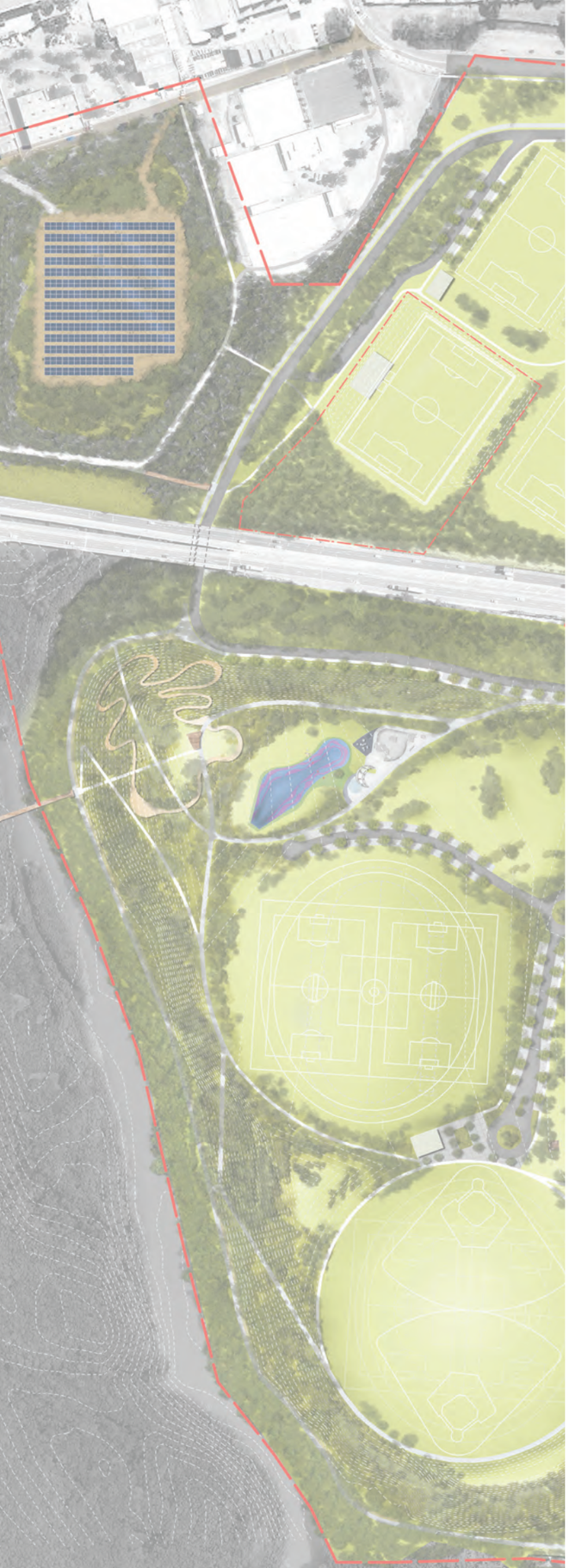


SALT PAN CREEK RESERVE, RIVERWOOD

MASTERPLAN

MASTERPLAN

McLaughlin Fields

Concept proposals for the reconfiguration of McLaughlin Oval are outlined following with the relevant masterplan items referenced on the plan this page:

1. Upgraded entry from Wiggs Road
- Provide roundabout entry
- Realign roadway to enable field construction

3. Parking areas - McLaughlin Fields
- Retain existing frontage parking area
- New parking area adjoining fields access road
- Stadium event drop-off zone

7. Shared pedestrian cycle access loop
- Trunk shared access route linking to off site connections and to Salt Pan parklands south of M5

8. Secondary pedestrian paths
- Supporting pedestrian access paths from entry points

9. Regional access links across / along Salt Pan Creek
- New boardwalk access across Salt Pan Creek north of M5

10. M5 underpass upgrade
- Widen roadway as site access route
- Provide off road shared path
- Solar feature lighting under road structure subject to RMS
- Protective netting to motorway edging to catch debris

12. NPL Football Stadium and stand
- Synthetic football surface compliant with NPL requirements
- Stand and supporting facilities compliant with NPL requirements

13. Supporting Football Fields
- Grassed football fields for general community use

15. Public amenities / facilities
- Public toilets and change rooms to serve field and general park use

19. Local Community Play Space
- Retain and enhance community playspace in current area of park where it easily accessible from adjoining neighbourhood

22. Open grassed informal game and picnic space
- Open grassed area suitable for informal games and play and supported with shade tree canopy and park furniture
- Connected by supporting path linkages

25. Whitmarsh Reserve
- Solar Power Generation transitioning into vegetation Biobanking / habitat zone in future
- Refer Whitmarsh Reserve concepts next page

Figure 2.3 Masterplan - McLaughlin Fields

Whitmarsh Reserve

Whitmarsh Reserve is a Council owned land parcel adjoining the Salt Pan Creek riparian corridor. The space is isolated by the former Bowling Club Facility to the east which currently operates under license to sporting groups. This area does not currently form part of the open space area covered by the masterplan. (Refer Land Ownership diagram Figure 1.2).

The site potentially forms part of the Riparian Corridor habitat zone of Salt Pan Creek but is currently in poor condition due to past clearing and weed encroachment.

The former Bowling Club Facility site in turn offers potential to play a role supporting recreational facilities on the McLauglin Oval site and Salt Pan Parklands areas.

Solar generation potential

Council has previously investigated potential for solar power generation on this and other sites. The concept of solar generation is compatible with the broader site vision of *"demonstrating sustainability"* and integrates well with the shared path passive access system, habitat enhancement, and environmental management on the site.

Some key observations of the past investigations include:

- The predicted life expectancy of a commercial scale solar arrays is 25 years, after which the land can be converted to another purpose
- annual savings realised by local energy generation, could be reinvested into any number of community or council resources or initiatives
- Solar Farm to target 2MW on 2-5-3ha usable site area (see table below)

The past investigations identified the following parameters for potential solar facility on the site:

Size	Solar Potential	Output per annum	% of Councils electrcity and annual savings	ROI (based on 2017 electricity prices)	Est Cost Excluding ancillary works
30,000m2	2 MW	2,900,000 KWh	9.5% $800,000	Less than or equal to 4.6 years	$3,700,000

The masterplan recommends that Council investigate further the provision of a solar generation facility in the short to medium term (eg 10-15 years) after which the site could be subject to rehabilitation works and revegetation as part of the Salt Pan Creek riparian corridor.

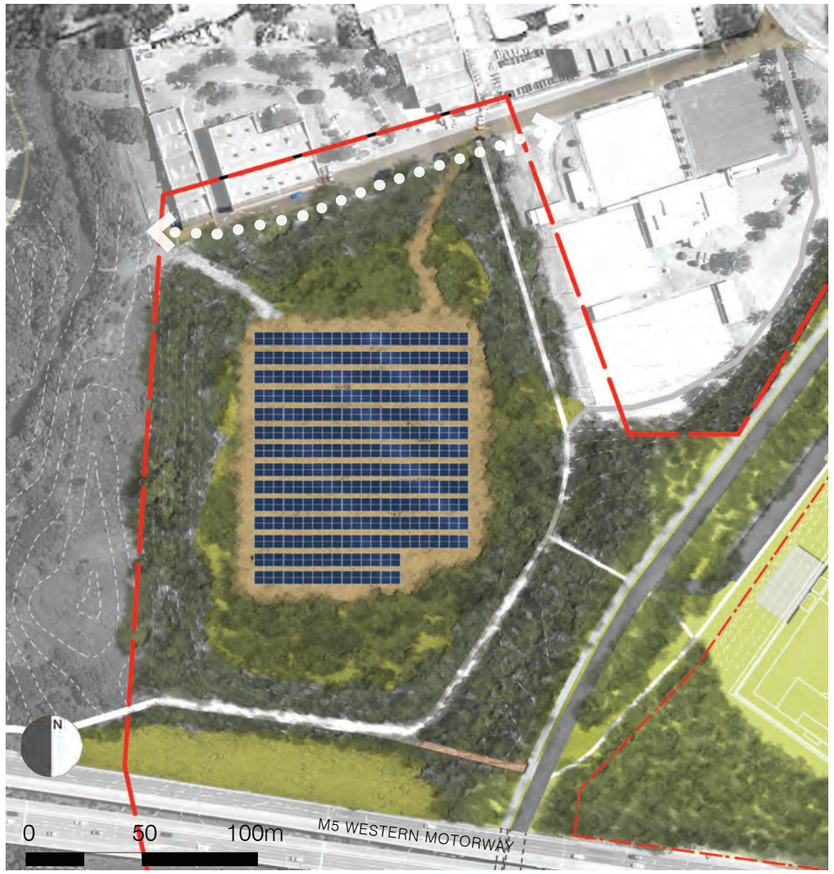


Figure 2.4 Short to medium term - Whitmarsh Reserve

Figure 2.5 Long term - Whitmarsh Reserve

Short to medium term - Solar Power Generation

- The usable area(approximate), excluding boundary vegetated area and boardwalk is approximately 2.7 ha of a total 3.2 Ha)
- This will enable indicatively a solar array with capacity up to 2MW
- As a guide 1MW could possibly provide enough power for up to the equivalent of 200 - 300 homes depending on quality & wattage of panels and other variables.

Design issues to be considered in ongoing assessment include:

- geotechnical surveys to ensure that the ground is conducive to supporting the mounting system.

- address drainage issues associated with soil conditions around the installation areas, (compacting of capping layer) and potential pooling of water around cabling trenches
- provide site security – temporary and/or permanent fencing
- provide ancillary works including access roads, secure inverter storage and an office/service building
- consider additional costs that may incur for Power Purchase Agreement with retailers

Long term - Biobanking / habitat zone

- Ecological Australia reviewed the potential for Biobanking on the Whitmarsh Reserve site which is of low ecological quality currently
- it was identified that there could be up to 10ha of available area that could be subject to biobanking arrangements
- however it is noted that the area is subject to past landfill and possible contamination and that existing weed encroachment is significant
- Ecological Australia estimated that the proposed biobank site would establish approximately 90 credits. CRCIF credits currently trade for between $12,000 - $17,000 / credit. A Biobank feasibility study would provide a more certain outcome for this opportunity.

MASTERPLAN

Site Entries

Due to the scale of the overall site and the nature of facilities that are expected to draw usage from a broad catchment, vehicular access to and through the site is a key factor to address.

The masterplan proposes that the site have two main vehicular access points one either side of the M5 Motorway and a supporting temporary / event access point that can supplement the other access points on peak use days.

By nature the facilities to the open spaces either side of the M5 will draw different users so will likely provide some separation of traffic loads although dependent on point of origin and route to the site, some users may enter at north or south of M5 and then travel within the park to the other side. The road system through the park gives Council the option to manage through vehicle access in a modal manner - for instance through vehicular access may closed during weekdays. (refer also to access strategy - section 6.2)

a. Wiggs Road Entry
The existing entry to McLaughin Oval provides access to the existing parking area. An access road that continues south under the M5 and loops up to the baseball facilities is closed during weekdays and for other than managed vehicular access. It is proposed that this entry be upgraded as the key northern entry providing access to parking at McLaughlin oval but also through to the Salt Pan Parklands. Key upgrade works proposed include:

- provision of a roundabout at Wiggs Road
- retention and upgrading of existing entry and paved forecourt
- widening of existing road to cater for two way access
- provision of a separated shared path from Wiggs Road

b. Kentucky Road Entry
A new vehicular entry is proposed off Kentucky Road integrated with the Riverwood LUIIP development. This would be integrated with pedestrian and cycle access and provide an active linkage into the park. A roundabout would be provided within the park to distribute vehicles to either the Salt Pan Parklands on the former landfill site or to McLaughlin Fields under the M5. This arm would be able to be closed if desired during certain periods when through access is desirable to be avoided

c. Kentucky Road (special event access)
A new entry driveway is proposed to be provided through Kentucky Reserve providing flexibility to manage event vehicular access. This would be concrete paved similar to the shared access network and would be used as p[art of shared access network during non event times.

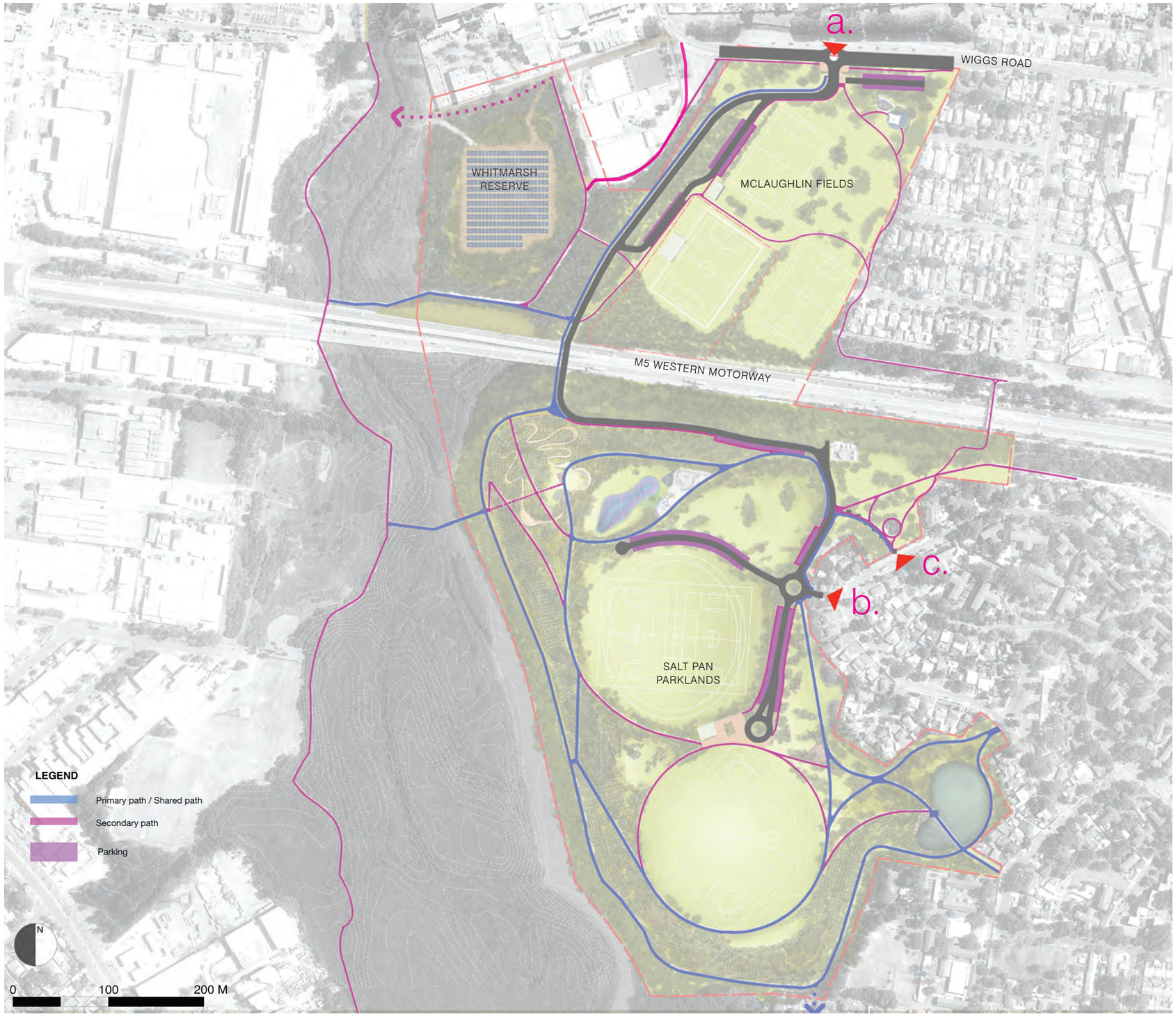


Figure 2.6 Site entry and access

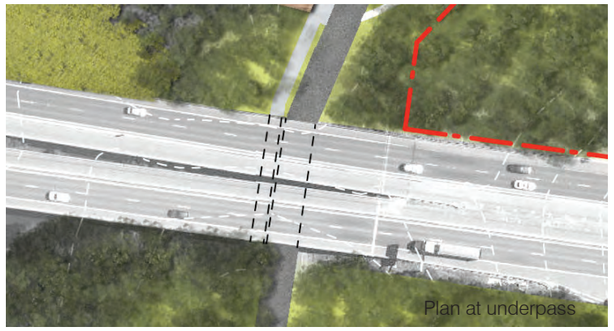
M5 Underpass

The underpass to the M5 is an important connection between the north and south, and is seen as both a vehicular and pedestrian / cycle link between Salt Pan Parklands and McLaughlin Oval and for pedestrians and cyclists to the areas beyond the site to the south west and north.

It is expected that the zone around the M5 underpass will become a busy hub of movement day to day. However the current character of this area is dark and un-inviting.

It is proposed that this area be subject to works including the following:

- selectively trim existing casuarina that have encroached on roadway
- widen roadway as two way site access route
- provide off road shared path
- provide solar feature lighting under road structure subject to RMS
- provide protective netting to motorway edging to catch debris
- recognise street art to pier structures and interpret on site maintaining views corridors, potential night lighting



Plan at underpass

Existing view south at underpass

Illustrative view of proposed improvements at underpass

Creek Crossings at M5

The site is flanked by the M5 and the Salt Pan Creek riparian corridor that limit pedestrian and cycle access. Examination of access at these interfaces seeks to pursue some key principles:

- Integrate with broader recreational access systems
- provide multiple pedestrian entry points to parklands
- create a diversity of loops and routes
- link experiences within and outside the parklands

An existing timber boardwalk and bridge structure in generally poor condition (see a. on Figure 2.8 below) provides access across the drainage channel from Wiggs Road and then across Salt Pan Creek linking the eastern side of the creek to the Salt Pan Creek access corridor.

With ongoing redevelopment of McLaughlin Fields the levels of activity in the area will increase and provide greater surveillance for this access through mangrove vegetation. An upgrade of the facility is required using contemporary boardwalk materials (eg FRP Mesh deck and Steel frame) .

A secondary access across the drainage channel is proposed to provide more direct access for those moving under M5 from south and localised access loops (b.)

A further connection to the south side of the M5 is proposed (c) to link the Salt Pan Parklands to the Creek Corridor access system and could integrate will to the proposed masterplan design elements of the hilltop viewing point.

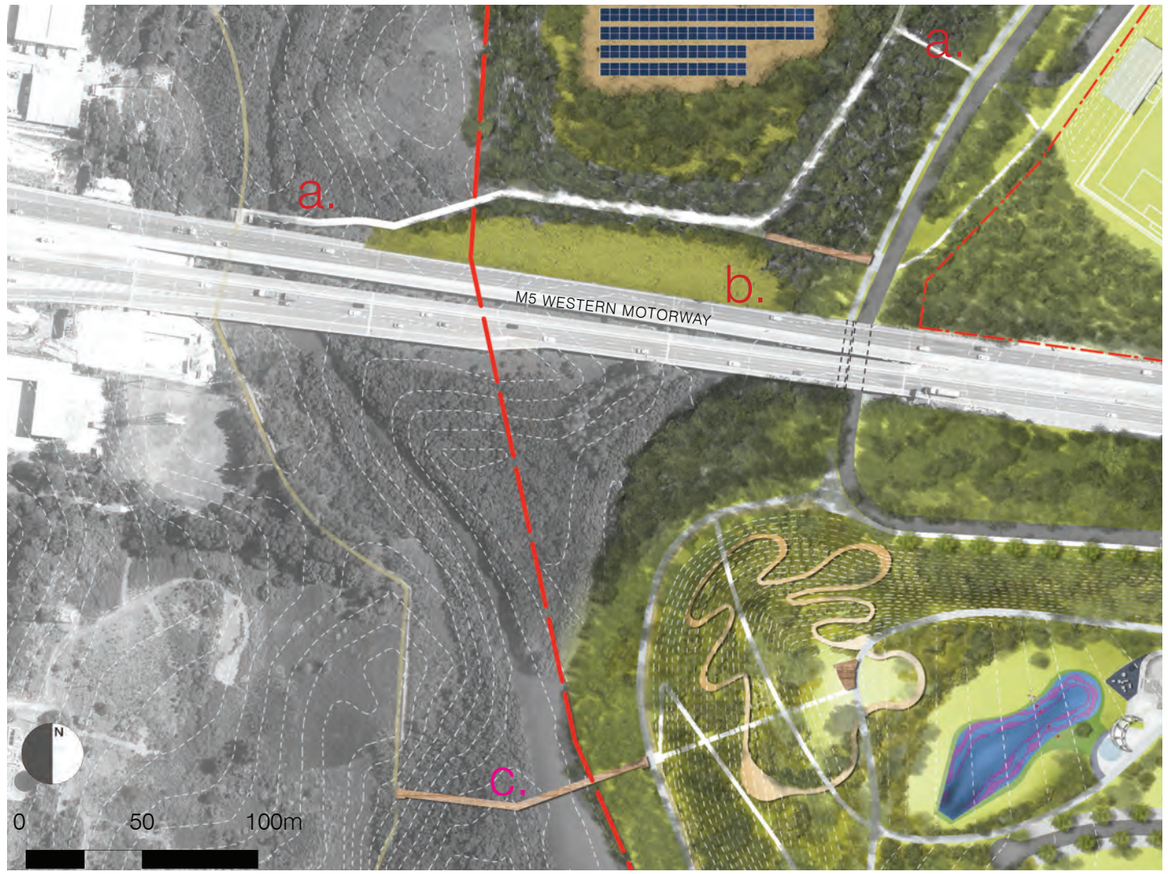


Figure 2.8 Salt Pan Creek corridor access connections

MASTERPLAN

Salt Pan Parklands

Concept proposals for the reconfiguration of McLaughlin Oval are outlined following with the relevant masterplan items referenced on the plan this page:

2. New entry from Kentucky Road
- New entry and roundabout within park site to distribute traffic to parking and to road access to McLaughlin Oval
- Potential for north arm to be gated to regulate use

4. Parking areas - Salt Pan Parklands
- 90 degree parking to access road
- 90 degree parking to northern parkland
- 90 degree parking to northern parkland

5. 2.5-3m Shared access / maintenance perimeter path to east edge
- Multi use path at junction with adjoining residential neighbourhood
- Rip rap walling to conserve existing trees in filled zone at boundary
- Fitness equipment nodes and shaded seating stimulating activity

6. Shared access / maintenance perimeter path to creek edge
- Multi use track in vicinity of existing maintenance access

7. Shared pedestrian cycle access loop
- Trunk shared access route linking to off site connections and to McLaughlin Fields north of M5

8. Secondary pedestrian paths
- Supporting pedestrian access paths from entry points

9. Regional access links across / along Salt Pan Creek
- Boardwalk access across Salt Pan Creek south of M5 connected to hilltop lookout
- Linkage to south to existing bridge crossing of creek

14. Multi-purpose playing field areas
- grassed platforms flexible to various field configurations and sports

15. Public amenities / facilities
- Centralised public toilets and change rooms to serve field and general park use supported by shaded plaza

16. Skate Bowl/Parkour Facility
- Skate Bowl integrated into landform
- Parkour sculpture park integrated into landform

17. Mountain Biking Circuit
- Mountain Bikin g track system integrated into filled hill zone and linking up to hilltop

18. Adventure Playground
- Adventure integrated into landform and within tree canopy
- Overlooked by grassed slopes

Figure 2.6 Masterplan - Salt Pan Parklands

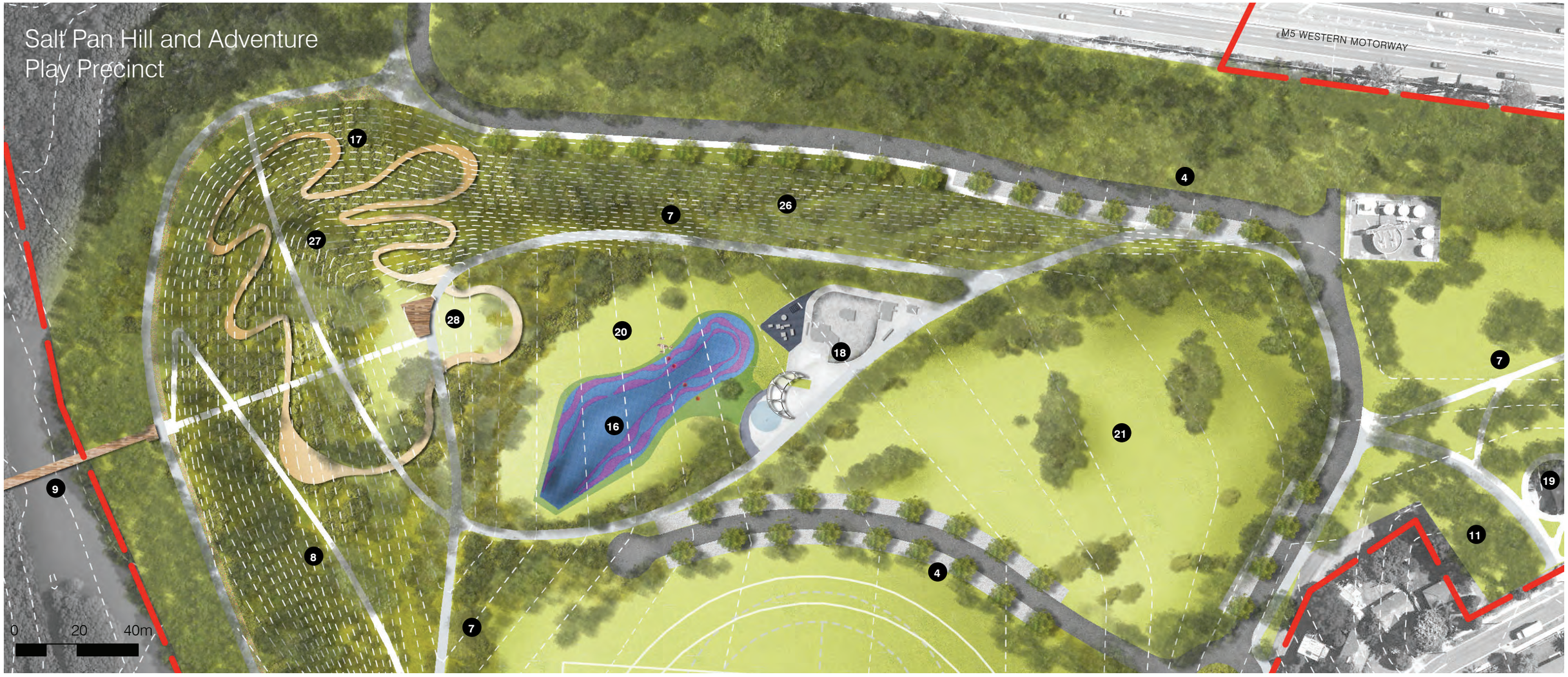


Figure 2.7 Masterplan - Salt Pan Parklands - adventure play zone

19. Local Community Play Space

- Retain and enhance community playspace adjoining neighbourhood on Kentucky Road at Michigan Road
- New playspace adjoining neighbourhood on Kentucky Road at Wyoming Avenue

20. Amphitheatre/viewing areas over activities

- Gentle grassed slopes with overlook to sports or active play facilities

21. Open grassed gathering, event, informal game and picnic space

- Gentle grassed slope (1:33) down to Riverwood Open space corridor
- Potential as event amphitheatre for special events
- Play and picnic grasslands day to day

22. Open grassed informal game and picnic space

- Open grassed area suitable for informal games and play and supported with shade tree canopy and park furniture
- Connected by supporting path linkages

24. Stormwater harvesting and water quality wetlands

- Stormwater from adjoining public domain directed through wetland filtration and providing water body
- Low flow and overflow connection to Salt Pan Creek
- Potential water harvesting for irrigation

26. Revegetation of embankments

- Filling over capping layer to enable soil profile for mature tree canopy and native understorey to extend riparian corridor

27. Earth Mounding/Landscape visible from M5

- Filling over capping layer to provide high point visible from M5 and as viewing point over site -7-8m above existing levels
- Provide soil profile for mature tree canopy

28. Hilltop Iconic Artwork and Lookout

- Iconic structure to provide viewing outlook over creek corridor

29. Viewing point to Salt Pan Creek corridor

- Viewing point to Salt Pan Creek corridor at edge of fields adjoining path intersection

MASTERPLAN

Parkland edge to new community

The interface of Salt Pan parklands to the residential community of the Riverwood LUIIP development is a key zone for integrating the parklands to the adjoining public and private domain. An active and safe interface of the two is critical to the character of the parklands and the amenity of the new housing.

New residential buildings adjoining the park will generally be six storeys in height and effectively have a dual frontage to Kentucky Road and the park. It is desirable that the park frontage be active with multiple access points to buildings and landscaped frontages integrating with the park frontage.

Key influences

Some key planning influences in this area that have informed the masterplan recommendations are outlined following

Levels and drainage

It was resolved with Council's consultant remediation engineers that it was necessary to work above the existing landfill levels and avoid any disturbance or regrading of landfill. There is an existing 1:4 gradient grassed batter slope at this edge which creates a barrier to views and access. In addition existing levels along the park boundary create a number of trapped low points in a "valley" between the adjoining residences which slope to the west from Kentucky Road and the landfill which are not effectively drained.

It is proposed that levels along the edge of the parklands are raised to provide a consistent fall from north to south draining to the proposed wetland basin. This will also enable filling over the existing embankment to reduce the gradient to a more gentle profile that will encourage access and enable visual links up the slopes into the parklands (refer Figure 2.9 cross section opposite). Filling will ideally extend into adjoining development sites to provide an even transition and gentler gradients through those sites. This would also potentially reduce amount of excavation for basement parking.

Existing trees

The triangular space which adjoins the eastern boundary is identified as an open space on the Riverwood LUIIP concept plan. There are a number of trees through this area believed to have been planted that would be desirable to conserve. As such it is proposed to modulate the landform around these trees with the filling programme to enable their retention (refer Figure 2.9)

Activation

As noted above it is important that the interface has a balance of enough activity to create character and safety but not excessive activity so as to disturb residents. As such a shared path will run along the park boundary providing an easily accessible north south link connecting to the park frontages of the residential buildings. This will be supported by fitness nodes shaded seating and general tree planting in the maintained grassed embankment.

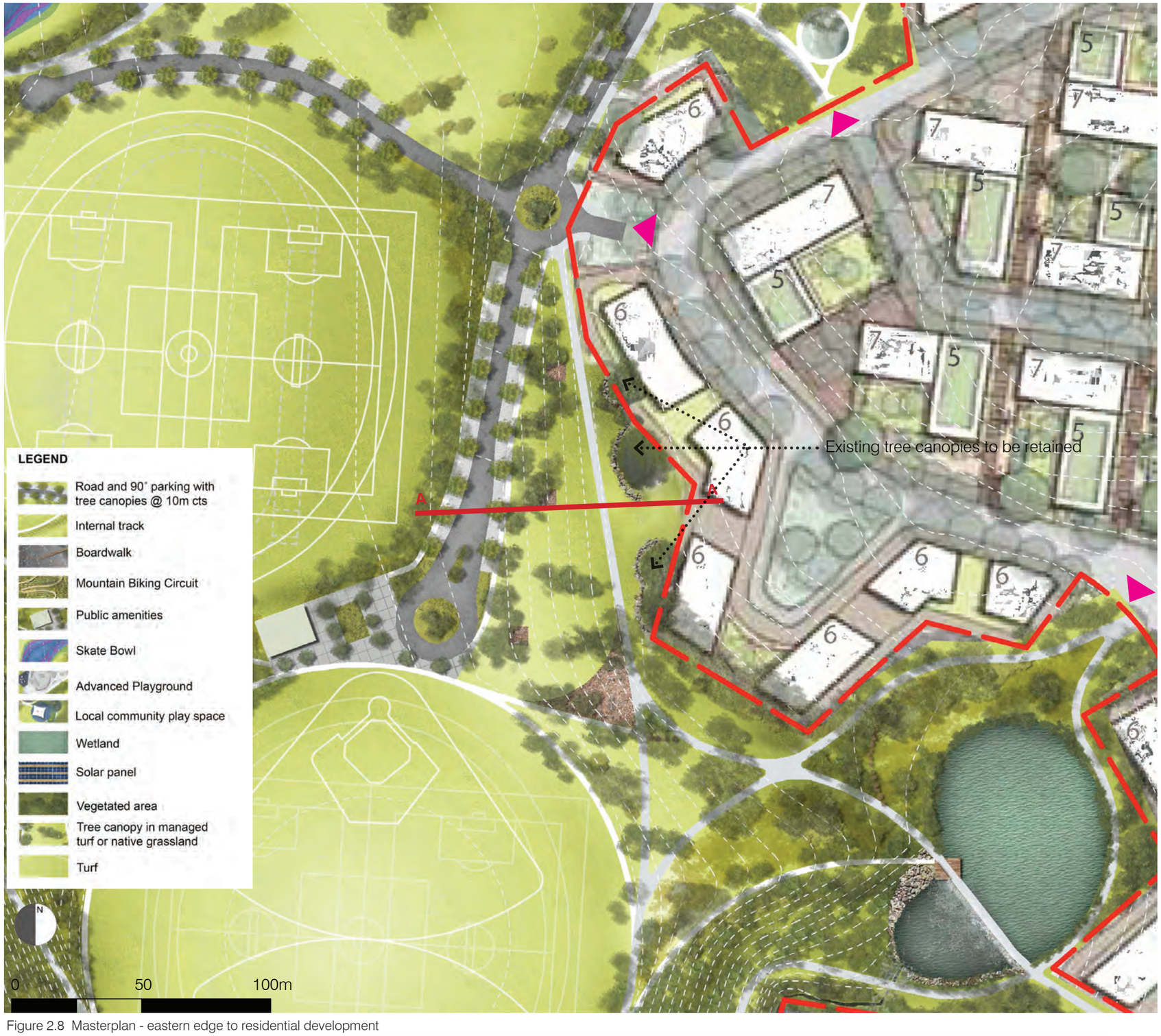


Figure 2.8 Masterplan - eastern edge to residential development

Existing view at eastern boundary

Example of rip rap walling enclosure for tree retention

Illustrative view of proposed improvements at eastern boundary

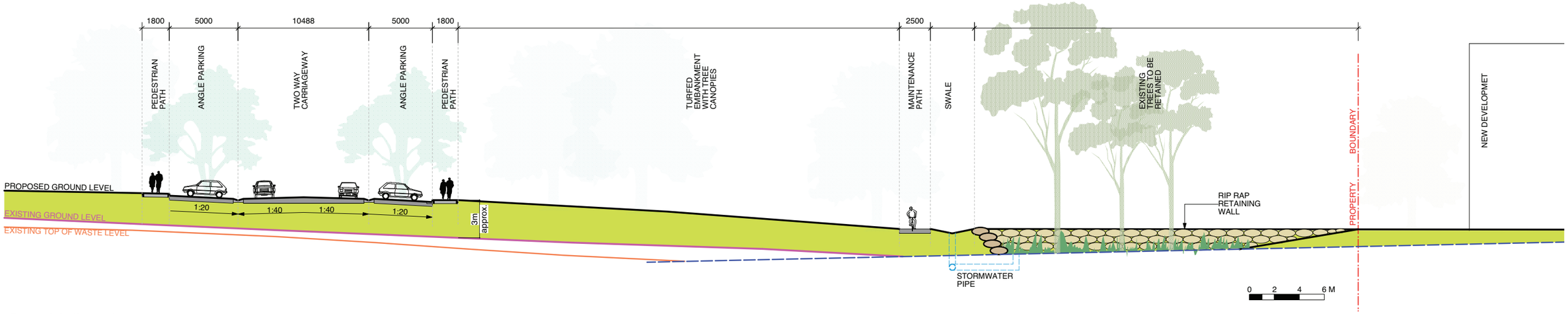


Figure 2.9 Cross Section through eastern edge to residential development

MASTERPLAN

The following pages illustrate the nature of usage that is envisaged across the park precincts upon development of the park development and improvements.

Active Recreation

Children's Local Play Area

- Play equipment located for access by the local community



Skate Bowl/Parkour Facility

- Skate park and bowl
- Parkour/excercise equipment



Mountain Biking Track Circuit

- Short circuit Mountain Biking trails
- Trails and mounding at varying levels of difficulty
- Ability to rotate trails to manage impacts



Adventure Playground

- Challenging activities / equipment serving a variety of ages
- Combination of custom and propretary elements
- Equipment ranging in difficulty /size



Sports Fields/Amenities

- Multipurpose fields for organised sports and training
- Clubhouse/amenities to serve sporting events



Illustration - Adventure Playground

MASTERPLAN

Informal Recreation

Amphitheatre/Viewing Areas

- Shaped landform to create diverse opportunities for use and events and to create visual interest

Boardwalk/Bridge Outlook Decks

- Boardwalk through and around mangroves and creek edge
- Viewing tower and decks allowing vantage points along creek and back towards park

Circulation & Parking

Open Recreation/ Walking Tracks

- Walking tracks from open recreation areas to creek edge and adjoining residential area

Parking

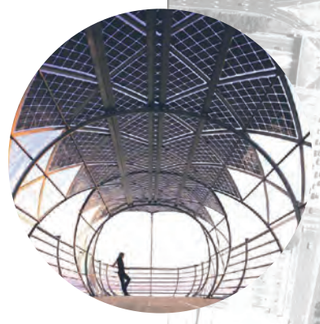
- Provide 90 degree parking with tree canopies @ 10m cts within Salt Pan Creek Reserve II
- Provide 90 degree parking with tree canopies @ 10m cts within McLaughlin Oval
- Provide parallel parking within McLaughlin Oval

MASTERPLAN

Sustainability

Energy Generation

- Solar Farm



Stormwater Harvesting and Interactive Water Play Areas

- Multipurpose fields for organised sports and training
- Clubhouse/amenities to facilitate sporting events

Illustration - Indicative character intended in the area of the Salt Pan Parklands wetlands

MASTERPLAN

Hilltop Artworks / Gateway Feature

Earth Mounding/Landscape Art

- Earth mounding to create visual high point / landmark
- Lookout point reinforcing visual landmark
- Art installations that help identify park

Hilltop Iconic Artwork

- Visible for wide area
- Possible art competition for design
- Potential integrated kinetic / light / shadow sculpture

Existing View to site from M5 Motorway looking east

Illustration - Gateway Feature from M5 Motorway looking east

page left blank for double sided printing