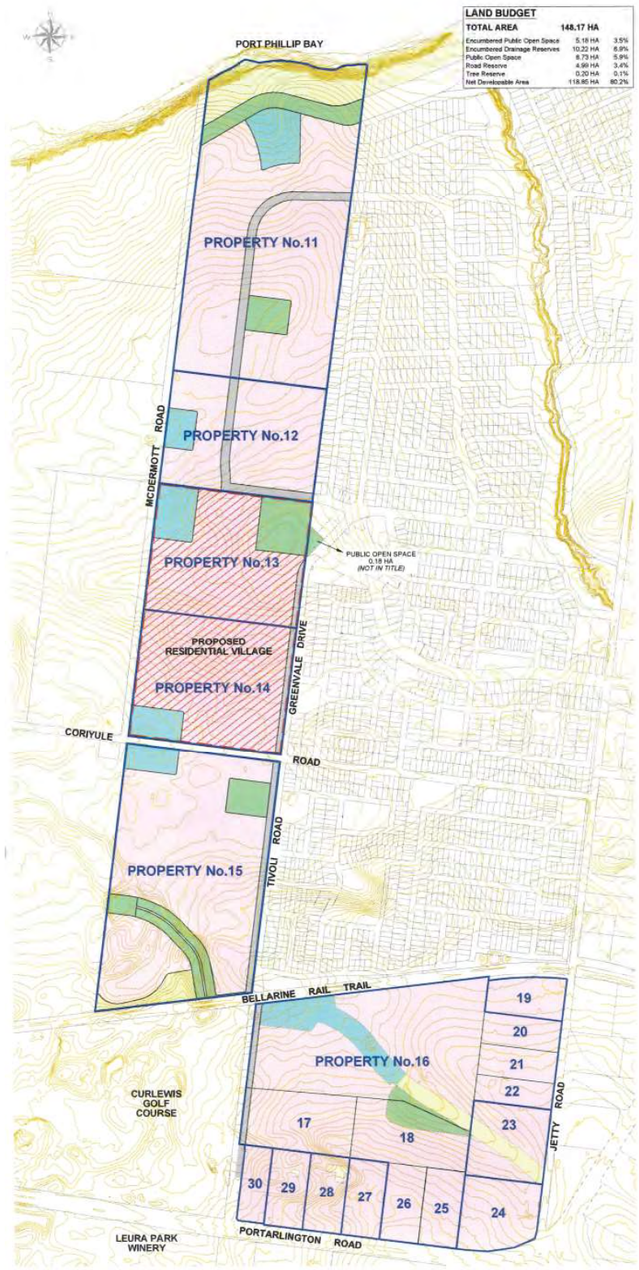


Figure 1.1 - Subject site showing Property Numbers

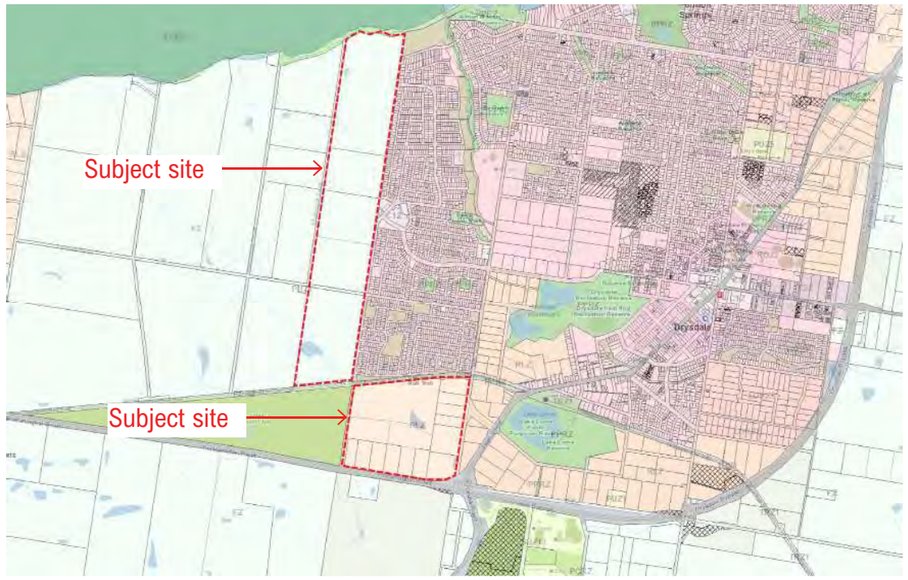


Figure 2.1 - Site Location (VicMap)

1 Introduction

1. I have been engaged by Norton Rose Fulbright on behalf of "the Developer Group" (including APD, Stockland and SOHO Living) to review landscape architectural issues in relation to Amendment C387ggee to the Greater Geelong Planning Scheme. The land is known also as the Jetty Road Urban Growth Area – Stage 2.

2. Specifically, I have been engaged to:
   - Review the draft Amendment documents and background materials;
   - Consider the appropriateness of the proposed Amendment from a landscape architectural perspective; and
   - prepare expert evidence considering landscape matters in relation to the Amendment, with particular focus on:
     - the grading and batter slopes of the drainageway south of the Bellarine Rail Trail within Property No. 16;
     - the urban interface to the District Park opposite the Neighbourhood Activity Centre; and
     - the rural interface on McDermott Road for the extent of Property Nos. 13 and 14.

   (Refer to Figure 1.1 for property number identification.)

3. Since the initial engagement in December, 2023, I have provided preliminary verbal responses in relation to the drainageway civil engineering and landscape proposals and provided input into the landscape design of an alternative drainageway approach to that of the exhibited documents.

4. In preparing this report I have:
   - inspected the subject site, surrounds and similar developments within the City of Greater Geelong;
   - reviewed a range of background documents to the proposed Amendment;
   - reviewed the original and proposed amended landscape architectural plans listed below;
   - reviewed the exhibited engineering, ecological and arborist reports (and relevant updates);
   - reviewed the Council's comments and correspondence of 31 May 2023 to the Developer Group;
   - reviewed proposals for Property Nos. 13 & 14; and
   - reviewed matters raised by various submitters following the exhibition of the Amendment.

5. In relation to the drainageway, the landscape architectural plans reviewed

5. In relation to the drainageway, the landscape architectural plans reviewed include:

   - the exhibited drainageway landscape design by SMEC, shown in *Curlewis Wetland Park, Draft Landscape Master Plan (PDF document "30043260L_ Curlewis Wetland Report_230711_RevO Final.pdf");* and
   - the amended proposed landscape concept plan *1421 Portarlington Road, Curlewis, Local Park and Wetland Reserve, Landscape Concept Plan (05.04.2024);*

2 The Site

2.1 Location and Description

6. The Jetty Road Urban Growth Area – Stage 2 covers an area of approximately 150 ha and is comprised of 20 individual titles that form two main blocks of land as follows:

   - the southern group of titles located northeast of the intersection of Portarlington Road and Tivoli Drive, Curlewis, south of the Bellarine Rail Trail (property numbers 16 – 30); and
   - the northern group located north of the Rail Trail, between Tivoli Drive/ Greenvale Drive and McDermott Road, extending to the northern coast (property numbers 11 – 15). (Refer to Figures 2.1 and 2.2.)

7. The land is currently in non-urban uses, with the southern 'block' being in a Rural Living Zone and the northern 'block' in a Farming Zone.

8. As can be seen in the aerial photograph, the southern parcels are a range of open grazing paddocks and variably-treed rural-residential allotments. There is a number houses along the Portarlington Road frontage and another toward the centre of the parcel. A number of dams are located on the site, with a large one in a gully toward the centre of the site. This southern portion of the land falls relatively gently toward the north and north-west, generally at grades between 1:12 to 1:25, though there is a small steeper section toward the south west, at the northern end of the Portarlington Road parcels. Refer to Figures 2.3 and 2.4.

9. There is a number of existing trees scattered across the site, with only one, Tree #44 – a large old River Red Gum – designated as significant in the arborist's report. (Refer Figure 2.5.)

10. The northern parcels are larger land holdings and appear to be both cropped and grazed. Tree cover varies across the parcels, taking the form of windrows (generally along property boundary lines) and groups of trees around farm houses and outbuildings. Again, variably sized dams are located across the site, with the largest being toward the southern end of the parcels. This block of parcels has a high point around the centre, near the Neighbourhood Activity Centre and then falls from there north-north westward toward the bay and south-southwest toward a low point around Coriyule Road before rising again toward the Rail Trail.

Figure 2.2 - Site Location (Nearmap 29.01.2024)

11. Photographs of the southern 'block' of parcels are shown in Figures 2.6 to 2.8. Photographs of the northern 'block' are shown in Figures 2.9 to 2.12.

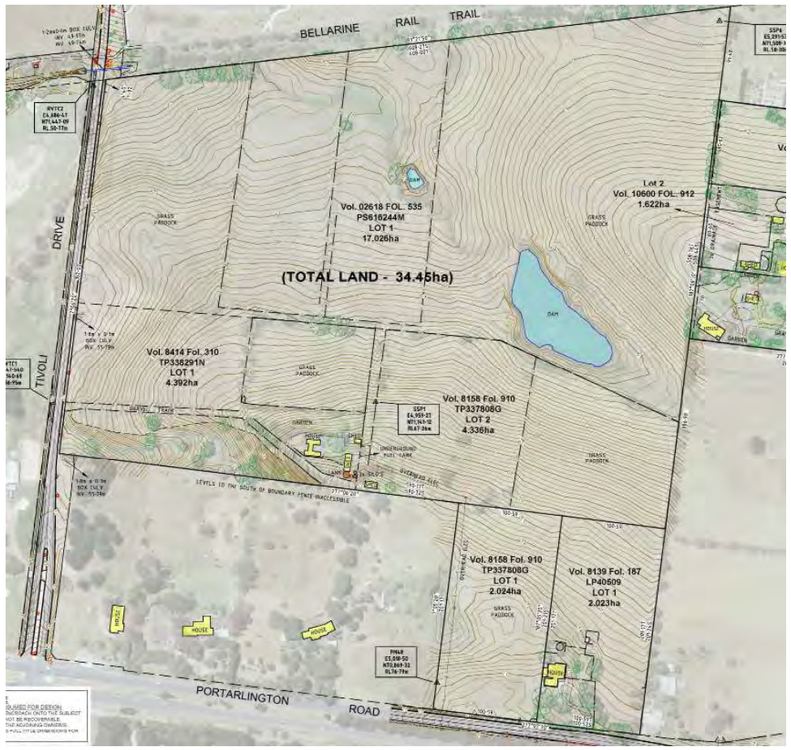


Figure 2.3 - Feature and level survey of southern sites (SMEC)

Figure 2.4 - Elevation map of southern sites (SMEC)

Figure 2.5 - Existing Tree #44, River Red Gum

Figure 2.6 - Southern sites from N-E corner at Bellarine Rail Trail edge

Figure 2.7 - Panorama from toward the centre of southern sites looking east and south

Figure 2.8 - Panorama of southern sites from around centre of northern boundary (adjacent to Rail Trail fence)

Figure 2.9 - Panorama of Properties 13 & 14 from near the north-east corner of the site

Figure 2.10 - Panorama of Properties 13 & 14 from the corner of Coriyule Road and McDermott Road

Figure 2.11 - Panorama of Properties 15, 14 & 13 from Tivoli Drive

Figure 2.12 - Panorama of Property 15 from Coriyule Road at the southern end of McDermott Road

2.2 Site Context

12. The northern parcels are bound on the east by Tivoli Drive, Greenvale Drive and Pierview Drive and existing urban development to the east. They are bound on the north by Corio Bay and to the west by farmland. The Bellarine Rail Trail forms the southern extent, with the Curlewis golf course further south again. The northern end of Property 13 is opposite the existing Neighbourhood Activity Centre in Stage 1 of Jetty Road Urban Growth Area.

13. The southern parcels are abutted on the west by Tivoli Drive, with the Curlewis golf course across the road. To the north is the Bellarine Rail Trail and then urban development, while to the east is rural residentially zoned land with houses on large allotments. At the southern end of this interface is a petrol station (separated from the site by Hackwill Place.) South of these southern parcels is Portarlington Road with rural land uses across the road further south. Leura Park Estate, a vineyard and winery, is located south-west of the site.

3 Planning Context

14. In relation to things that affect landscape on the rezoning area, Amendment 387 ggee seeks to rezone the subject land to General Residential Zone and to introduce a Schedule to the Development Plan Overlay (*Schedule 46 to Clause 43.04 Development Plan Overlay*.)

15. That Schedule outlines the following Objectives:

    To provide an attractive, liveable and sustainable urban environment inclusive of a range of residential densities and dwelling types.

    To protect and enhance areas with cultural, biodiversity and landscape value, including the foreshore, significant vegetation, the waterway corridor, and indigenous heritage.

    To ensure subdivision and development responds to the topography, natural features and key views within the growth area, as well as interfacing rural, coastal and residential land.

    To provide a permeable movement network of parks, landscaped streets and shared paths which connect to adjoining residential land, the foreshore reserve, Bellarine Rail Trail, neighbourhood activity centre and nearby community facilities.

    To co-ordinate development infrastructure sequencing and staging, including the early delivery of a boulevard-style Tivoli Drive and Greenvale Drive.

16. The Schedule requires the preparation of a Development Plan which must incorporate an Urban Design Masterplan that includes:

    - *Interface treatments to the rural land to the west and south, guided by the **C387ggee Development Plan Overlay Schedule 46 Background Landscape Report, November 2022, City of Greater Geelong**. For the Northern Residential Area and Central Residential Area A, treatment includes vegetation planting within McDermott Road reserve. Service infrastructure should be located outside land required for interface treatments where it conflicts with landscape outcomes.*

17. The Development Plan must also incorporate an Integrated Water Management Plan that is to be guided by the "*Final Report Jetty Road Rezoning – Stage 2 SWMS, Water Technology, Version 07, 15 February 2023"* and include:

    - *Reference to:*

      – WSUD Engineering Procedures: Stormwater CSIRO Publishing 2005.

      – Clause 56.07 of the Greater Geelong Planning Scheme.

      – The Infrastructure Design Manual and associated Design Notes.

    - *A cross-section of the constructed waterway and corridor reserve consistent with the Melbourne Water Waterway Corridors guidelines version 1 October 2013, and also having regard to ancillary open space functions of the waterway corridor.*

    - *For the Southern residential Area, the plan must also be guided by the Final Report, Jetty Road South of Rail Trail SWMS, Water Technology, Version 06, 6 September 2023.*

18. This section of the Schedule also goes on to require that "*The final design of the waterway corridor reserve, retarding basins, wetlands, and associated paths, sediment drying areas, maintenance access areas and planting, must be to the satisfaction of the Responsible Authority."*

19. The Development Plan must also include an **Open Space and Landscape Masterplan**, criteria for which are outlined in the Schedule, as well as the requirement for "*concept plans*" to the satisfaction of the Responsible Authority for the Foreshore Reserve, District Park and Local Parks (of approximately 1 hectare.)

20. Under the heading of ***Specific Land Use and Development***, the Schedule outlines specific requirements for *Residential village and Retirement village*, with those affecting landscape being:

    – Any boundary fencing installed should be of low height, transparent in design, and be sympathetic to the urban or rural character.

    – Dwelling frontage should ensure strong passive surveillance and contribute towards activation of the public realm.

    – Trees should generally be located to provide shade to paved surfaces, with specific focus on shading pedestrian paths.

    – Where the use interfaces with the western boundary rural land:

      - *A landscape plan must be prepared showing generous planting including canopy trees within the rural interface reserve.*

21. The following sections of this evidence describe and review the three main items of landscape concern outlined above, namely:

    - the batter slopes of the southern wetland/waterway south of the Bellarine Rail Trail within Property No. 16;
    - the urban interface to the District Park in Property No. 13, opposite the Neighbourhood Activity Centre; and
    - the rural interface on McDermott Road for the extent of Properties Nos. 13, 14 and 15.

4 Southern Wetland/waterway

4.1 Background

22. The landscape proposals shown in the exhibited documents (*Curlewis Wetland Park, Draft Landscape Master Plan Rev 0, SMEC, 11 July 2023)* were based on the drainageway design included in the exhibited SWMS report (*Final Report, Jetty Road South of Rail Trail SWMS, Water Technology, Version 06, 6 September 2023*) Figure 4.1 shows this landscape concept.

23. These landscape proposals were predicated on there being no batter slopes steeper than 1:6, as shown in SMEC's slope analysis in Figure 4.2. This approach, which I am instructed was driven by discussions with Council, resulted in a land requirement of some 4.2 ha for the drainageway within Property No. 16. As can be seen in Figure 4.1, the landscape approach was essentially to:
    - vegetate the immediate batters of the wetland and sediment basin cells of the waterway
    - provide grass and tree planting to the remaining areas above the Q100 level; and
    - integrate a shared path along the southern edge of the linear open space, as well as a duplication of this shared path on the north side of the waterway opposite the local park component.

24. It is worth noting that in my view, the extent of land-take for this version is inadequate to accommodate all the elements that would in reality be required in the final landscape design. The "*Draft Landscape Master Plan, Rev O*" is insufficient in that:
    - it does not allow sufficient verge space from back of kerb to the shared path given there are 13.5m edge road reserves along the southern edge of the waterway and at the eastern end of the drainageway; and
    - it does not have sufficient land for a 1.5m pedestrian path and verge width along the northern side of the drainageway.

    My assessment is that these two elements would create a requirement for an additional 0.14 ha of land in the SMEC version of the landscape master plan.

Figure 4.1 - Curlewis Wtland Park, Draft Landscape Master Plan, Rev O, 11 July, 2023 (SMEC)

4.2 Council requirements and design criteria

4.2.1 Relevant Guidelines

25. As noted above, in relation to the preparation of an Integrated Water Management Plan, Schedule 46 requires reference to:
    - WSUD Engineering Procedures: Stormwater CSIRO Publishing 2005.
    - Clause 56.07 of the Greater Geelong Planning Scheme.
    - The Infrastructure Design Manual and associated Design Notes.

26. In addition to these requirements, Council's letter to APD of 31 May, 2023 requested the following standards "*should be used as a guide*":
    - Design Note 2: Stormwater Detention Storage Design (City of Greater Geelong)
    - Design Note 3: MUSIC – Modelling Approach and Parameters for use with the City of Greater Geelong
    - Design Note 3: Wetlands and Ponds (City of Greater Geelong)
    - Landscape Standards Manual (City of Greater Geelong)
    - Constructed Wetland Design Manual (Melbourne Water)
    - Constructed Waterway Design Manual (Melbourne Water)
    - Construction and establishment guidelines: swales, bioretention systems and wetlands guideline (Water by Design)

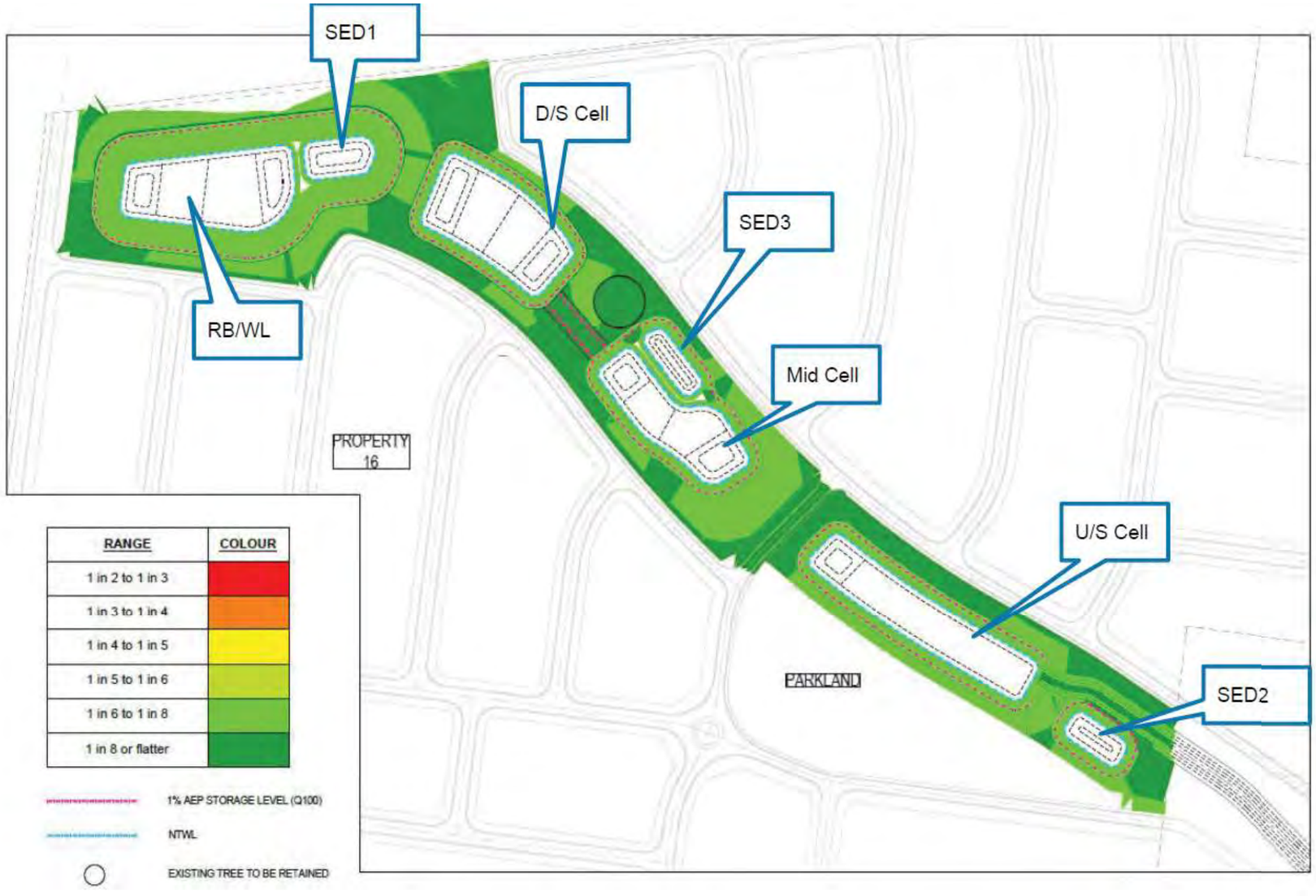


Figure 4.2 - Slope analysis by SMEC (based on civil design embodied in Water Technology SWMS, Version 6, 6 September 2023.)

4.2.2 Schedule 46 required references

WSUD Engineering Procedures: Stormwater CSIRO Publishing 2005

27. This publication provides extensive information on the design of sedimentation basins, bioretention swales, bioretention basins, sand filters, swales and buffer strips, constructed wetlands, ponds and lakes, and aquifer storage and recovery. In relation to external batters to wetlands, it suggests 1:5 maximum batters within the "ephemeral zone" (i.e. between NWL and TED.)

28. In section 9.3.3.4 however, it notes that:

A gentle slope to the water's edge and extending below the water line should be adopted before the batter slope steepens into deeper areas. An ***alternative to the adoption of a flat batter slope*** *is to provide a 3 m 'safety bench' that is less than 0.2 m deep below the permanent pool level and built around the wetland.* (My emphasis.)

This alternative approach then accommodates external batters steeper than 1:5.

Clause 56.07 of Greater Geelong Planning Scheme

29. This clause covers **Integrated Water Management** and in relation to stormwater, identifies the following objectives:

To minimise damage to properties and inconvenience to residents from stormwater.

To ensure that the street operates adequately during major storm events and provides for public safety.

To minimise increases in stormwater and protect the environmental values and physical characteristics of receiving waters from degradation by stormwater.

To encourage stormwater management that maximises the retention and reuse of stormwater.

To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

30. **Standard C25** under these objectives states:

The stormwater management system must be:

- *Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority.*
- *Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of stormwater is proposed.*
- *Designed to meet the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater - Best Practice Environmental Management Guidelines (Victorian Stormwater Committee, 1999).*
- *Designed to ensure that flows downstream of the subdivision site are restricted to pre-development levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts.*
- *Designed to contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.*

The stormwater management system should be integrated with the overall development plan including the street and public open space networks and landscape design.

31. The clause provides no specific guidance in relation to detailed design issues such as batter slopes.

Infrastructure Design Manual

32. The IDM sets out a range of requirements for floodways and wetlands. In Section **16.18 Flood ways**, it notes that the "*minimum requirements that apply to design and treatment of flood ways, and open unlined drains, are as follows:*

• The depth of flood ways should be kept to a minimum (generally less than 1.2m).

• The desirable maximum batter slope is 1:8; the absolute maximum slope is 1:5.

• The desirable minimum cross-fall for inverts is 1:40, and the minimum bed width 2.5m."

33. In relation to sediment basins and wetlands, sections **20.3.7 Sedimentation Basins** and ***20.3.8 Constructed Wetlands*** generally indicate that batter slopes external to the basin or wetland "*should be no steeper than 1:5."* The manual notes the need for 1.5m minimum width "safety benches" below normal top water level with a maximum 1:8 slope.

4.2.3 Additional required references

34. Of the list of additional requirements outlined in Council's letter noted above in Section 4.2.1, only the following documents provide guidance on batter slopes.

CoGG Landscape Standards

35. The **City of Greater Geelong's Landscape Standards** address Water Sensitive Urban Design with references to the Royal Lifesaving Society of Australia's 'Guidelines for Water Safety in Urban Developments'. The document addresses design criteria (such as batter slopes) via reference to Melbourne Water documents as follows:

"The construction of wetlands the planting of ephemeral and aquatic plants in and around Water Sensitive Urban Design (WSUD) features including wetlands, retarding basins, bioretention basins and raingardens should be undertaken in accordance with the following guidelines:

- *Melbourne Water 'Constructed Wetland Guidelines';*
- *Melbourne Water 'Constructed Waterways in Urban Developments'."*

Melbourne Water Guidelines

36. The "*Constructed Waterways in Urban Developments*" (listed above) has been superseded by the "***Constructed Waterways Design Manual***" (Melbourne Water, 2019.) In that document's section **E2.5 Waterway maintenance requirements** batter slopes are described as preferably being no steeper than 1:5 "*unless there is special landscape edge treatment that will provide appropriate safety measures/fencing*". It goes on to say that:

Safety measures such as permanent fencing or combined fencing and densely vegetated buffer zones should be used in the following circumstances:

- *adjacent to zones of deep water (greater than 350 mm at normal water level)*
- *adjacent to potentially unsafe structures*
- *where high velocities may be encountered (refer Melbourne Water's Land Development Manual floodway safety criteria)*
- *where batters are 1V:3H or steeper.* (p204.)

37. This manual also reinforces the importance of habitat in the creation of waterway assets. In **Section A3. Design Outcomes and Objectives**, section **A3.4 Native flora and fauna** includes the following objectives to achieve flora and fauna outcomes that "must" be:

- *Provide suitable physical habitat. An appropriate range of physical habitats for native fauna should be provided, which may include pools, riffles, benches or large wood. Where possible, the amount and diversity of habitat should be maximised.*
- *Provide vegetation connectivity for vegetation. Vegetation connectivity relates to continuous patches of vegetation, which can enhance resilience to weed invasion and other disturbances and enhances the ability to manage the vegetation.*

38. The other document listed in CoGG's Landscape Standards, '*Constructed Wetland Guidelines',* has been superseded by the series of *Wetland Design Manuals Parts A, B, C & D (December 2020)* described below.

39. Melbourne Water's ***Wetland Design Manual Part A2: Deemed to Comply Design Criteria Manual, December 2020*** outlines criteria for batter slopes to the immediate perimeter of constructed wetlands. **Section 3.10 Edge Treatment** notes that:
All wetland edges must have:
• Vegetated approach batters no steeper than 1:5, a 2.8 metre wide vegetated safety bench at 1:8 between NWL and 350 mm below NWL and a maximum 1:3 slope beyond 350 mm below NWL (refer Figure 6). OR
• The batter from TEDD to 350mm below NWL must contain dense impenetrable planting that is a minimum of 2.8 metres wide and 1.2 metres high (refer Figure 7 and Figure 8).
These figures are shown in Figures 4.3 – 4.5 opposite.

40. As is evident from the above summary, these documents do not provide consistent guidance on some of the detailed design elements of wetlands and waterways.

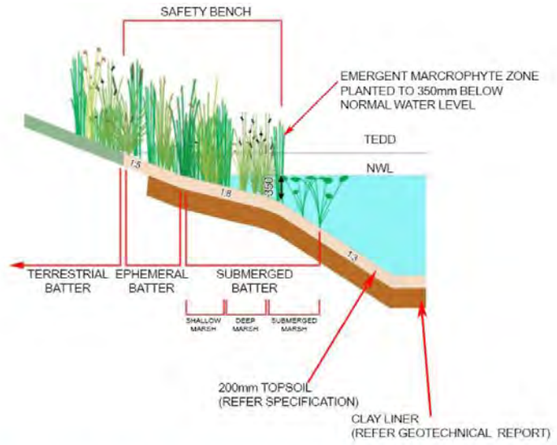


Figure 6: Indicative cross-section of vegetated wetland edge with safety bench (Refer to Melbourne Water Standard Drawing 7251/12/010 for more details).

Figure 4.3 - "Figure 6" from MW - Deemed to Comply Design Criteria

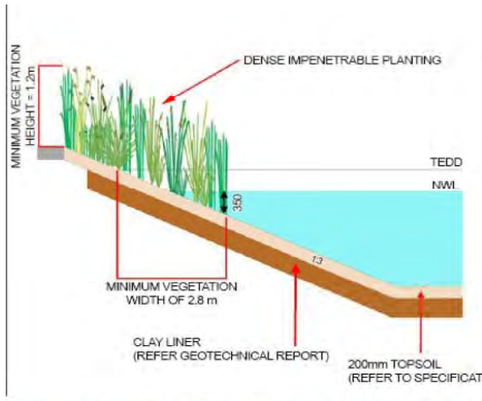


Figure 7 Indicative cross-section of vegetated wetland edge with impenetrable planting.

Figure 4.4 - "Figure 7" from MW - Deemed to Comply Design Criteria

Figure 8: Photos showing examples of wetland edges with dense impenetrable planting

Figure 4.5 - "Figure 8" from MW - Deemed to Comply Design Criteria

Figure 4.6 - Revised Wetland/Waterway landscape concept (MDG Landscape Architects, 05.04.2024)

4.3 Proposed revised design

41. In reviewing the exhibited wetland/waterway landscape proposals, and drawing on my experience with similar wetland projects, I identified some opportunities for reducing the land "footprint" for the waterway, while improving its landscape outcomes. These opportunities revolved around amending the batter slopes to meet the following grading design principles:

    - 1:6 grass batters;
    - 1:3 - 1:5 planted vegetated batters; and
    - 1:2 - 1:3 rock batters where required.

42. MDG Landscape Architects have used these principles to review the overall design of the wetland corridor in order to optimise the amount of land it would occupy. The concept shown in Figure 4.6 is based on revised grading work by SMEC that maintains all the WSUD functions and retardation volumes of the exhibited Water Technology report (*Final Report, Jetty Road South of Rail Trail SWMS, Water Technology, Version 06, 6 September 2023.)* Consequently, this proposal has no impact on the hydraulic function as compared to the exhibited version.

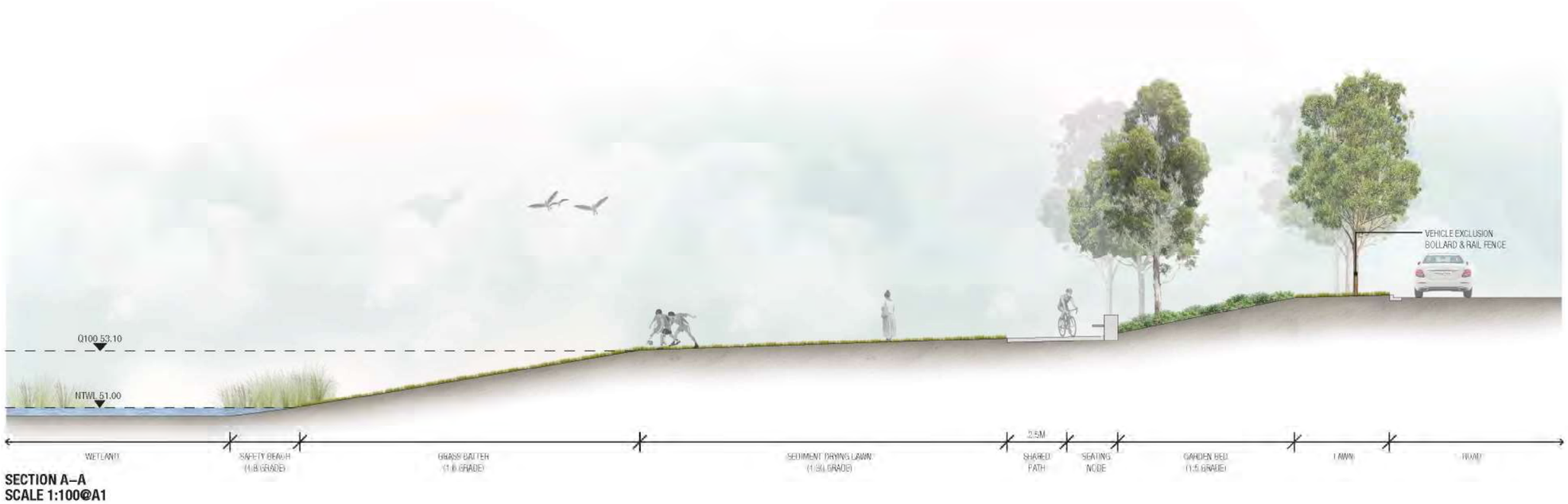
43. The concept depicted concentrates on the wetland/waterway and does not propose a real "design" for the 1 hectare park, rather showing a notional green "place holder" for the area. (As this area is not in contention, its design will be resolved in the future with Council.)

44. The landscape concept shows vegetated batters within the Q100 areas (as per the exhibited plan) and incorporates a shared path along the southern side of the corridor to the 1 ha local park, where the path occurs on both sides of the waterway. This shared path links to the Bellarine Rail Trail near its intersection with Tivoli Drive, as well as providing an additional link to that trail in the north-eastern corner of the wetland reserve, providing easier access for trail users wishing to head easterly on the Rail Trail. Additionally, the concept proposes a pedestrian path within the waterway reserve on the north-east side of the corridor, providing access and amenity for users of the reserve to circumnavigate the area.

45. The revised design proposes grass for all areas 1:6 or flatter and vegetation for areas steeper than 1:6. This is depicted in the colour-coded version of the landscape concept plan in Figure 4.7. This plan shows that the extent of batters steeper than 1:6 is fairly limited and is concentrated in the central portion of the site.

46. The sections shown in Figures 4.8 – 4.10 give an indication of the extent of the batter slopes meeting the above design criteria. They show the incorporation of limited sections of 1:3 vegetated batters to reduce the width of the overall drainageway. No batters shown in these sections are steeper than 1:3 and therefore are vegetated batters (as opposed to rock batters that would be required under the criteria above for batters steeper than 1:3.) As can be seen in the colour coded plan in Figure 4.7, there is only one area of rock stabilised batter steeper than 1:3, namely just north-west of the local park space.

Figure 4.7 - Revised Wetland/Waterway landscape concept - site grades (MDG Landscape Architects, 05.04.2024)



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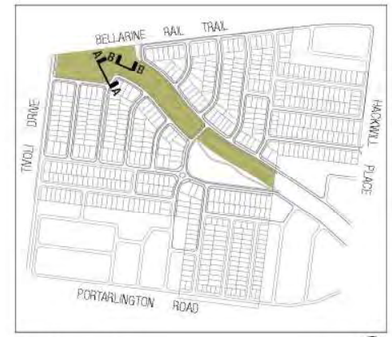

LOCATION PLAN NTS

SECTION B–B
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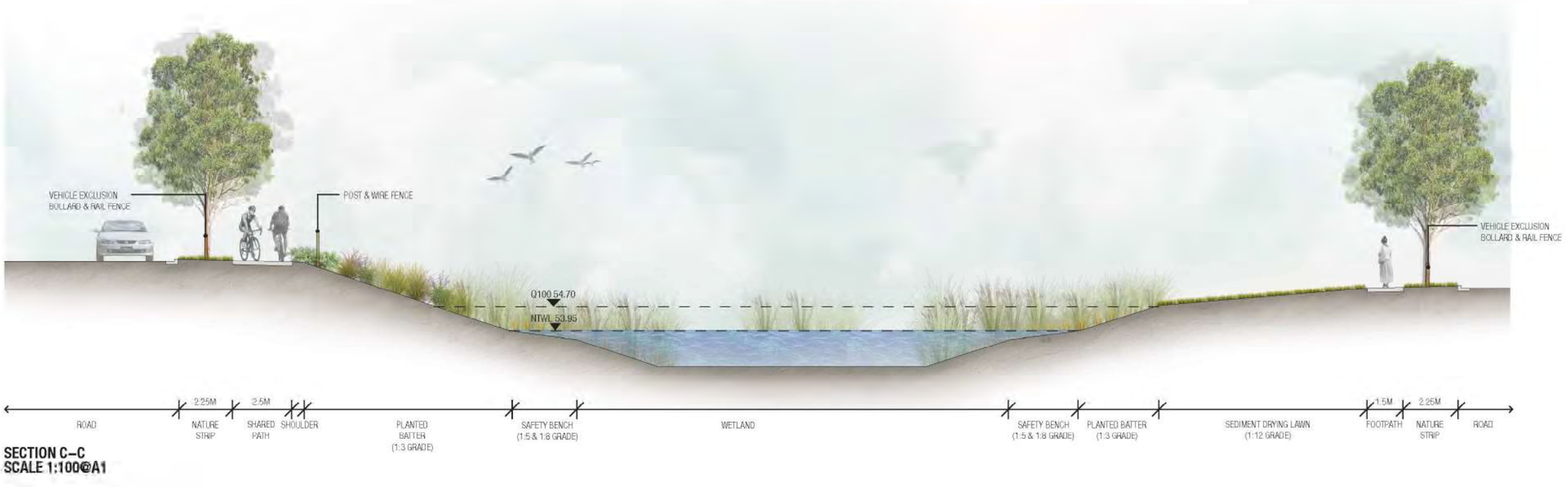
Figure 4.8 - Revised Wetland/Waterway landscape concept - Sections (MDG Landscape Architects, 05.04.2024)



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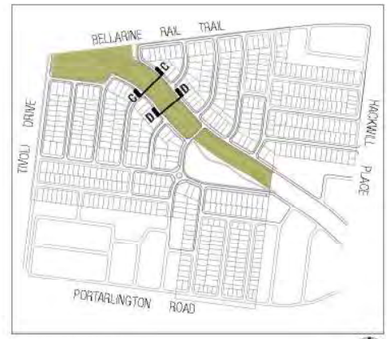

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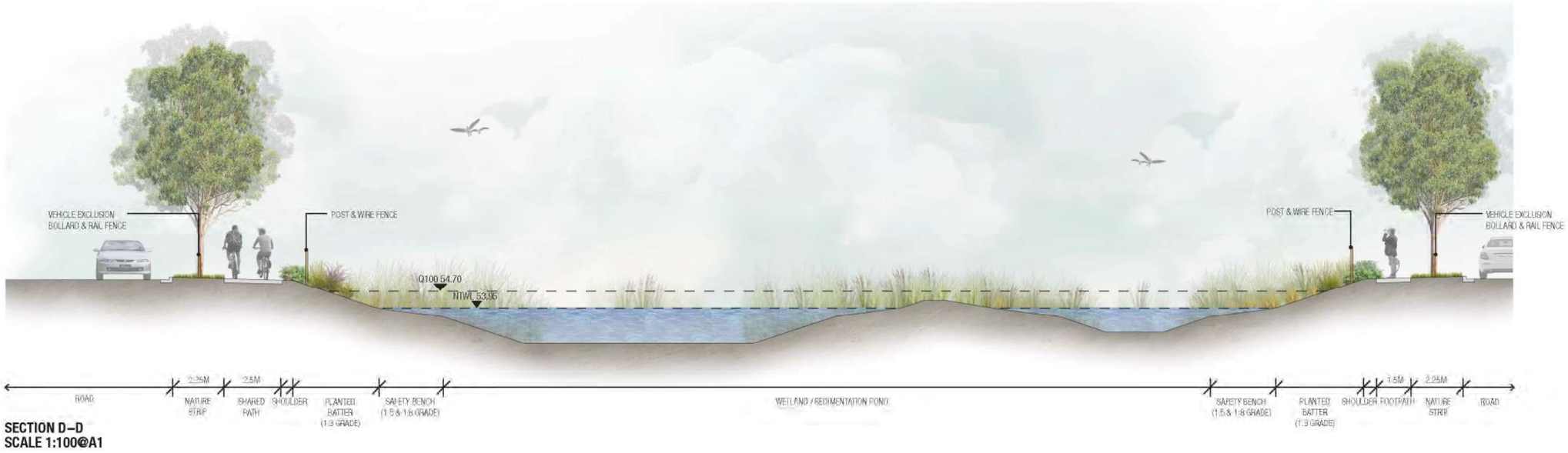

SECTION D–D
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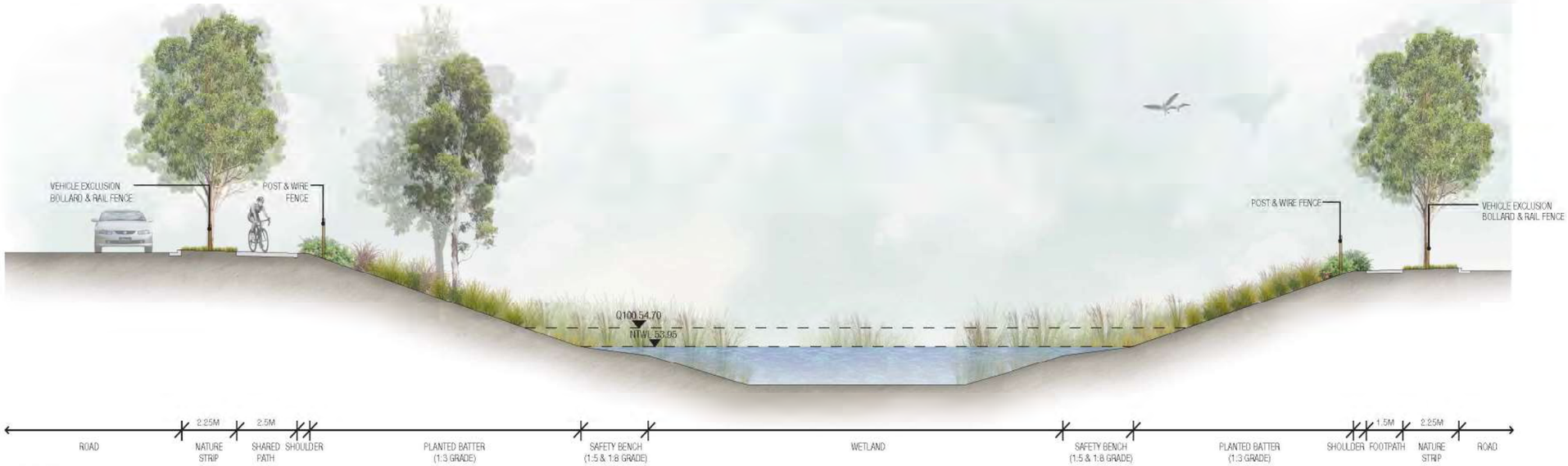
Figure 4.9 - Revised Wetland/Waterway landscape concept - Sections (MDG Landscape Architects, 05.04.2024)



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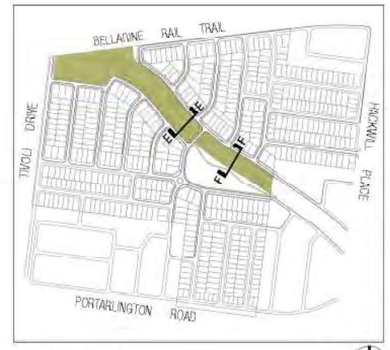

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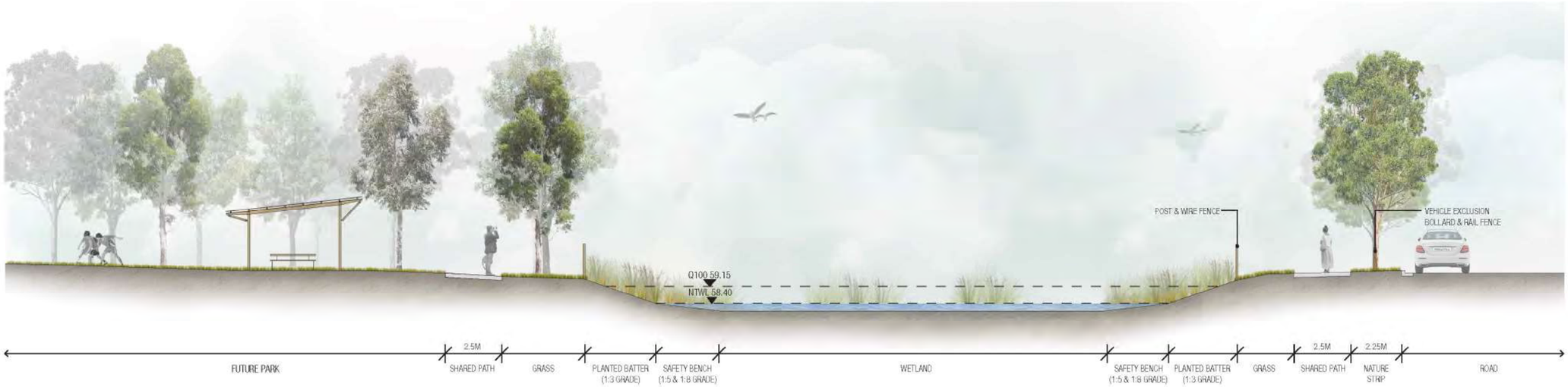


SECTION F–F
SCALE 1:100@A1

Figure 4.10 - Revised Wetland/Waterway landscape concept - Sections (MDG Landscape Architects, 05.04.2024)

4.4 Review

47. From the preceding review of various guidelines, it is clear that the preferred maximum grade for approach batter slopes is generally 1:5. However, variations from this "one size fits all" standard are accommodated in Melbourne Water's various documents. MW's Deemed to Comply Criteria contemplate 1:3 approach slopes with "*dense impenetrable planting*" (as shown in Figure 4.x.) Their Constructed Waterways Design Manual accepts that where slopes are 1:3 or steeper, "*Safety measures such as permanent fencing or combined fencing and densely vegetated buffer zones"* should be incorporated.

48. The adoption of 1:6 for grass areas is a broadly accepted standard for "mowable" slopes. This is the standard used by growth area municipalities such as Whittlesea, Wyndham and Hume, as well as many other municipalities. **Wyndham City Council's Landscape Subdivisions** information sheet for District Parks for example states that:

- *Gradients of turfed areas must not exceed 1:6 to allow for maintenance.*
- *Gradients of garden beds must not exceed 1:3 to allow for maintenance.*

49. Similarly, the use of the vegetated 1:3 batters is widely accepted within growth area municipalities, with for example, the **Integrated water management** section of ***Hume City Council's Landscape Guidelines*** noting the design requirement that "*All wetland batters steeper than or equal to 1:3 grade are to be planted*".

4.5 Examples of similar grades

50. The following section describes examples of similar grades (i.e. between 1:3 – 1:5) within the City of Greater Geelong that appear to be functioning adequately. (The grades highlighted in the examples were assessed by the author using a 1.5m timber straight edge with a spirit level attached and the measurement of fall of the ground across its length in each circumstance noted.)

Coastal Blvd/Parkside Blvd Wetland & Retarding Basin, Ocean Grove

51. This significant sized drainage reserve serves a useful open space function as well as its drainage role. Figure 4.12 shows an aerial photo of the site, with annotations in relation to grades on the batters. The area shown comprises a wetland and retarding basin (occupying approximately 2.5 Ha) and a further open parkland area that is a drainageway to the south-east of the wetland. (The extent of this linear reserve area shown in the aerial photo is a further 0.7 Ha approximately.) As the annotations show, most of the batters surrounding the wetland, above the NWL, are between 1:3 and 1:4 and are fully vegetated. Figures 4.13 – 4.15 show photographic examples of what these vegetated batters look like. (Note that these batters were planted some time after April 2020.) The creation of relatively level areas around the wetland and the extensive vegetation of the batter slopes creates a landscape that is visually rich and provides substantial habitat potential across the overall area.

Figure 4.11 - Panorama of Coastal Blvd-Parkside Blvd wetland from eastern bank

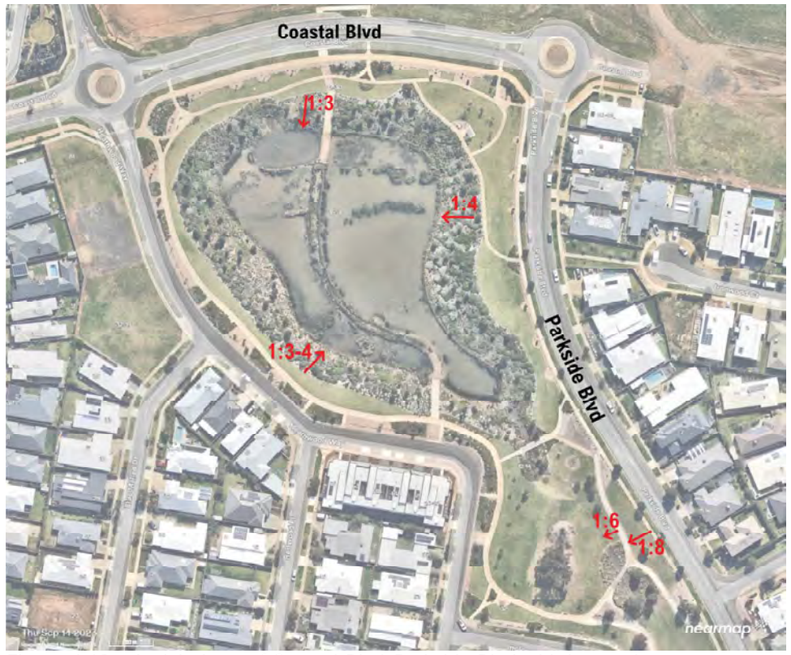


Figure 4.12 - Aerial photo of Coastal Blvd-Parkside Blvd with batter slopes

Figure 4.13 - Eastern batter slopes - 1:4

Figure 4.14 - Northern batter slopes - 1:3

Figure 4.15 - Western batter slopes - 1:3 - 1:4

Figure 4.16 - Southern overland flow path slopes - 1:6 and 1:8

Figure 4.17 - Aerial photo of Surf Coast Hwy/Burvilles Rd wetland with batter slopes

Figure 4.18 - SC Hwy/Burvilles Rd wetland (Google Streetview)

Figure 4.19 - SC Hwy/Burvilles Rd wetland eastern 1:2.5 - 1:3 vegetated batters

Figure 4.20 - SC Hwy/Burvilles Rd wetland northtern 1:2.5 - 1:3 vegetated batters

52. The section of open space to the south-east appears to provide an overland flow function draining towards the south-east. The side slopes on the eastern side of this area range from 1:6 to 1:8, as can be seen in aerial in Figure 4.12 and in the photograph in Figure 4.16. (A broader flatter area sits to the west of the drainageway.) To some extent, the images give a feel for what the adoption of 1:6 to 1:8 batters over a broader area might look like.

Surf Coast Highway/Burvilles Road Wetland & Retarding Basin, Armstrong Creek

53. This drainage facility appears to be predominantly a wetland and retarding basin, with little open space function attached. (Refer Figure 4.17.) It does however demonstrate the use of rock batters in locations where space is constrained. My assessment of the rock stabilised grades on both the northern and eastern sides of the wetland indicate grades between 1:2.5 and 1:3. An area of grass at a grades of 1:10 to 1:12 is assumed to be a sediment drying area.

54. Figure 4.18 shows the overall basin, while Figures 4.19 and 4.20 show the vegetated rock stabilised batters on the northern and eastern boundaries.

Sanctuary Blvd Wetland & Retarding Basin, Armstrong Creek

55. This drainage reserve sits adjacent to the Armstrong Creek open space corridor. It is a simple depressed area with a wetland in the base, as can be seen in the annotated aerial photo in Figure 4.21. Three of its sides are grassed batters, predominantly at a 1:6 or thereabouts, with the western edge being a vegetated slope that varies between 1:3.5 and 1:4.

56. Figure 4.22 shows an example of the 1:6 batter edges, while Figure 4.23 shows the steeper vegetated 1:3.5 to 1:4 batter on the western side.

57. The maximisation of 1:6 grassed batters within this reserve misses an opportunity for the creation of a more functionally and visually interesting space for residents, as well as habitat space that would add to the Armstrong Creek habitat corridor.

Warralily Blvd Reserve, Mt Duneed

58. The reserve at the original entrance to Warralily, off Barwon Heads Road, includes rock stabilised slopes adjacent to Armstrong Creek, as shown in Figure 4.24. While unable to actually measure the overall grade on these batters, it is clear from the photograph that it is steeper than 1:3. The area now has a fence separating the batter from the nearby picnic area and playground.

Figure 4.21 - Aerial photo of Sanctuary Blvd wetland with batter slopes


Figure 4.22 - Sanctuary Blvd wetland northern 1:6 grassed batter


Figure 4.23 - Sanctuary Blvd wetland western 1:3.5 - 1:4 vegetated batter

Figure 4.24 - Aerial photo of Warralily water edge with batter slopes


Figure 4.25 - Warralily rock stabilised and vegetated batter (2014)


Figure 4.26 - Warralily rock stabilised and vegetated batter (2014)

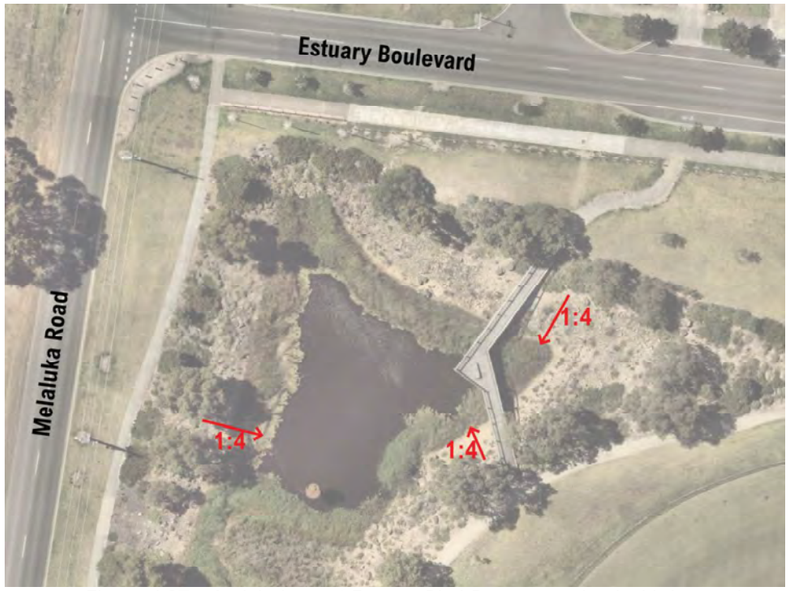


Figure 4.27 - Aerial photo of Estuary Blvd Reserve wetland with batter slopes

Figure 4.28 - Estuary Blvd rock stabilised and vegetated batter

Estuary Blvd Reserve, Melaluka Road/Estuary Blvd, Leopold

59. The wetland and retarding basin at the western edge of this sports reserve includes extensive rocked and vegetated batters. The aerial photograph in Figure 4.27 shows the grades around parts of the basin while Figure 4.28 shows what these look like. The wetland design has adopted the use of rock, apparently from an aesthetic viewpoint, as the vegetated 1:4 batters do not require this form of stabilisation.

Percy Cherry Reserve, Creekside Drive, Curlewis

60. The wetland component of this reserve abuts a local park in Stage 1 of the Jetty Road Urban Growth Area. It confirms that creative use of grading (in this case even retaining walls) creates visual diversity and aesthetic appeal, while maximising the area of useable space within the land area devoted to the reserve. Figure 4.29 shows an aerial photo of the site while Figures 4.32 – 4.33 show the retaining walled wetland area and picnic facility.

61. Adjacent to this reserve is a linear park that extends along the edge of Griggs Creek, which is a highly incised waterway to the east of Percy Cherry Reserve. The obvious danger that is demonstrated in Figure 4.30 is dealt with by the simple fence that is apparent in Figure 4.31.

Figure 4.29 - Aerial photo of Percy Cherry Reserve & Griggs Creek

Figure 4.30 - Deeply incised channel of Griggs Creek

Figure 4.31 - Simple post and wire fence preventing entry to Griggs Creek

Figure 4.32 - Percy Cherry Reserve wetland with stone walls and fencing (from the south east)

Figure 4.33 - Percy Cherry Reserve wetland with stone walls and fencing (from the north-west)

Peninsula Drive Wetland, Drysdale

62. This relatively recent wetland accommodates pedestrian and cycle access to a large complex of schools, aquatic centre, theatre and community uses for residents from the north of the Drysdale Bypass. As can be seen in Figures 4.34 and 4.35, the shared path bisects a large wetland. The photos in Figures 4.36 and 4.37 show the approximately 1:2 – 1:3 batters either side of the pathway. Both batters are successfully vegetated and the shared path fence/handrail system provides pedestrian safety to the area.

Figure 4.34 - Aerial photo of Peninsula Dve wetland with batter slopes

Figure 4.36 - South-western batter slopes from the shared pathway

Figure 4.35 - Panorama of Peninsula Dve wetland from the south-east

Figure 4.37 - North-eastern batter slopes from the shared pathway

Figure 4.38 - Aerial photo of Sapphire Reserve with batter slopes

Figure 4.40 - Aerial photo of Pratt Reserve with batter slopes

Figure 4.39 - Panorama of Sapphire Reserve from the south-west

Figure 4.41 - Panorama of Pratt Reserve from the north-east

Sapphire Reserve, Tivoli Drive, Curlewis

63. In contrast to the diversity exhibited in the Coastal Blvd wetland described above, this site adopts 1:6 grassed batters around most of its perimeter, with a section of vegetated batter at the north-west end and edge planting adjacent to lot sideages at the south-west end. The reserve is approximately 0.58 Ha and appears to support rain gardens in a sunken reserve area, as shown in Figure 4.38. A panorama of the reserve from the south-western side is shown in Figure 4.40 and, in my view, depicts the lack of visual interest in this form of landscape approach.

Pratt Reserve, Greenvale Drive, Curlewis

64. Similar to Sapphire Reserve, and perhaps even more visually uninteresting, this drainage reserve contains a WSUD asset (in this case a rain garden) surrounded by 1:6 grassed batters and sporadic tree planting. While the reserve may totally fulfil its WSUD function, it misses the opportunity to provide a significantly better recreational, habitat and aesthetic outcome. Figure 4.39 shows an aerial view while Figure 4.41 depicts a panorama from the north-eastern corner of the reserve.

Discussion

65. These example sites demonstrate a variable approach with the City of Greater Geelong to the inclusion of batter slopes and shows that there are numerous examples of vegetated batters, ranging from 1:3 to 1:5, and vegetated rock-stabilised batters steeper than 1:3, within relatively recently created drainage areas in the City of Greater Geelong. They are not unusual.

66. Where these exist, they demonstrate the creation of a more visually complex and appealing landscape that offers greater habitat potential than reserves that adopt primarily 1:6 grassed batters surrounding the WSUD asset (whether that be wetland or rain garden.) Mown kikuyu turf does not offer equivalent habitat potential to that of beds planted with dense native/indigenous vegetation. The more varied landscapes fulfil the objective of Clause 56.07 to:

    To encourage stormwater management that contributes to cooling, ***local habitat improvements and provision of attractive and enjoyable spaces.*** (My emphasis.)

67. The adoption of batters steeper than 1:5 (including the 1:3 batters proposed) is a wholly acceptable way of approaching wetland design in urban setting, as long as the recommended mitigating features are included, namely:

    - "dense impenetrable planting" on steeper; and
    - permanent fencing where required.

4.6 Maintenance sustainability

68. The longer term sustainability of the maintenance costs for any public space are also an important consideration in evaluating the validity of the proposed approach.

69. Maintenance costings for both the exhibited version of the wetland/waterway landscape (the SMEC version) and the proposed alternative one (by MDG Landscape Architects) have been prepared by LD Total, a well known landscape construction and maintenance firm. The summary of those costings over the first 5 years of the wetland/waterway development is shown in Figure 4.42.

70. Note the following assumptions underpinning the costings:
    - works such as cleaning the silt out of sedimentation ponds or wetlands, replanting the rock batters, replacing fencing etc. **have not** been allowed for;
    - replacement plants up the end of the 2 year maintenance period **have** been allowed for, but nothing beyond;
    - watering has been allowed for during the first 2 years of maintenance but none thereafter;
    - rates to maintain grass and garden areas is based on a 3 weekly cycle.

71. Additionally, the measured areas underpinning the costings are as shown in Table 4.1.

72. While the summary costings show years 1 to 5, the costs for years 1 and 2 (or further if required to meet Council's "establishment" criteria) are borne by the developer. The key point remains however, that by a combination of reducing the overall area and swapping frequent lawn maintenance for less frequent garden maintenance (once establishment is reached after about 2 years) the **annual cost** from Council's taking over maintenance responsibility for the reduced land version of the wetland/waterway is over $20,000 less than that for the exhibited version of the corridor.

73. This outcome makes the proposed approach to the wetland/waterway clearly more economically sustainable for Council over the long term.

Ground Condition/Surface treatment	SMEC Plan Area (m2)	MDG Plan Area (m2)
Turf	14,312	8,575
Wetland Aquatic Vegetation	11,150	12,098
Terrestrial Garden Bed (dense vegetation)	9,876	11,387
Rock Batter	405	422
Mulch only	467	547
Note: Overall Drainage Reserve Area	***4.22 ha***	***3.46 ha***

Table 4.1 - Area comparison table underpinning maintenance costs

LD TOTAL
LEADERS IN LANDSCAPING

	Project - Curlewis Wetland Maintenance Indicative Pricing Client - APD Projects				5/04/2024
No.	**Item**	**Unit**	**Qty**	**Rate**	**Amount**
1	**SMEC Drawings**				
	Year 1				
	13 week establishment	week	13	$9,678.56	$125,821.23
	39 weeks maintenance	week	39	$1,901.10	$74,142.79
	Year 2				
	52 week maintenance	week	52	$3,237.52	$168,350.79
	Year 3				
	52 week maintenance	week	52	$1,312.82	$68,266.85
	Year 4				
	52 week maintenance	week	52	$1,312.82	$68,266.85
	Year 5				
	52 week maintenance	week	52	$1,312.82	$68,266.85
				Total	***$573,115.35***
				Plus GST	***$57,311.54***
				Sub Total	***$630,426.89***
2	**MDG Drawings**				
	Year 1				
	13 week establishment	week	13	$7,769.56	$101,004.33
	39 weeks maintenance	week	39	$1,651.06	$64,391.52
	Year 2				
	52 week maintenance	week	52	$2,310.20	$120,130.65
	Year 3				
	52 week maintenance	week	52	$905.50	$47,085.97
	Year 4				
	52 week maintenance	week	52	$905.50	$47,085.97
	Year 5				
	52 week maintenance	week	52	$905.50	$47,085.97
				Total	***$426,784.41***
				Plus GST	***$42,678.44***
				Sub Total	***$469,462.85***

Figure 4.42 - LD Total's summary costing comparison of first 5 years maintenance

Figure 5.1 - Extract from Stockland's indicative Concept Design (24.11.2023)

Figure 5.2 - Stockland's indicative Concept Design overlaid on Post-exhibition Framework Plan

5 Interface to District Park

5.1 Proposed residential village

74. Stockland proposes a "residential village" on Properties 13 and 14, as shown in the indicative Concept Design in Figure 5.1. The site interfaces with Greenvale Drive on the east and McDermott Road on the west. Property No. 13 contains the proposed District Park in the north-east corner of the property, with the proposed residential village being separated from the district park by a public roadway.

75. The ***Post-exhibition Development Plan Overlay Schedule 46 Framework Plan*** (in Council's Consideration of Submissions) shows an "*indicative key local street*" adjacent to the eastern 60% (approximately) of Property No. 13's northern boundary, effectively on the north side of the district park, extending Oceania Drive westward. Refer to Figure 5.2 which overlays Stockland's indicative Concept Plan on the Framework Plan.

5.2 Council's position

76. **Schedule 46 to Clause 43.04 Development Plan Overlay** notes "*further specific requirements*" under the heading **Specific Land Use and Development**. In relation to ***Residential village and Retirement village*** it states a number of requirements that affect Stockland's desire to locate a retirement village adjacent to the regional park site, including:
    - *The use and development must not be located within 100 metres of the boundary of the district park.*
    - *Any boundary fencing installed should be of low height, transparent in design, and be sympathetic to the urban or rural character.*
    - *Dwelling frontage should ensure strong passive surveillance and contribute towards activation of the public realm.*

77. Council's Consideration of Submissions in its Delegated Authority Report notes that there is potential for the district park to "*be encased and monopolised by retirement villages on three sides.*" This statement is based on the potential for Property 12 to be developed as a residential village, as well as Property 13.

5.3 Landscape response

78. The degree to which any parkland would be "*encased and monopolised*" by surrounding land uses is significantly dependent on:
    - the public realm that surrounds the park; and
    - the character of the attendant built form and how it addresses the street and open space.

79. The Concept Plan prepared by Stockland indicates a public street as the interface with the park. Stockland's *External Roads Functional Layout Plans* show a 14.5m road reserve that contains a 1.5m footpath on the residential village side, a 3m verge, 6m through pavement, 2.3m indented parking bays and a 1.7m verge on the district park side. (Refer Figure 5.4.) A further 1.5m wide footpath would sit inside the boundary of the district park. (I note that there is a conflict between the plan view and the cross section in the Functional Layout Plans whereby the plan view indicates a 14.5m road reserve and the section indicates a 14m reserve. I recommend the 14.5m road reserve be adopted.)

80. This form of interface is in line with typical park-edge access streets used throughout Melbourne's growth areas. In those instances, it is very similar to a standard 16m Access Street with the footpath on the park side being incorporated into the park, resulting in a road reserve of 14.5m. The proposed arrangement acknowledges that there are no driveway crossings into properties on the residential village side and therefore accommodates the slightly modified arrangement that maximises on-street parking on the district park side of the street. As it is intended that this be a public road, Council's normal requirements will ensure there will also be street trees in the verges on both sides of the street, creating the streetscape character of a typical public street. It is worth noting also that the rear-loading of these interface homes creates the opportunity for a more regular street tree arrangement, unencumbered by driveway crossovers.

81. The "indicative key local street" on the north side of the district park shown on the Framework Plan is an extension of Oceania Drive, a 22m wide road reserve with a pavement that accommodates 2 through lanes and kerbside parking one each side, as well as a shared path on its south side, adjacent to the future district park. The continuation of this wide and highly public cross section to the west would further reinforce the public nature of the district park, obviating any potential sense of encasing or monopolising by any adjacent land use to the north.

82. I am instructed that the homes are intended to have their front doors face the park-edge road and their vehicular entries be from the rear, inside the residential village. This built form would then create a fairly typical park edge interface where front doors face out toward the parkland area. I am advised that low fencing would separate the dwellings form the public footpath. Visitors to the homes can park on the street and enter the homes through this front door, reinforcing the activation of the street and the public nature of the interface. The detailed design that would emerge under this approach would then clearly be able to satisfy the '*further specific requirements*' of **Residential village or Retirement village** of:
    - *low height transparent fencing sympathetic to the urban character*; and
    - provision of '*strong passive surveillance*' and contribution to '*activation of the public realm*'.

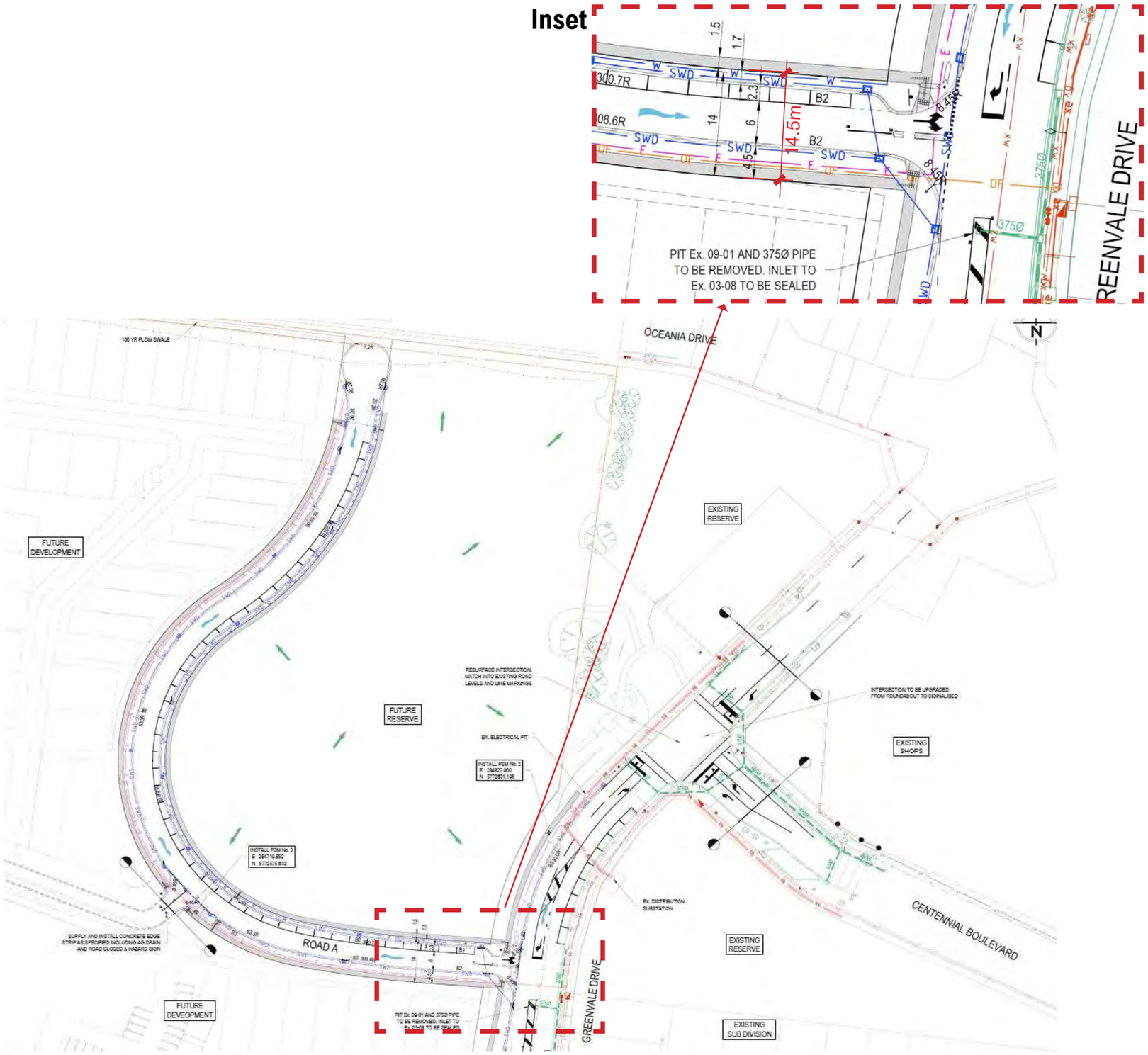


Figure 5.3 - Extract of Stockland's FLP drawing, with inset showing Road A cross section dimensions

Figure 6.1 - Interface 3: McDermott Road, North of Coriyule Road C - proposed interface to Properties 13 & 14

6 Interface to rural land

83. There are two areas at issue in relation to this rural interface, namely:
    - Council's proposed McDermott Rd section for the interface to Properties 13 and 14, north of Coriyule Road; and
    - Council's proposed McDermott Rd Projection section for the interface to Property 15, south of Coriyule Road.

6.1 McDermott Road north of Coriyule Road - Properties 13 & 14

84. As noted above, Stockland's "residential village" on Properties 13 and 14 interfaces with McDermott Road on the west, north of Coriyule Road. The plan in Figure 5.1 shows that homes will face onto McDermott Road, with their vehicular entries being from the rear, within the residential village. Stockland have requested in the Developer Group submission that:
    - *The 17 metre wide road reserve should be removed and replaced with a 'residential or roads' interface as per the arrangement in the McDermott Road Section – South of Coriyule Road.*
    - *The verge on the east side of the existing McDermott Road reserve should include the shared path.*
    - *A 4 metre 'no build zone' should be applied for future dwellings fronting McDermott Road. The McDermott Road reserve and the 4 metre 'no build zone' will contribute to 'defendable space' and therefore, a further setback beyond the 4 metres is not required for bushfire purposes.*

6.2 Council's position

85. **DPO Schedule 46 Background Landscape Report (November 2022)** identifies the western boundary of Stockland's parcels as being "*Interface 3: McDermott Road, North of Coriyule Road C*". Figure 6.1 shows the proposed cross section for this interface, which assumes a 17m access street cross section with a 3m shared path on the boundary with McDermott Road.

86. Notwithstanding this cross section, Council's Consideration of Submissions report notes that *"(t)here is also provision for any residential village that interfaces rural land to provide arrangements different to that shown in the DPO46 background landscape report." (p19 of 32.)*

6.3 Landscape response

87. As noted above, the Background Landscape Report identifies a range of proposals for the length of McDermott Road, as the interface to rural land to the west. South of Coriyule Road, the path is shown on the western side of the road reserve, while north of Coriyule Road for the extent of Properties 14, 13, 12 and half of 11, it is shown to the east of the road reserve, within the road reserve of any proposed streets within the development area. (I note also that this set of sections does not deal with the inevitability of sideages to McDermott Road.)

88. For the extent of Properties 13 and 14, the existing McDermott Road has an approximately 5.5m wide gravel pavement, with a mature row of existing trees on private land to the west. There is only one tree on the eastern side of the road reserve, just north of Coriyule Road. The sections describe its future as a "rural carriageway" (though no dimensions are given on the sections.)

89. While the eastern side of the McDermott Road carriageway is the logical location for the shared path (due to its ready accessibility to the residential population to the east), the proposed Stockland residential village is not intended to have internal roads on this boundary. With the available width of verge on McDermott Road and the absence of any constraints such as existing trees, there would seem to be no reason why the shared path could not be located within the 20m McDermott Road road reserve.

90. On site measurements indicate that the eastern verge varies between around 7 to 8+m and therefore, with a 3m shared path there would remain a verge of around 4m+ to accommodate substantial street trees as part of the creation of this low-key rural interface roadway. Stockland's proposed "*4 metre 'no build zone' for landscaping purposes*" would accommodate a second row of trees within the Stockland land, reinforcing this low-key rural character. Figure 6.4 shows a simple sketch cross section of how this arrangement could work.

Figure 6.3 - McDermott Road looking north, from just north of Coriyule Road

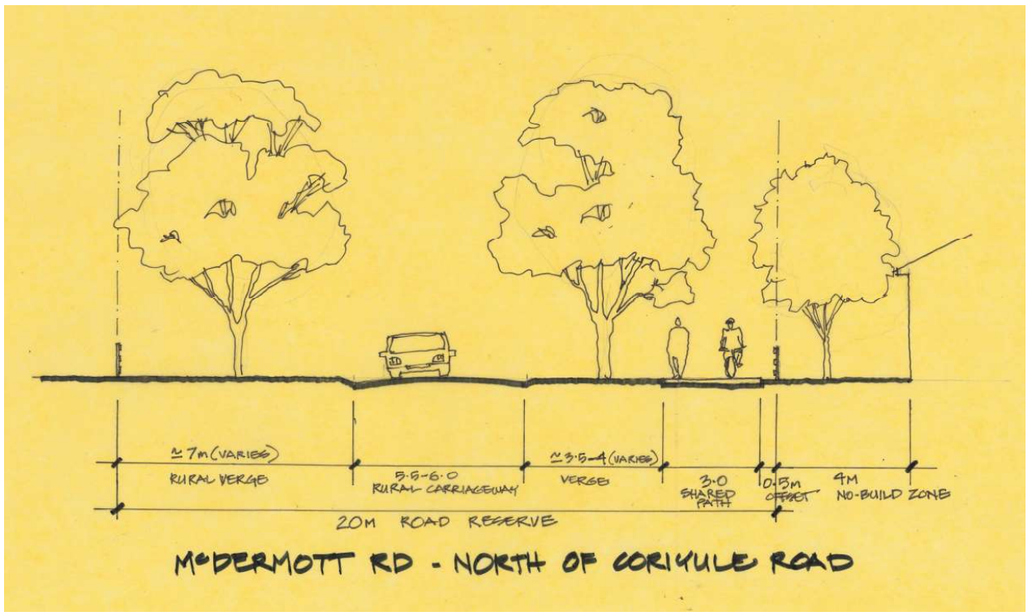


Figure 6.4 - Proposed McDermott Road cross section adjacent to Properties 13 & 14

7 Summary and Conclusion

91. This evidence has set out my understanding of the key issues that I have been engaged to address. In summary, they revolve around:

    1 Optimising the land-take and landscape outcomes of the southern drainageway in Property 16 by adopting a range of grading standards that are widely used in similar situations around the Melbourne metropolitan area, namely:

    - Batters 1:6 and flatter: grass
    - Batters 1:3 to steeper than 1:6: vegetated
    - Batters 1:2 to steeper than 1:3: rock stabilized and vegetated

    2 Ensuring the public nature of Property 13's interface to the District Park.

    3 The efficient utilization of land on the rural boundary of Properties 13 and 14 by including the shared path within the road reserve.

Issue 1

92. It is clear that drainageways (containing wetlands and waterways) need to fulfil broader objectives than simply dealing with stormwater. Both the policy positions and various authority guidelines make it clear that they must also provide for:

    - the creation and maximization of habitat;
    - enhancement of vegetation connectivity and continuity;
    - the creation of attractive and enjoyable spaces.

    Additionally, they must be environmentally and economically sustainable.

93. The ubiquitous adoption of a criterion of 1:6 maximum batter slope (based largely on a flawed assumption of less expensive maintenance) is a very blunt tool for the creation of quality urban spaces that must fulfil the policy and guideline objectives noted. It can result in the creation of spaces that are visually dull and offer less than they could from a landscape and amenity viewpoint.

94. This evidence has shown that there is guideline accommodation of and extensive precedent to the adoption of a more nuanced and varied approach to the grading and landscaping of such spaces. The indicative maintenance costings reinforce that the alternative approach proposed creates no additional economic burden on the Council, but indeed will provide significant cost savings over time.

95. Consequently, I believe the more varied grading and landscape approach proposed will provide the optimum balanced outcome from a habitat, landscape, aesthetic and WSUD point of view.

Issue 2

96. The interface proposed to the district park is essentially no different to a standard public street interface, with all the "visual language" cues of a public road that will prevent any perception of it being a privatised space. The roadway cross section, street trees, low fences and dwellings facing onto the street with front doors, all create a very usual and familiar public street interface that would not deter the public from using it as a thoroughfare or as access to the District Park.

97. The continuation of Oceania Drive across the northern boundary of the district park will reinforce this public nature.

Issue 3

98. A rural road interface can be readily achieved with the location of the shared path along the eastern side of the generous 20m McDermott Road road reserve. Incorporation of the path will still accommodate the planting of substantial trees on both sides of the road. The proposed 4m 'no build zone' will allow the further reinforcement of this rural interface with additional substantial tree planting.

Response to G7: Guide to Expert Evidence

Facts, matters and assumptions: Included throughout report.

Materials: Outlined in Section 1.

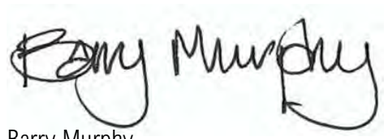
Summary of Opinion: Refer Section 7.

Provisional opinions: Nil.

There are no matters upon which I have offered an opinion that are outside my area of expertise. I do not believe the report is incomplete or inaccurate in the opinions it puts forward.

Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Tribunal.



Barry Murphy
Murphy Landscape Consultancy

Appendix A - Qualifications & Experience

Name: **Barry Murphy FAILA**

Address: Murphy Landscape Consultancy
11 Osborne Street
Williamstown, Victoria 3016

Qualifications:

1975 Dip. Hort. Sci. Burnley Horticultural College
1979 Grad. Dip. L.D. Royal Melbourne Institute of Technology
1985 Master of Landscape Architecture (Site Planning & Urban Design Stream), University of California, Berkeley, including the following awards:
- 1985 A.S.L.A. Honour Award, U.C. Berkeley
- 1984 Eisner Prize for Creative Arts, U.C. Berkeley
- 1985 Outstanding Teaching Assistant Award,

Professional Memberships:

Fellow, Australian Institute of Landscape Architects

Area of Expertise

My areas of expertise are in landscape architecture, site planning and urban design, with that expertise built through a range of tertiary level courses and qualifications, together with over 45 years experience in the field.

Expertise to prepare report:

Barry Murphy has a diverse range of experience in landscape architecture from a variety of positions in both government and private practices. His experience ranges from site design and detailing of urban projects to site analysis and land planning for broadscale areas. From 1986 until 1989, he was Director in charge of Tract Consultants Australia P/L's Perth office. In 1992 he commenced his own practice, now known as MDG Landscape Architects, which provides landscape architectural and urban design services to a range of private and local government clients. After 26 years in the practice, he left in June 2018 and commenced Murphy Landscape Consultancy. He brings over 40 years' experience in landscape architecture to the design and assessment of urban developments.

Some projects in which he has had an important role follow, together with an outline of award-winning projects during his time at MDG Landscape Architects:

RESIDENTIAL DEVELOPMENTS (LANDSCAPE DESIGN)
Alamanda, Point Cook
Armstrong, Mt Duneed
Aurora, Epping North
Beacon Cove, Port Melbourne
Beaumont Waters, Berwick
The Heath, Heatherton
Highlands, Craigieburn
Lynbrook, Lyndhurst
Merrifield, Mickleham
Metro 3175, Dandenong
Nunan McLennan Place Redevelopment, Preston
Olivine, Donnybrook
The Point, Point Lonsdale
Redstone, Sunbury
Riverwalk, Werribee
Roxburgh Park
Royal Palms, Aspendale
Sandhurst Club, Sandhurst
Sanctuary Lakes, Point Cook
Watervale, Sydenham
Waverley Park redevelopment
Williams Landing, Laverton

RESIDENTIAL DEVELOPMENTS (URBAN DESIGN)
Alamanda, Point Cook
Aurora, Epping North
Bandiana Military Camp Redevelopment, Wodonga
Berwick Springs South (Eve), Cranbourne North
Dandenong Stockyards Redevelopment (Metro 3175)
Facey Property (Sierra), Cranbourne North
Merrifield, Donnybrook Road
Point Lonsdale Residential & Waterways Development
Sanctuary Lakes Resort, Point Cook
Tooronga Village Redevelopment, Tooronga

OPEN SPACE PLANNING
South Eastern Regional Open Space Plan
City of Boroondara Open Space Strategy
City of Moonee Ponds Open Space Strategy
City of Yarra Open Space Strategy
Croydon North West Open Space Strategy

PARK PLANNING & DESIGN
Yarra Bend Park Strategy Plan
Point Gellibrand Heritage Park Master Plan
Yarra Valley Park Management Plan
Mt. Eliza Regional Park Master Plan
Mt. Macedon Summit Master Plan
Werribee River & Environs Master Plan
Werribee Park Visitors Centre Site Planning Study
Albert Park Playground Precinct Master Plan
Dandenong Valley Park Future Directions Plan
Altona Coastal Park Master Plan

INSTITUTIONAL
Melbourne Grammar School Wadhurst Redevelopment
William Angliss Institute of TAFE Courtyard
Williamstown Primary School Master Plan
Kensington Primary School Master Plan
Albury Base Hospital Landscape Review
HMAS Cerberus, Technical Training & other facilities
Northern Metropolitan College of TAFE, Greensborough
Hannover, South Melbourne

COMMERCIAL
Dandenong Plaza Shopping Centre
The Garden Office Park, WA
Railway Parade Shopping Precinct, Noble Park
Beacon Cove Civic Square Precinct

INFRASTRUCTURE
Port Melbourne Streetscape Strategy
Western Ring Road - Ardeer & St. Albans Sections
Monash Freeway - Warrigal Road Grade Separation
Aspendale Gardens Community Centre

GUIDELINES
Urban Design Guidelines, Former Sth Melbourne Tram Depot
Landscape and Urban Design Guidelines for Industrial Areas
Design Guidelines, Surf Coast Shire, Business Zone
Landscape Guidelines for Industrial Areas, Hobsons Bay CC
Landscape Design Guidelines, Taylors Lakes Development
Landscape Design Guidelines, Sanctuary Lakes

AWARDS
Barry Murphy has been responsible for the award winning projects listed below:

2018 UDIA Award for Excellence – Landscaping at Armstrong Creek
2017 UDIA Masterplanned Development Award – Armstrong, Mt Duneed
2016 UDIA Landscape Award – Armstrong Mt Duneed
2016 UDIA Medium Density Development Award – The Barkly
2016 UDIA Residential Development Finalist – Banbury Village
2016 UDIA Judges Award – Saratoga
2015 Excellence in Timber Design Award
2014 UDIA Masterplanned Development Award – Mernda Villages
2014 Parks and Leisure Australia, award for Leisure Facilities – Wodonga Aquatic Centre
2013 UDIA Medium Density Award – Banbury Village
2013 UDIA Urban Renewal Commendation – Banbury Village
2012 AILA Landscape Management Award – Aurora Conservation Reserve Management
2012 UDIA Victorian and National award for Excellence, Master-planned Development - Highlands
2010 Hume City Council Business Excellence Award in Landscape design – Highlands
2010 UDIA National Award for Excellence – Alamanda, Point Cook
2009 UDIA Award for Excellence – Alamanda, Point Cook
2009 UDIA Affordable Development – Metro 3175, Dandenong
2008 UDIA Landscape Award – Sandhurst Club
2008 UDIA Environmental Excellence Award – Sandhurst Club
2008 Hume City Council Business Awards, Landscape Planning Creative Open Spaces – Highlands Lake
2007 AILA Design Commendation – Aurora Stage 1 Parks & Streetscapes
2007 AILA Planned Communities Citation – Aurora Stage 1 Parks and Streetscapes
2007 UDIA Environmental Excellence Winner – Aurora
2007 UDIA Environmental Excellence Commendation – Seagrove
2007 Property Council of Australia, Masterplanned Communities – Beacon Cove Masterplan
2007 Hume City Council Business Awards, Creative Open Space - Highlands Hyde Park
2006 Dulux Colour Awards, Commendation Commercial Exterior – Roxburgh Park Stage 67-72 Park
2005 Hume City Council Business Awards, Outstanding Achievement in Environmental Design – Roxburgh Park Lake
2005 Hume City Council Business Awards, Outstanding Achievement in Urban Landscape– Roxburgh Park St 74 Park
2004 UDIA Medium Density Development Award - Forest Wood
2004 City of Stonnington Metropolis award for landscape, public space and art - SY21
2003 UDIA Environmental Award - Sanctuary Lakes Resort
2003 Water Sensitive Urban Design Award - Beaumont Waters
2002 Water Sensitive Urban Design Guidelines, Knox City Council
2001 UDIA Residential Development >200 lots Award - Royal Palms
2001 UDIA Residential Development >400 lots Award - Sanctuary Lakes Resort
2001 UDIA Masterplanned Development Award - Sanctuary Lakes Resort
2000 UDIA President's Award - Lynbrook Estate

mlc landscape architecture urban design

1 Masterplan

1.1 Overall Plan

LEGEND

- Extent of Park
- Normal Top Water Level (NTWL)
- 1 in 100 Year Flood Level
- Shared Path (2.5m wide)
- Secondary Pedestrian Path (1.5m wide)
- Turf area with seating
- Rocks
- Wetland water body
- Wetland Aquatic and Ephemeral Planting
- Shrub / Grass Planting
- Mulch / Decomposed granite paving

0 25 50 75 100 125m
NTS

Figure 1. Overall Plan

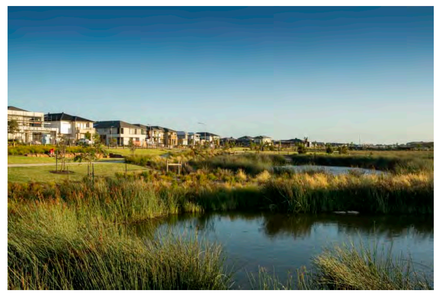
Appendix C - Landscape Concept Plans - MDG Landscpae Architects

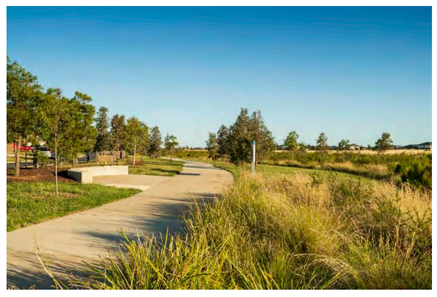
LOCATION PLAN NTS

LEGEND

- TREES
- GRASS
- MULCHED TPZ
- TERRESTRIAL PLANTING - PLANTED BATTER / GARDEN BED
- AQUATIC PLANTING
- ROCKY VEGETATED SWALE
- CONCRETE MAINTENANCE ACCESS TRACK (BY CIVIL)
- ROCK BEACHING (BY CIVIL)
- PATH NETWORK
- SEATING NODE
- POST & RAIL VEHICLE BARRIER
- TITLE BOUNDARY
- 100 YEAR FLOOD LEVEL (Q100)
- NORMAL WATER LEVEL (NTWL)

PRECEDENT IMAGERY





1421 PORTARLINGTON ROAD, CURLEWIS
LOCAL PARK AND WETLAND RESERVE
LANDSCAPE CONCEPT PLAN

MDG Landscape Architects. Drawing 2310B LSK01 [Rev. C] Scale: 1:750 @ A1 . Date: 05.04.2024
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mdg

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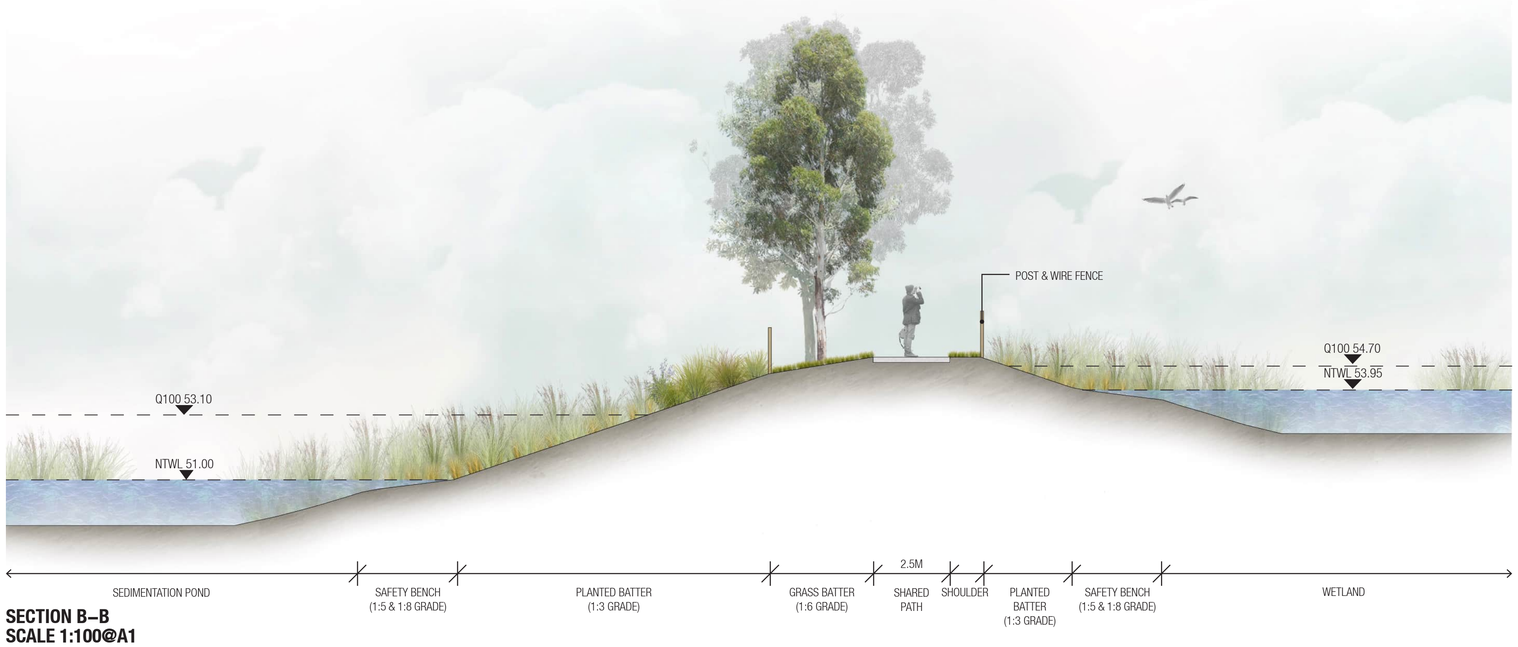

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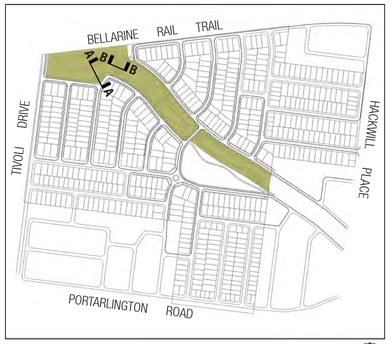
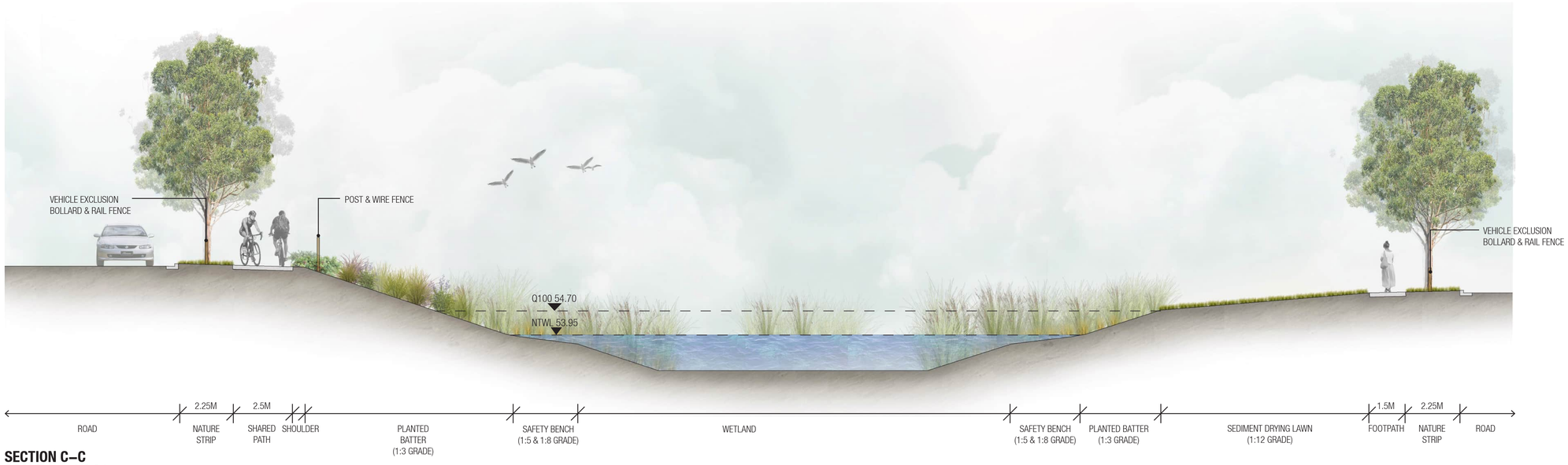


LOCATION PLAN NTS

1421 PORTARLINGTON ROAD, CURLEWIS
LOCAL PARK AND WETLAND RESERVE

LANDSCAPE SECTIONS SHEET 1 OF 3

MDG Landscape Architects. Drawing 2310B LSK02 [Rev. A] Scale: 1:100 @ A1 . Date: 05.04.2024
\\mdglas\mdgjobs\2310 Portarlington Road Curlewis\2310B Wetland\Design\Drawings\ InDesign



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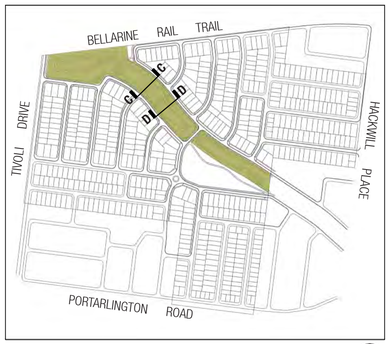
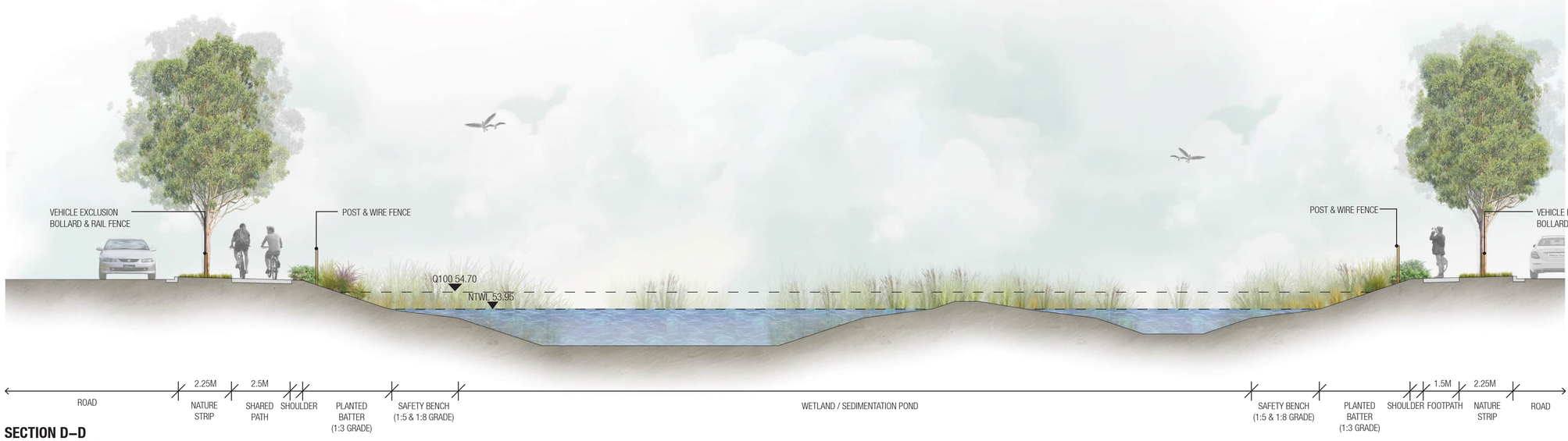


LOCATION PLAN NTS



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1421 PORTARLINGTON ROAD, CURLEWIS
LOCAL PARK AND WETLAND RESERVE

LANDSCAPE SECTIONS SHEET 2 OF 3

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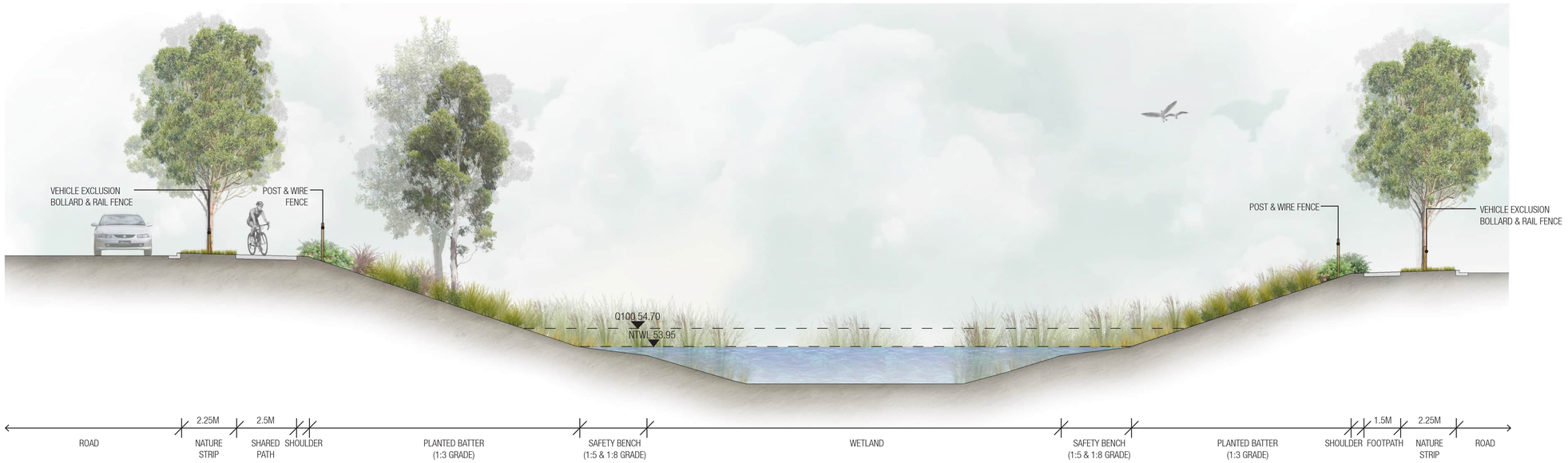

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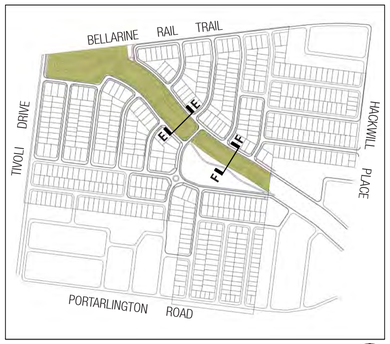
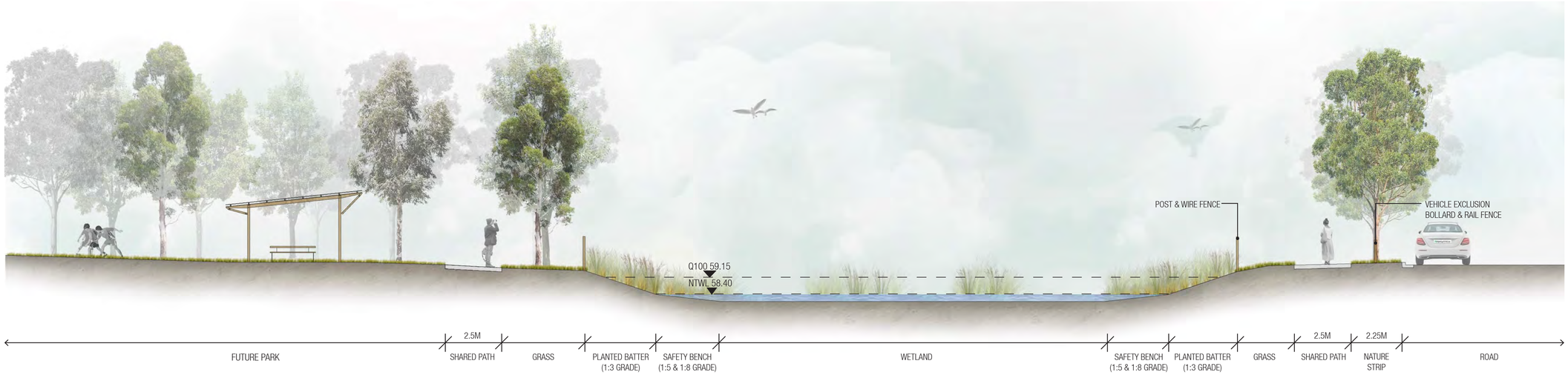


LOCATION PLAN NTS



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1421 PORTARLINGTON ROAD, CURLEWIS
LOCAL PARK AND WETLAND RESERVE

LANDSCAPE SECTIONS SHEET 3 OF 3

MDG Landscape Architects. Drawing 2310B LSK04 [Rev. A] Scale: 1:100 @ A1 . Date: 05.04.2024

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BELLARINE RAIL TRAIL

TIVOLI DRIVE

LOCATION PLAN NTS

LEGEND

- 1:2 MAX GRADE - VEGETATED ROCK BATTER
- 1:3 - 1:5 GRADE - DENSELY PLANTED BATTER
- 1:6 MAX GRADE - GRASS BATTER
- 1:12 MAX GRADE - AMENITY & SEDIMENT DRYING LAWN AREAS
- 1.2M HEIGHT POST & WIRE WETLAND EDGE FENCE
- 1.4M HEIGHT BICYCLE BARRIER FENCE

1421 PORTARLINGTON ROAD, CURLEWIS
LOCAL PARK AND WETLAND RESERVE
LANDSCAPE GRADING PLAN

MDG Landscape Architects. Drawing 2310B LSK05 [Rev. A] Scale: 1:750 @ A1 . Date: 05.04.2024

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