# Marion Cultural Centre Plaza.
# Two Way Arrangement.

June 2023.

## Design Development Report.

**Prepared by:**
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258a Rundle Street
Adelaide SA 5000

# Acknowledgement of Country.

We acknowledge and respect Traditional Owners across Australia as the original custodians of our land and waters, their unique ability to care for country and deep spiritual connection to it. We honour Elders past, present and emerging whose knowledge and wisdom has and will ensure the continuation of cultures and traditional practices. We acknowledge that this project will be delivered on the lands of the Kaurna people, the traditional owners and custodians of the Adelaide Plains.

# Contents.



## Document Control

| Item | Date |
|---|---|
| Two-Way Design Development Report | 10.02.2023 |
| Two-Way Design Development Report Rev 2 | 09.03.2023 |
| Two-Way Design Development Report Rev 3 | 20.03.2023 |
| Two-Way Design Development Report Rev 4 | 07.06.2023 |
| Two-Way Design Development Report Rev 5 | 08.06.2023 |

# 01

# Landscape Masterplan.

***The Marion Cultural Centre (MCC) Plaza provides an opportunity to create an active public realm that enhances the Regional Centre as a destination, supporting community activities, social engagement and the visitor economy.***

The design principles previously developed to inform the concept design will be upheld during the design development and documentation and are as follows:

- Improve pedestrian and cyclist connectivity, amenity and safety through the subject area for linkages between the local residential areas, the Oaklands Station, MCC, SA Aquatic and Leisure Centre (SAALC) and Westfield and other facilities on Milham Street.
- Development of a plaza that can be utilised for community events and provide improved amenity for community use between the MCC and the SAALC with due consideration of events planning requirements.
- Retention of vehicle access to existing business and community facilities within Milham Street, whilst minimising traffic volumes.

Key design outcomes reflected in the plan include:

- Flush roadway with designated crossing points
- WSUD rain garden
- Retention of existing trees
- Shelter with small stage to facilitate events and small performances
- Public art including roadway treatment
- New tree planting throughout the space to increase canopy coverage and reduce heat
- Retention of State Heritage building features
- Pedestrian refuge crossing and median planting to Diagonal Rd

Following a Council decision on 29 November 2022, the design is to implement a two-way road design on Warracowie Way and retention of vehicle access to Westfield Shopping Centre.


Landscape Masterplan, refer page 15 for details

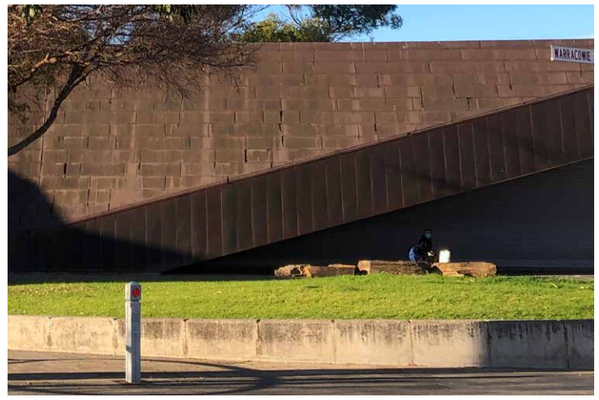
# 02

# Existing Character.

The existing materials and built forms adjacent and within the Marion Cultural Centre Plaza form a strong and cohesive design language.

As shown by the images, the space holds a collection of irregular, natural stone that sits against the smooth, linear form of the Cultural Centre building. While the shapes and lines created from these forms are often sharp and jagged, the texture introduces an organic element.

In developing the design we have drawn upon these forms and materials so that the plaza is read as an extension to the building. A simple and uncluttered plaza area will allow the building to feature within the space.



# 03

# Spatial Planning.

**Movement**

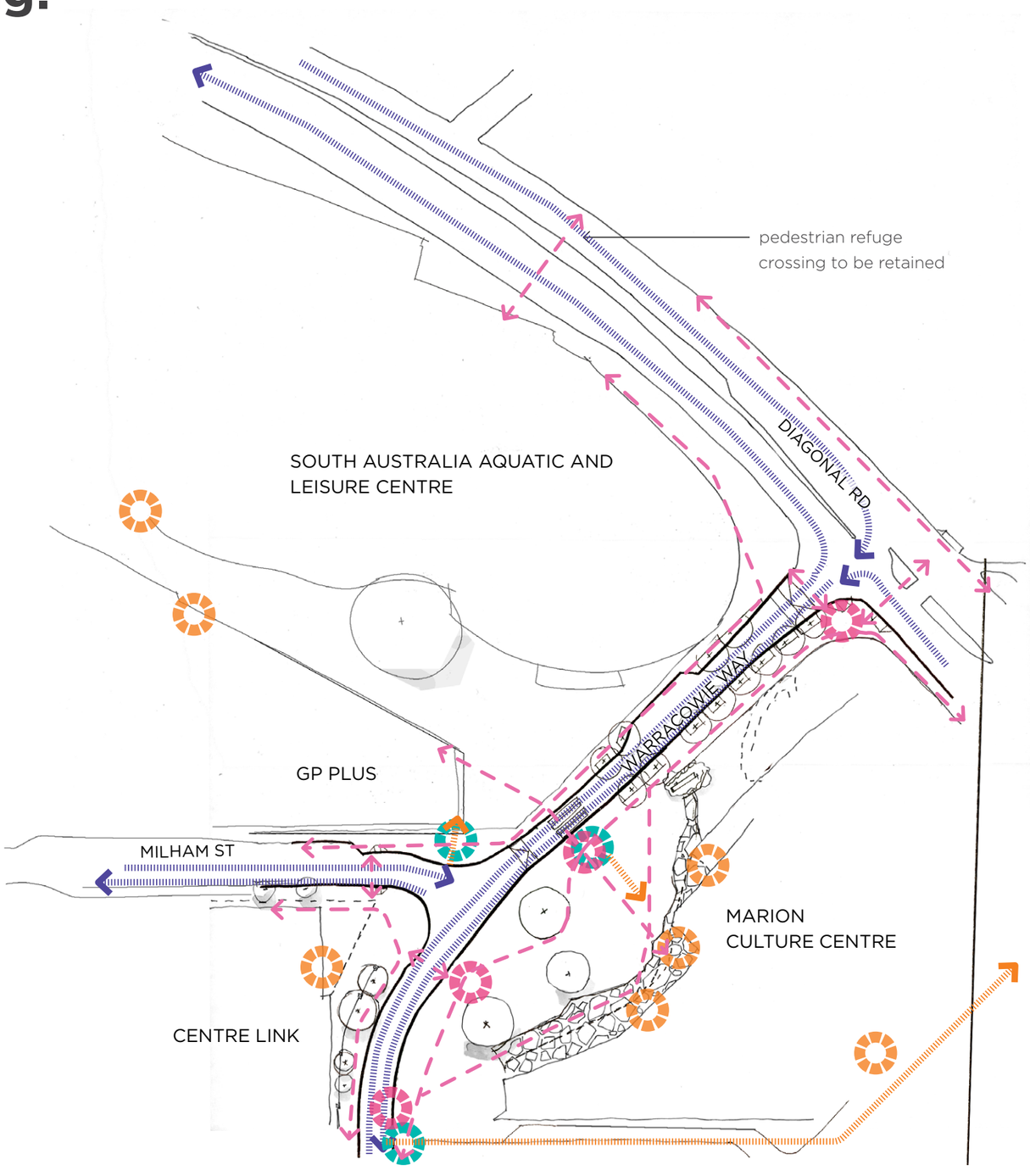
As outlined in the previous pages the key moves that will establish the Plaza as a pedestrian and events space are:

- Temporary closure of Warracowie Way and area south of Milham Street for events
- Implementation of an at-grade roadway between Diagonal Road and Milham Street with retention of two-way traffic and a dedicated pedestrian crossing
- Installation of a pedestrian refuge crossing to Diagonal Road
- Remove vehicular right turn out of Warracowie Way onto Diagonal Road (currently challenging movement), south bound movement from precinct permitted from Milham Street.

The at-grade road surface along Warracowie Way will include a designated zebra crossing for pedestrians. This will clearly delineate pedestrian right of way and establish priority for plaza users as well as slowing vehicles travelling through the space.  Retractable bollards will be utilised to close this section of road during events.

The pedestrian desire lines into and within the space will allow ease of access to the Cultural Centre and through to other adjacent services by maintaining clear sight lines and wayfinding signage at decision points.

Service delivery access will be facilitated by access to the South of the Centre and via a controlled service entry. This entrance will be as per current conditions with signage and managed by the Cultural Centre staff




**LEGEND**

- Pedestrian movements
- Vehicle movements
- Service delivery movements
- Key pedestrian gateways
- Building entrance
- Controlled access point (Refer control access plan)

## Vehicle Access

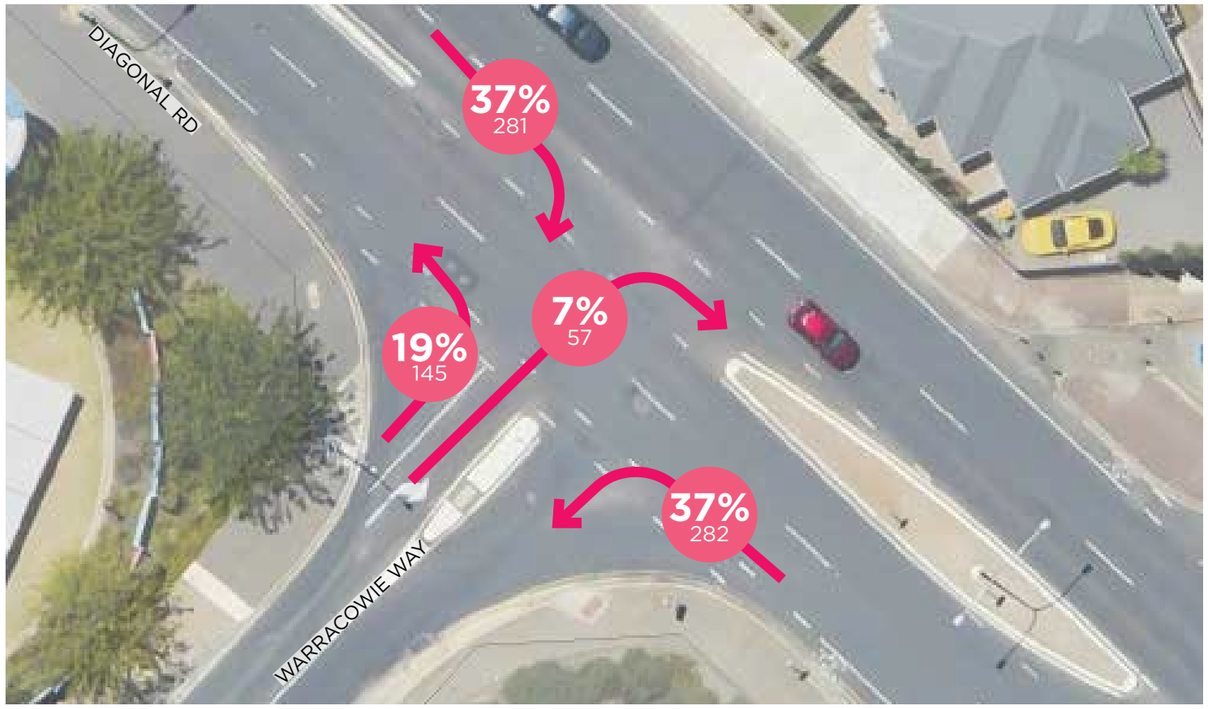
Assessment of existing vehicle access and proposed turning movements at intersections has been based on various Council and DIT traffic counts and a review undertaken in late 2019 by MFY consultants.

Traffic volumes on Warracowie Way have been estimated at approximately 4,500 vehicles per day, with a reasonably consistent volume across weekdays and Saturdays. This volume comprised 2,500 vehicles travelling south west bound and 2,000 vehicles travelling north east bound. Milham Street carries approximately 3,500 vehicles per day on a weekday and 2,400 vehicles on a Saturday. The connection into Westfield Shopping Centre currently carries around 3,600 vehicles on a weekday and 3,800 on a Saturday. Diagonal Rd carries approximately 29,000 vehicles on a typical weekday and around 24,000 vehicles on a Saturday.

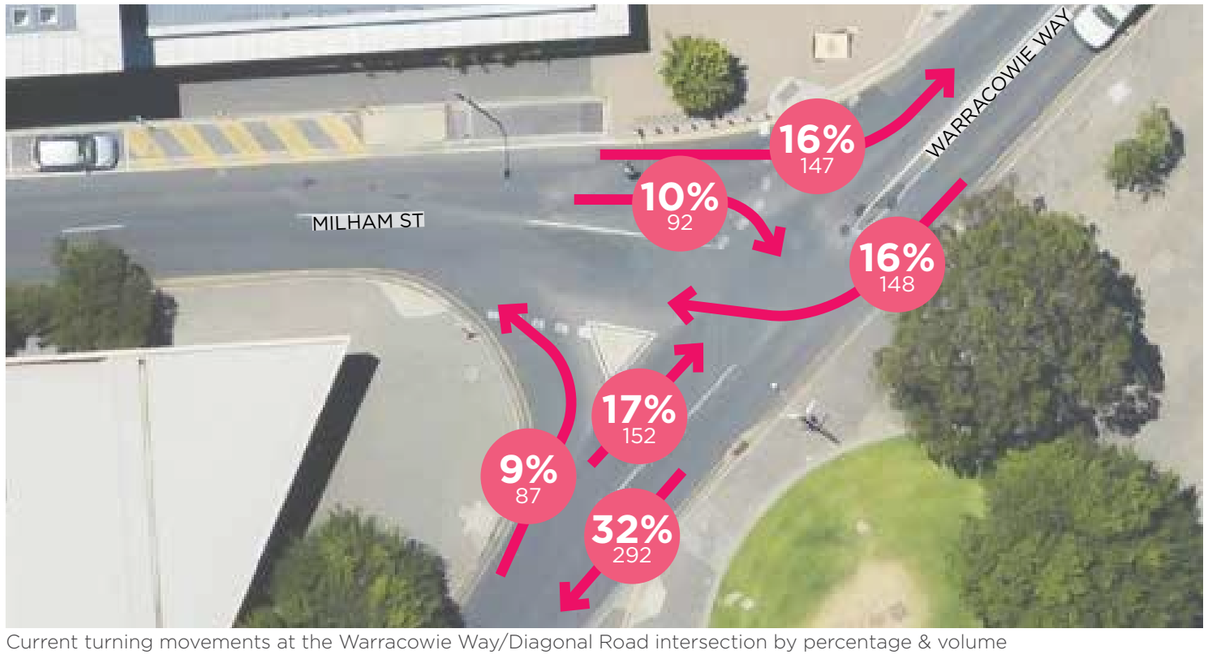
During network peak hours the Diagonal Road/Warracowie Way intersection has a throughput of approximately 1,700 vehicles in the AM peak hour and 2,400 vehicles during the PM peak hour. Of these volumes 78% in the AM peak and 83% in the PM peak were Diagonal Road through traffic. Peak hour volumes on Warracowie Way are between 350 and 400 in each peak hour.

Of those movements, the right turn out of Warracowie onto Diagonal Road accounts for only 21 vehicles in the AM peak and 36 vehicles in the PM peak, which is less than 10% of the total movements on Warracowie Way during the peak hours. This percentage would be expected to increase during interpeak periods when traffic volumes on Diagonal Road are lower but would still be expected to remain at only 10-15% across the day, or a volume in the order of 400-500 vehicles removed from Warracowie Way. The average wait time to make the right turn movement out of Warracowie was modelled at 100 seconds delay in peak periods, which would explain the very low peak hour volumes.

The issues with the right turn out of Warracowie Way is also reflected in the crash data. This shows that, although the right turn out from Warracowie Way is only a small proportion of the traffic, this turning movement resulted in 9 of the 15 recorded crashes at the intersection over the most recent 5 year period. Removal of the right turn exit would therefore provide a significant safety benefit to the intersection. The level of delays estimated for this turn is likely to have contributed to the poor crash record, as drivers choose to take greater risks to reduce delays.




Current turning movements at the Warracowie Way/Diagonal Road intersection by percentage & volume in AM & PM peak. (Data sourced from MFY Options Report, 2019)

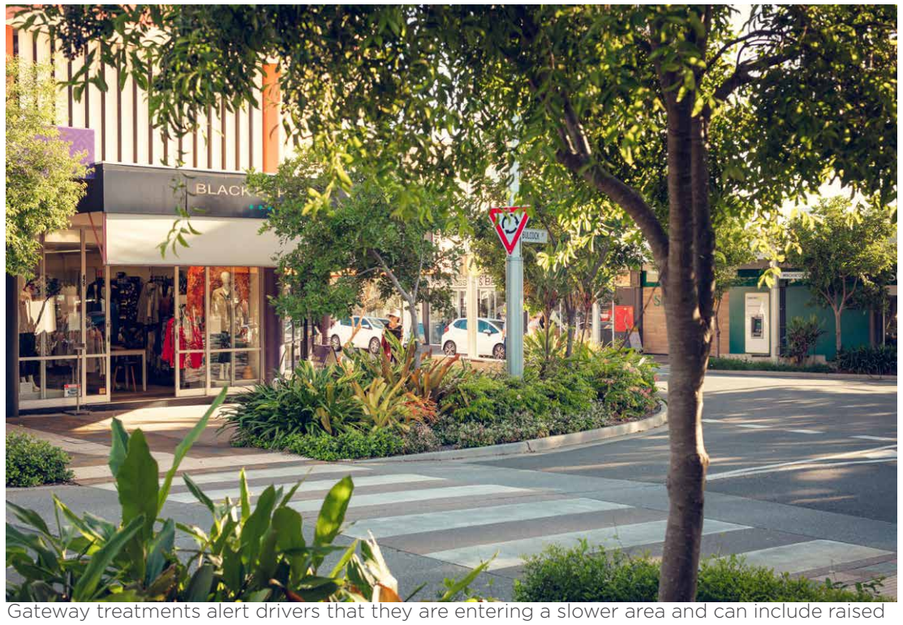



Current turning movements at the Warracowie Way/Diagonal Road intersection by percentage & volume in AM & PM peak. (Data sourced from 2014 GTA/Stantec Report)

## Traffic Calming

The creation of a pedestrian friendly Plaza space and streetscape will utilise best practice traffic calming measures to slow drivers and indicate a change of road environment. These strategies will be carefully considered in relation to the safety of all road users and will be tailored to suit Warracowie Way. Strategies outlined by the Global Designing Cities Initiative that will be integrated into the design include:

- Lane narrowing (To 6m wide roadway)
- Reducing corner radii
- Implementing tree planting
- Gateway treatments
- Pedestrian refuge crossings (on Diagonal Road only)
- Differentiation in pavement materials
- Raised roadway treatment
- Formalised pedestrian crossing indicating right of way.



Gateway treatments alert drivers that they are entering a slower area and can include raised crossings, kerb extensions and signage.

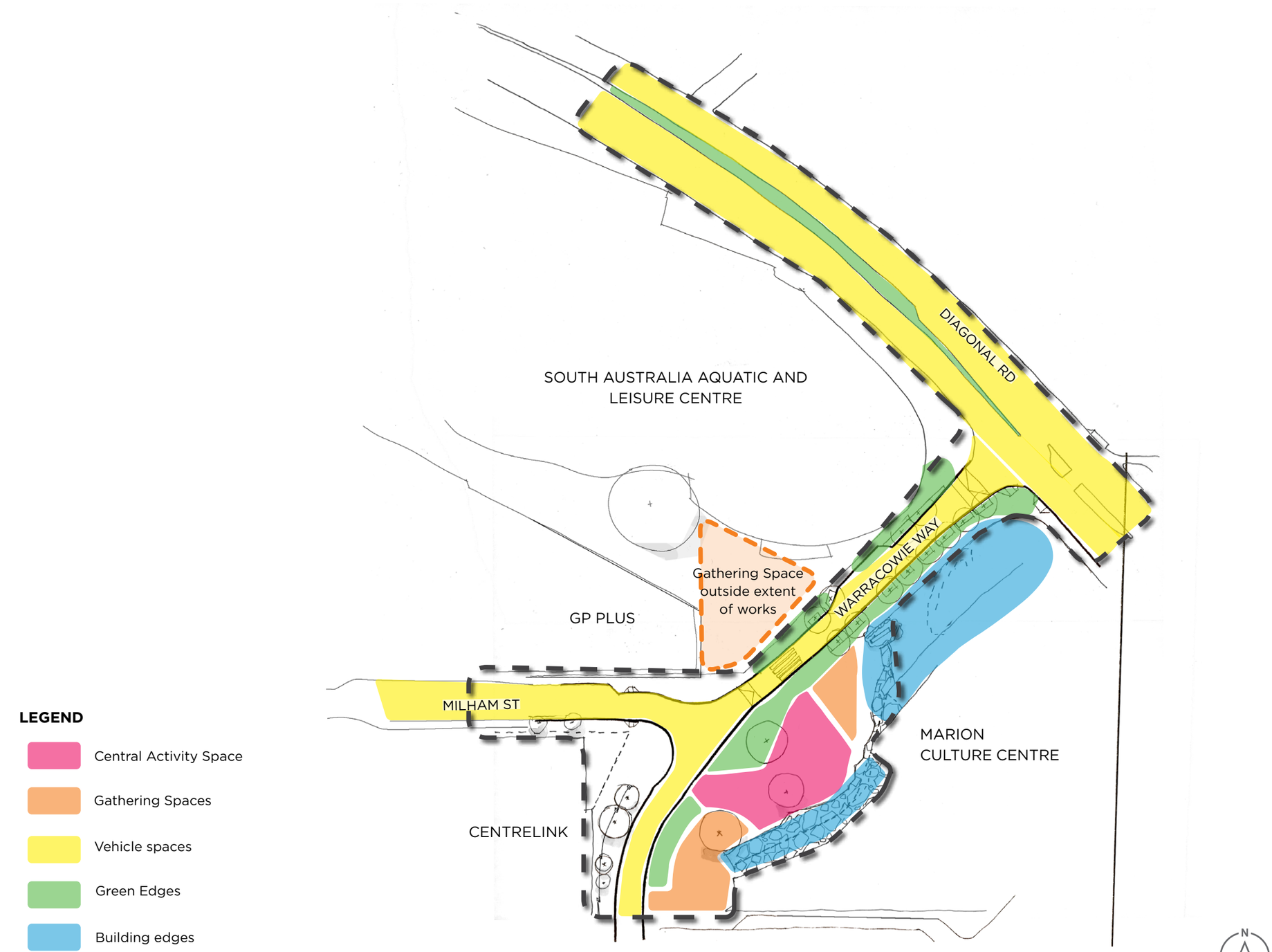

Lane narrowing assists in reducing speeds by reducing the right of way and making drivers more wary of traffic and adjacent road users.


Pavement materials add visual interest, highlight crossing areas indicate a change in conditions to drivers and pedestrians.


Narrowing corner radii at intersections helps to reduce vehicle speeds and pedestrian crossing distances.

## Zones

Mapping of the pedestrian and vehicle movements create clear zones that each have their own purpose and design elements. The development of the design builds upon these zones and considers how the spaces function as a whole to create a connected and vibrant plaza space.



# 04

# Plaza Spaces.

The four areas identified within the Plaza each have a unique function but fit together to form a multi-use space that services the community for both events and everyday use.

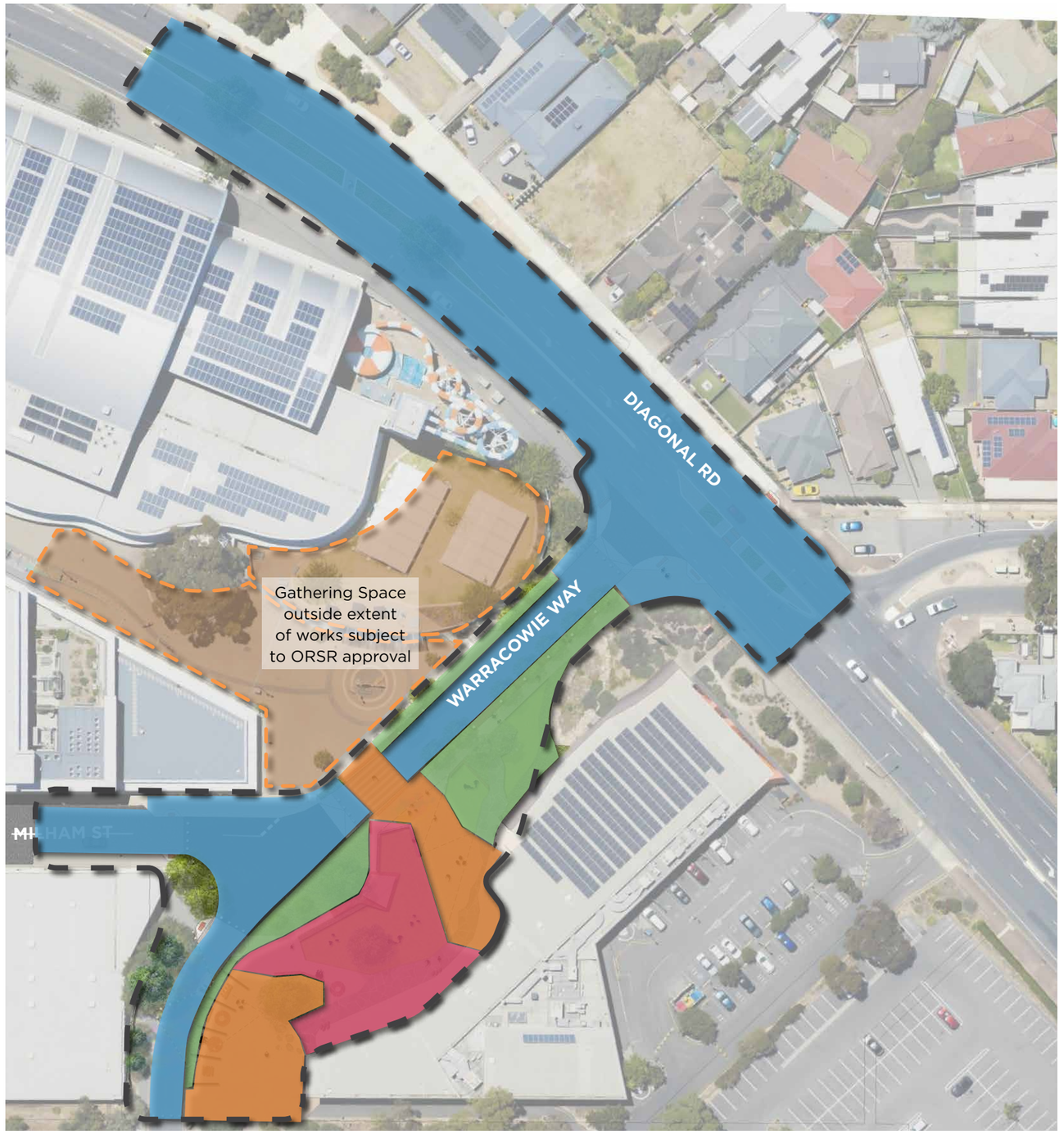
The design elements within each space are summarised on the following pages.

**Connection**

**Gathering**

**Central Activity**

**Green Edge**



# Connection


**Diagonal Road upgrades**

- Pedestrian refuge crossing
- New tree and understorey median planting consistent with previous upgrades


**Flush Roadway**

- At grade roadway delineated with pavement treatment
- Retractable bollards for road closures during events
- 2 X indented passenger drop off bays


**Intersection treatment**

- Paved intersection treatment to assist with traffic calming
- Opportunity to utilise permeable paving


**Pedestrian crossings**

- Designated pedestrian crossing points
- New tree and understorey median planting consistent with previous upgrades

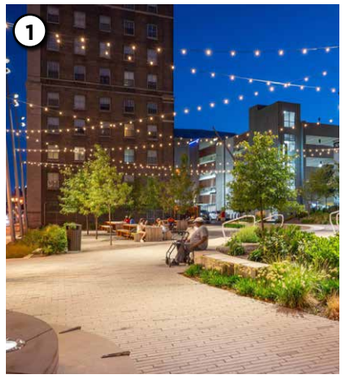

**Pavement Artwork**

- Pavement artwork opportunity to roadway surface (outside of pedestrian crossing points)


**Retractable bollards**

- Supports events planning for various scales
- Supports temporary road closures

# Gathering




**Open Plaza Space**

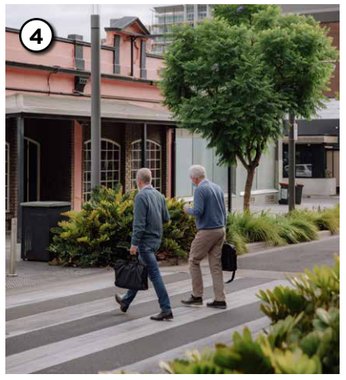
- Gathering and event space
- Catenary lighting attached with integrated GPOs in poles for events
- Height of catenary lighting to allow for service vehicle heights


**Wayfinding**

- Vibrant signage designed to reflect local character

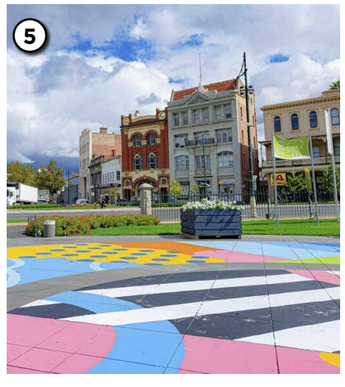

**Warracowie Wells**

- Relocation of pavement inlay artwork
- Seating area adjacent main circle
- Ensure outside vehicle circulation




**Zebra crossing**

- Pedestrian priority to link SAALC and Plaza




**Pavement artwork & signage**

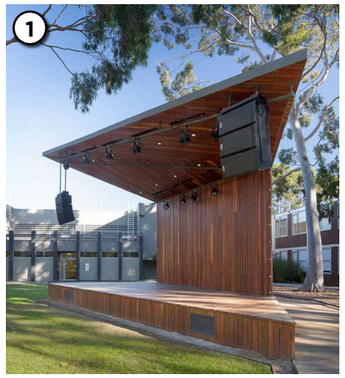
- Pavement artwork opportunity incorporating Kaurna story telling and represent indigenous community
- Welcome signage to low retaining wall


**Arbour**

- Integrated lighting
- Integrated seating
- Potential to integrate misters
- Climbing plants to arbours
- Screening barrier to streetscape


Not to scale

# Central Activity



**Raised Deck & Shelter**

- Integrated seating
- Equiped with performance & stage capabilities during events
- Slimline shelter with integrated wayfinding
- Power lighting

**Lawn**

- Provides permeable surface to existing Elm tree
- Connects stage and play area
- Provides seating and open space adjacent stage during events
- Reduces hard surfaces & heat in space
- Irrigated


**Building Interface**

- Strong connection to Cultural Centre entries and windows
- Create active edge with spill out space

**Integrated seating**

- Bespoke seating along edges of garden beds
- DDA compliant and inclusive
- Robust materials

**Existing Pavement & Trees**

- Existing slate paving associated with State Heritage listing to be retained and restored
- Retain existing seating rocks
- Retention of existing Corymbia & Elm trees
- Permeable surfaces to tree protection zones as per arborist report


Not to scale

# Green Edge


**Heritage Elements**

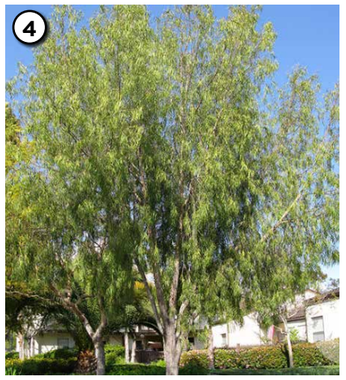
- Retain slate paving leading to 'N' arbour
- Garden bed to base of 'O' feature wall
- Existing slate paving to be retained


**Avenue Planting**

- Tree and understorey planting to define roadway edge and direct pedestrians to crossing point
- Strata cells to ensure adequate soil volume for trees
- Wide footpath for pedestrian connectivity


**Rain Garden**

- Water Sensitive Urban Design (WSUD)
- Trees and understorey planting




**Large feature trees**

- Native feature trees to strengthen existing Corymbia
- Provide screening and separation from the roadway
- Provide shade
- Increase biodiversity opportunities


**Lawn space**

- Increase useability and event space
- Provides seating and open space adjacent stage during events
- Reduces hard surfaces & heat in space
- Irrigated


**Arbor**

- Pedestrian gateway to Plaza from Westfield
- Trellis to integrate climbing plants
- Integrated seating
- Integrated pavement artwork 'Warracowie Wells'


Not to scale

# 05

# Landscape Plan.

1. Diagonal Road median planting
2. Retain right turn in lane from Diagonal Road

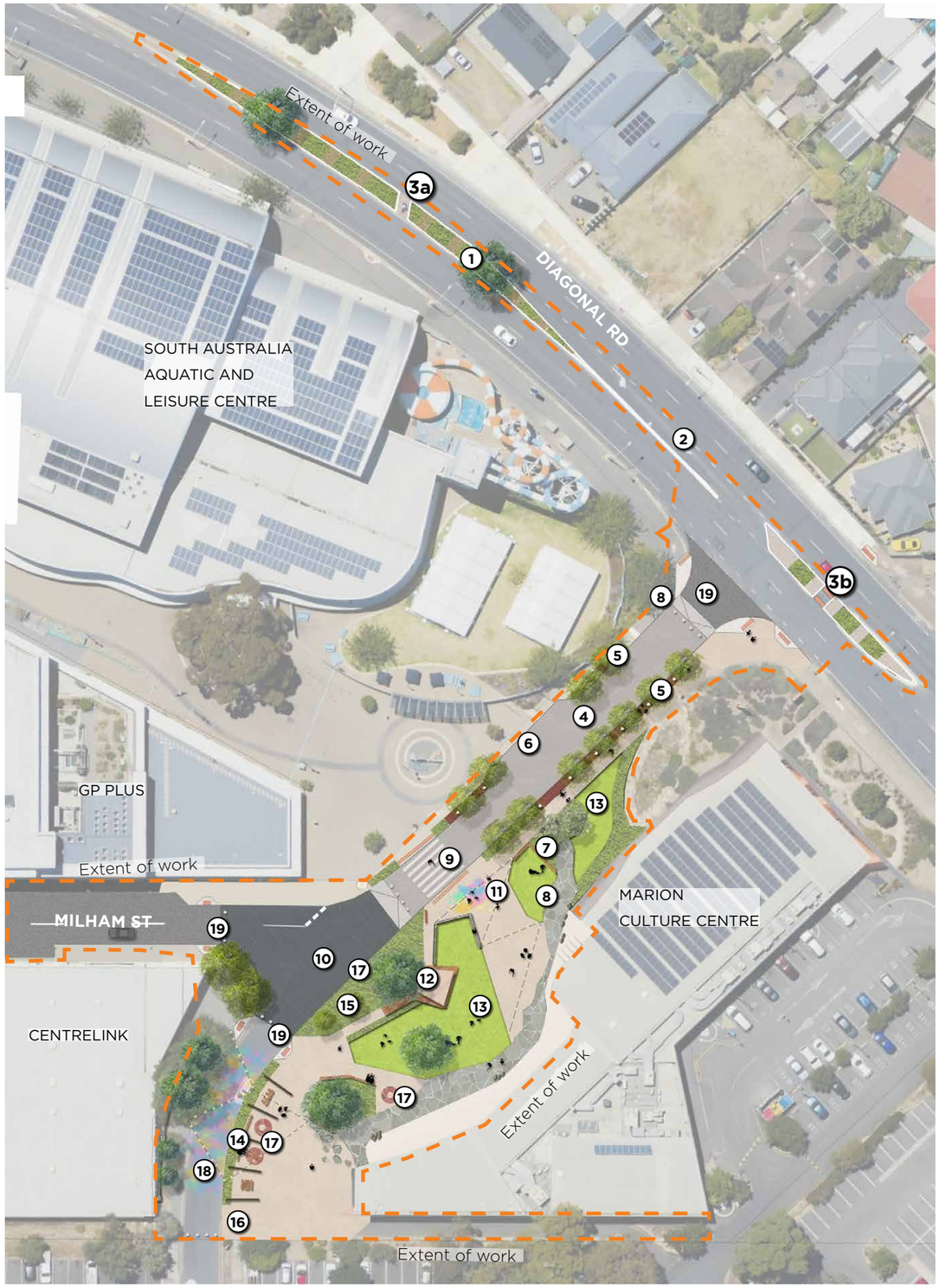
   Pedestrian refuge crossings to Diagonal Road

   3a. a. Existing to be retained

   3b. b. New refuge crossing
4. Warracowie Way flush, two way roadway
5. Tree planting in strata cells and garden beds along Warracowie Way to delineate roadway
6. Indented passenger drop off bays (time controlled park)
7. 'N' arbour retained in current location with new garden bed surrounds
8. Existing slate paving to be retained with increased lawn space adjacent
9. Zebra pedestrian crossing
10. Paved intersection treatment
11. Welcome signage/ Pavement artwork
12. Shelter and raised deck/stage area with accessible 1:20 ramp access
13. Open lawn space
14. Arbour with climbing plants and seating
15. Rain garden
16. Service vehicle access
17. Relocated Warracowie Wells pavement inlay artwork
18. Pavement artwork in roadway
19. Pedestrian crossing and retractable bollards to support temporary road closure for events and Warracowie Way extension

**LEGEND**

- Exposed aggregate concrete
- Concrete to flush roadway
- Natural slate paving
- Asphalt
- Road paving
- Timber decking
- Lawn
- Garden bed
- New tree
- Existing tree
- Festoon Lighting
- Retaining Wall
- Zebra crossing
- Relocated Warracowie Wells artwork
- Pavement artwork
- Shelter
- Digital Kiosk
- Pedestrian bollard

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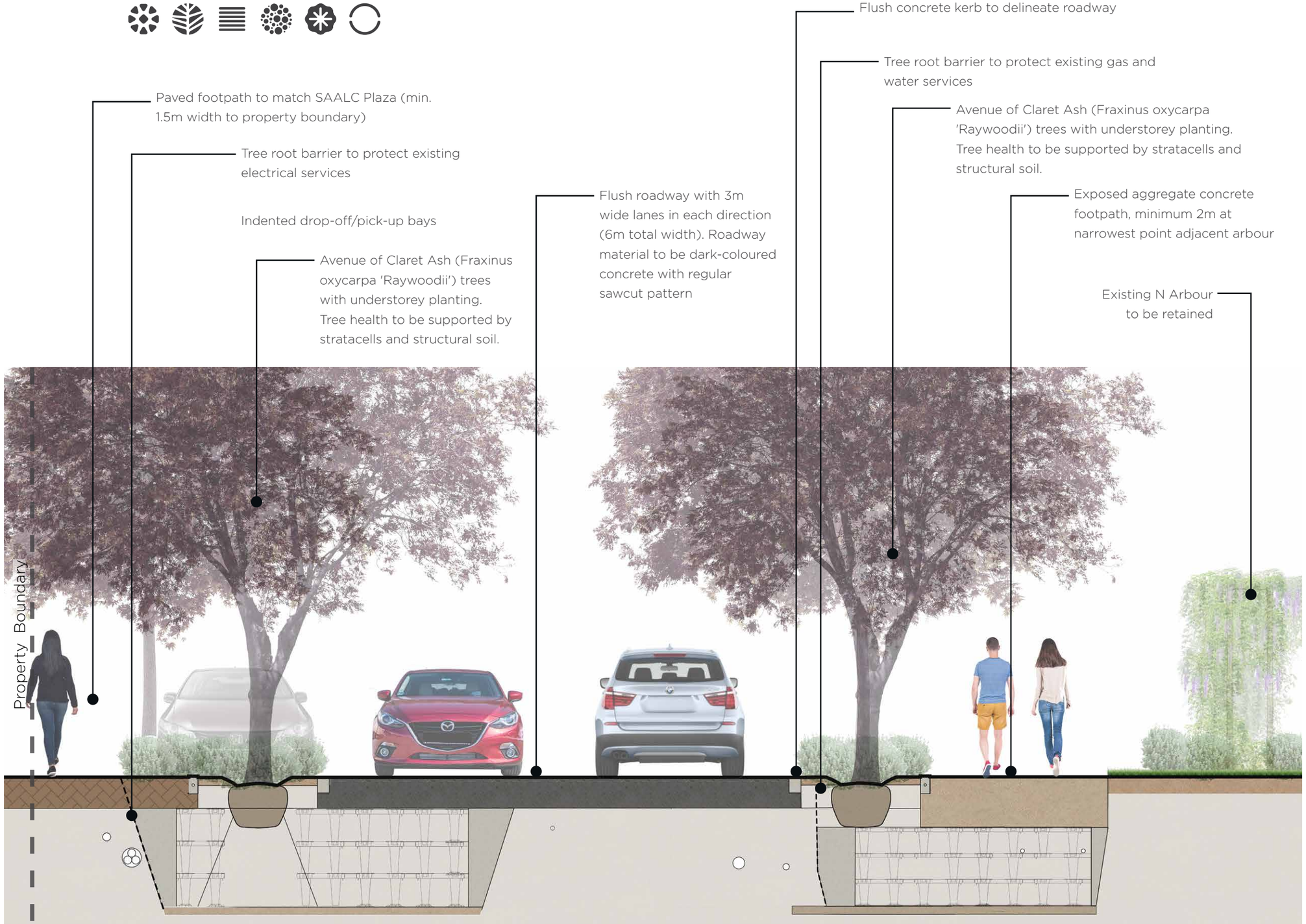
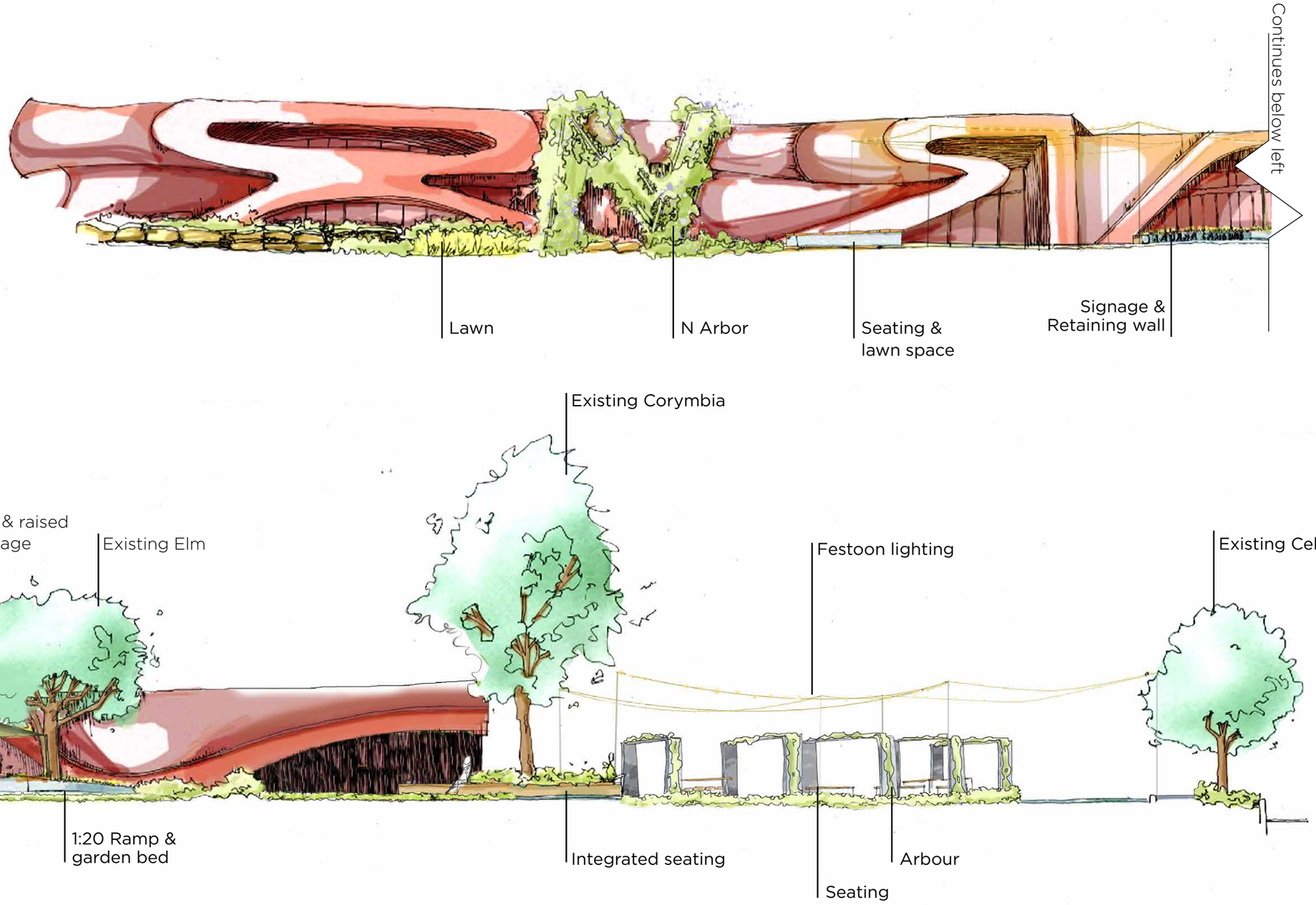
## Roadway Section




Section
Scale: 1:50 @ A3

**North-west Elevation**




Section
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MARION
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# 06

# Public Art

**Warracowie Wells Relocation**

The existing pavement inlay artwork, titled Warracowie Wells by artist Martin Corbin is an important element of the plaza space that reflects Marion's history and diverse community. The artwork comprises of three seperate pavement inlays across the site in circular formation.

One of the artworks, previously located at the base of one of the Corymbia trees within the plaza was removed in 2019 due to severe tree root lifting of the pavers. It is currently being stored by the City of Marion and is to be reinstated as part of the redevelopment. The other artoworks will be carefully removed from their current locations and reinstated as part of the project works.

Interpretive signage will also be installed adjacent the artwork highlighting the importance of the works, as per below.

Interpretive signage to the artwork

1 Well 1: Warracowie Artwork

2 Well 2: Previously removed and in storage

3 Well 3: Kaurna Acknowledgement


Existing Locations


Proposed Locations

# 07

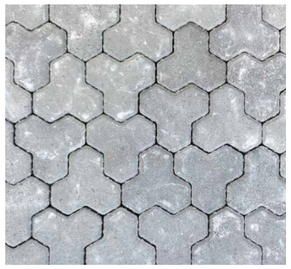
# Materials & Furniture.

The approach to materiality within the space will utilise a minimal palette that is consistent with the existing building facade and surrounding streetscape works recently completed. This will create a consistent backdrop of bronze hues which celebrate the building as well as allowing the colourful public art and wayfinding to feature within the space.

Exposed aggregate concrete (pedestrian)

Exposed aggregate concrete (roadway)

Brick Paving



Interlocking Roadway Paving

Existing Slate Paving

Hardwood timber decking

Steel shelter

Multifunction poles

Catenary lighting

Steel arbours

Picnic setting

Lookout table

Bench seating

GRC single seats/ bollards

Fixed Cafe Tables

Accessible drink fountain

Bike Racks

Bin enclosure

Wayfinding Signage

Digital Kiosk

Retractable bollard

# 08

# Environmental Improvements - Climate Resilient Design.

A number of measures to increase environmental comfort and sustainability benefits for the community have been considered and integrated into the Plaza design including:

- Use of recycled materials where possible
- Use of light coloured, reflective surfaces and paving where practical
- Increase of permeable surfaces such as garden bed and lawn
- Increase tree canopy coverage
- Improved growing conditions for trees through inclusion of stratacells and structural soils
- Water Sensitive Urban Design (WSUD) features such as rain gardens for stormwater treatment and detention
- Passive irrigation of trees
- Misting sprays to arbour structure
- Wider footpaths for pedestrian comfort
- LED lighting

LIDAR heat mapping undertaken as part of the Resilient South partnership in 2016 and subsequent mapping of tree canopy coverage and permeable vs impermeable surfaces in 2018/19 show that the Plaza space is subject to high surface temperatures and low tree canopy coverage (see map far right).

A summary of research on the measured effectiveness of various cooling strategies is provided in the table to the right. To mitigate the urban heat island effect and reduce the overall surface temperature within the space a number of these strategies have been integrated into the design (highlighted in yellow), improving user comfort and allowing people to stay in the space for longer.

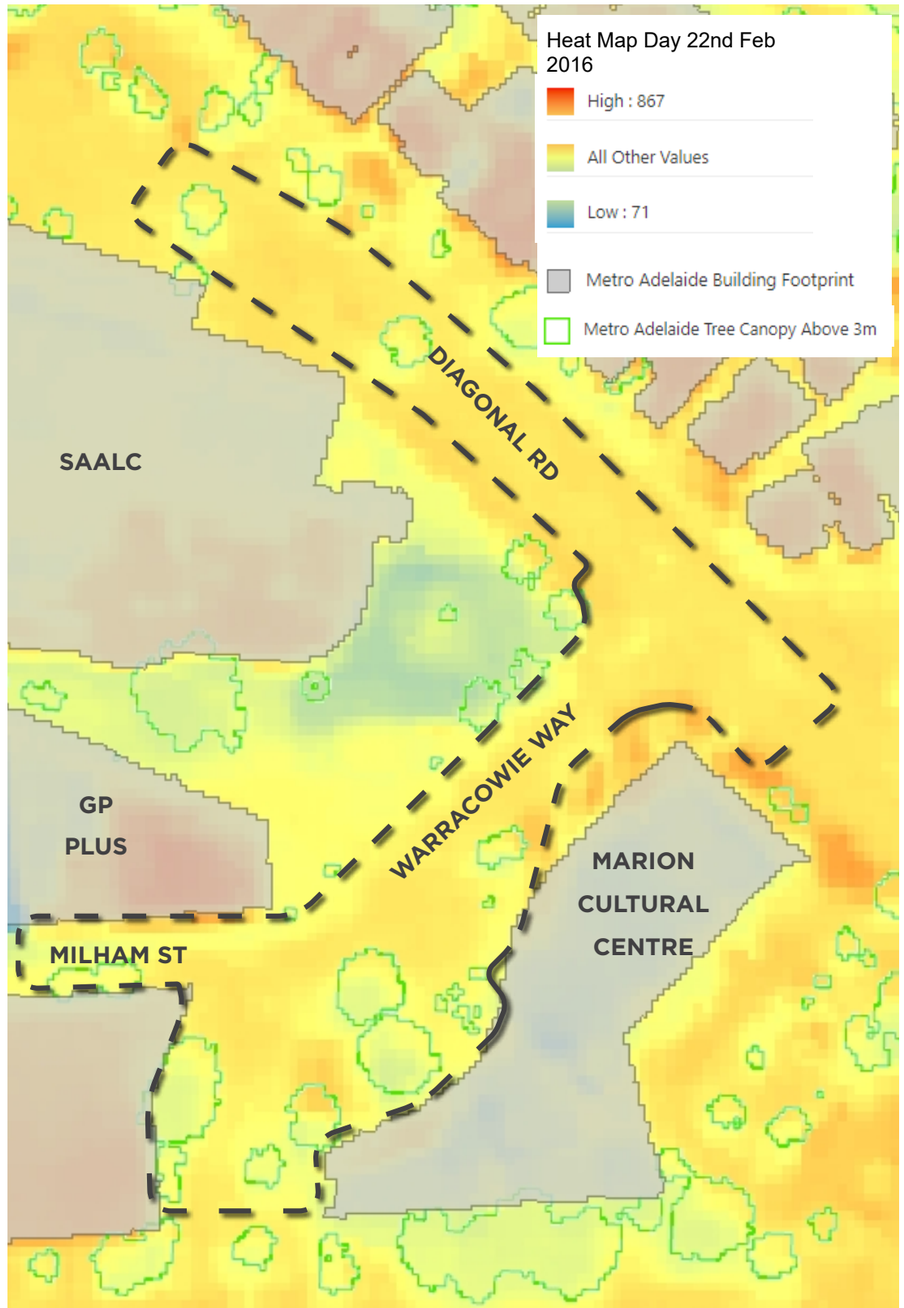
Expected increases to the tree canopy coverage and permeable surfaces as part of the upgrade have been calculated based on the existing conditions within the plaza space:

**237% increase in mature tree canopy coverage**

**138% increase in permeable surfaces**

| Heat mitigation strategy | Maximum air temperature reduction within the zone of influence[a] | Thermal comfort improvement (Feels-like temperature)[b] | Maximum surface temperature reduction[c] | Key constraints |
|---|---|---|---|---|
| Mature street trees | 4.0 °C | 8.0 °C | 15 °C | Space/conflict with grey infrastructure |
| Solar control systems (shading) | 0.8 °C | 8.0 °C | 15 °C | Installation cost |
| Cool pavements | 2.5 °C | 0.5 °C | 33 °C | Reflectance changes over time<br>Undesirable glare |
| Permeable pavements | 2.0 °C | 2 °C (after sprinkling with water) | 20 °C | Less suitable for heavy traffic<br>Evaporation is less effective in humid weather and only effective when there is moisture present<br>Maintenance |
| Cool roofs / walls and facades | 2.5 °C (indoors) | 0.5 °C | 33 °C | Undesirable glare<br>Complex reflectance in street canyon |
| Green roofs and walls | 4.0 °C | 0.1 °C | 20 °C | High cost to install and maintain<br>Water supply for walls<br>Heat- and water- stress |
| Green open spaces | 4.0 °C | 4.0 °C | 15 °C | Need to accommodate multiple needs |
| Evaporative cooling[d] | 8.0 °C | 1.0 °C | N/A | High cost to install and maintain<br>Water supply required<br>Less effective in humid weather<br>Small zone of influence |
| Misting fans[e] | 15 °C | 1.0 °C | N/A | |
| Effectiveness[f] | Very high | High | Medium | Low | Negligible |

*Cooling capacity of different strategies (updated based on Osmond & Sharifi 2017), Urban Heat Planning Toolkit, Western Sydney Regional Organisation of Councils (WSROC), 2021*




*Urban Heat and Tree Mapping 2016-2019, Enviro Data SA*

# 09

# Planting.

The tree and understorey planting within the Plaza will assist with wayfinding and strengthening the identity of different areas by responding to the space's narrative and purpose.

**Diagonal Road**

**Yellow Box**
*Eucalyptus melliodora*

**Coastal Rosemary**
*Westringia fruticosa 'Smokey'*

**Coastal Rosemary**
*Westringia fruticosa 'Mundi'*

**Prostrate Rosemary**
*Rosmarinus officinalis 'Prostratus'*

**Flax Lily**
*Dianella caerulea 'Little Jess'*

**Mat Rush**
*Lomandra longifolia 'Tanika'*

**Emu Bush**
*Eremophila glabra 'Amber Carpet'*

## Warracowie Way

**Claret Ash**
*Fraxinus oxycarpa 'Raywoodii'*

**Indian Hawthorn**
*Raphiolepis indica 'Snow Maiden'*

**White Goodenia**
*Goodenia albiflora*

**Mirror Bush**
*Coprosma repens 'Chameleon'*

**Fan Flower**
*Scaevola aemula 'Mauve Clusters'*

**Coastal Rosemary**
*Westringia fruticosa 'Smokey'*

**Coastal Rosemary**
*Westringia fruticosa 'Mundi'*

**Flax Lily**
*Dianella caerulea 'Little Jess'*

**Mat Rush**
*Lomandra longifolia 'Tanika'*

## Central Activity & Gathering

**Coastal Rosemary**
*Westringia fruticosa 'Smokey'*

**White Goodenia**
*Goodenia albiflora*

**One-Sided Bottlebrush**
*Calothamnus quadrifidus*

**Emu Bush**
*Eremophila glabra 'Amber Carpet'*

**Indian Hawthorn**
*Raphiolepis indica 'Snow Maiden'*

**Flax Lily**
*Dianella caerulea 'Little Jess'*

**Conebush**
*Leucodendron salignum 'Fire Glow'*

**Yellow Buttons**
*Chrysocephalum apiculatum*

**Rosemary**
*Rosmarinus officinalis 'Blue Lagoon'*

**Snake Vine**
*Hibbertia scandens*

**Ornamental Grape**
*Vitis vinifera*

## Biodoversity & Rain Garden

**Water Gum**
*Tristaniopsis laurina 'Luscious'*

**Flame Bottletree**
*Brachychiton acerifolius*

**White Goodenia**
*Goodenia albiflora*

**Tussock Grass**
*Poa labillardieri 'Eskdale'*

**Native Pigface**
*Carpobrotus rossii*

**One-Sided Bottlebrush**
*Calothamnus quadrifidus*

**Grevillea**
*Grevillea hybrid 'Bronze Rambler'*

**Yellow Buttons**
*Chrysocephalum apiculatum*

**Geraldton Wax Flower**
*Chamelaucium floriferum 'Little Lorey'*

**Mat Rush**
*Lomandra longifolia 'Katrinus Deluxe'*

**Pale Rush**
*Juncus pallidus*

**Spiny Flat-Sedge**
*Cyperus gymnocaulos*

**Coastal Flax Lily**
*Dianella brevicaullis*

**Knobby Club Rush**
*Ficinia nodosa*

# 10

# Events & Access.

### Events Setup

The proposed event setup is consistent with the previously developed landscape masterplan. The space can be configured for small, medium or large events as required, with general power outlets integrated throughout the space.

Three phase power outlets have also been nominated to the south plaza and on Warracowie way to facilitate food trucks and stalls. An external distribution board has been nominated to allow for ease of access during events. The stage area will facilitate audio and lighting setup as required with control via the distribution board. The stage's central location allows for use across all scales of events tailored to the specific requirements.

Below provides a summary of key provisions for events based on the scale. Crowd numbers have been based on post-COVID numbers of 1 person per 2m².

**Small Events**

- Approx 1220m²
- Approx capacity: 610 people
- Approx. 9 - 12 x market stalls (based on 3x3m)
- Catenary lighting
- No road closure required
- Vehicle access setup from Warracowie Way via retractable bollards
- Stage area central to space
- Close to MCC entrance

**Medium Events**

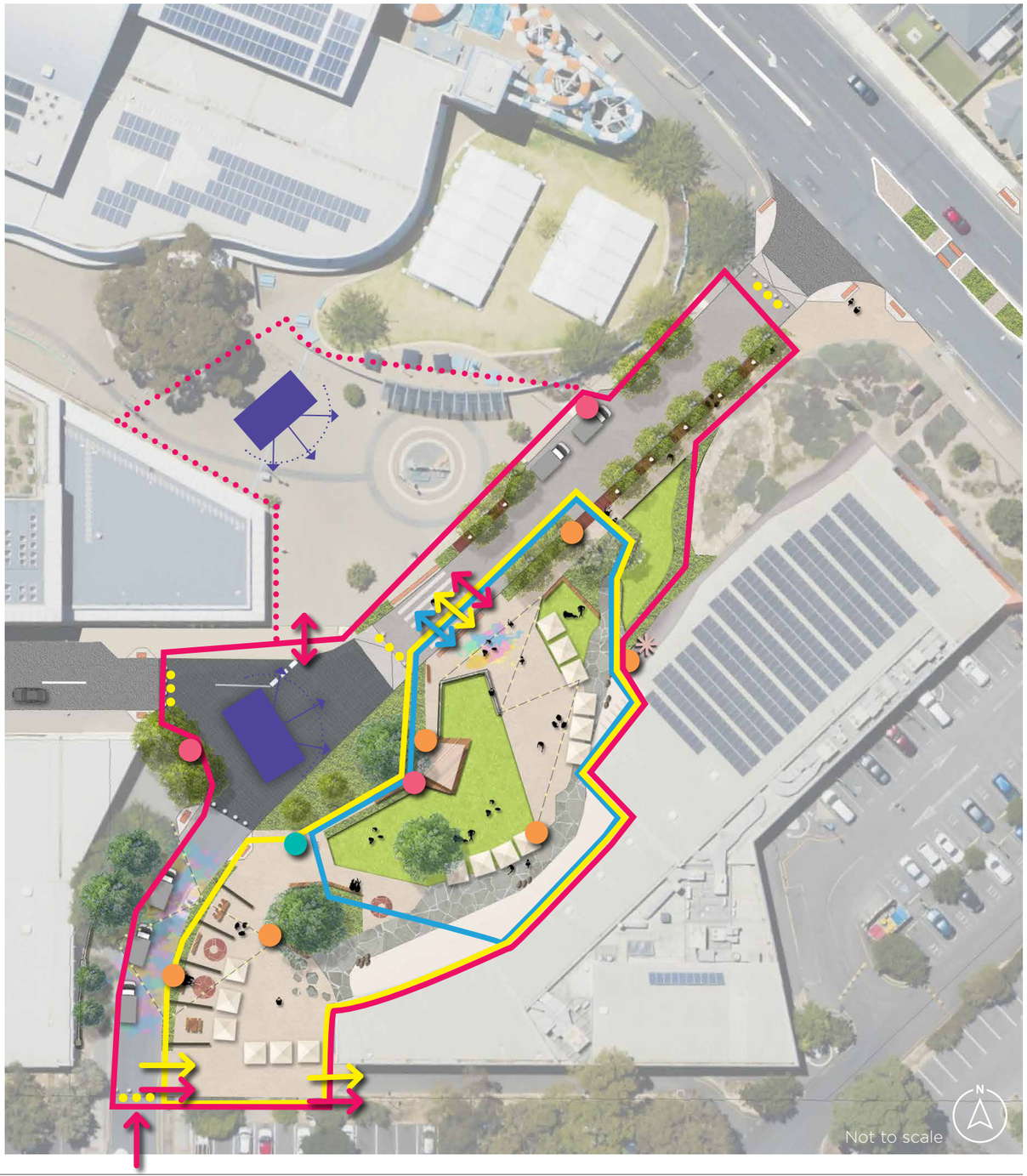
- Approx 2000m²
- Approx capacity: 1000 people
- Approx. 20-30 x market stalls (based on 3x3m)
- Catenary lighting
- No road closure required
- Vehicle access setup from Warracowie Way via retractable bollards, and service delivery lane access

**Large Events**

- Approx 3225m² - 4470m²
- Approx capacity: 1600 - 2235 people
- Approx. 35+ market stalls (based on 3x3m)
- Road closure required to Warracowie Way via bollards in road
- Multiple vehicle access points for event setup
- Central stage area and cafe/food
- Opportunity for bump in stage and additional market stalls
- Northern bump in stage option subject to ORSR approvals

**LEGEND**

- Small Event
- Medium Event
- Large Event
- Additional Large Event space subject to ORSR approvals
- Water Connection Point
- GPO (power provision)
- Three phase power outlets
- External distribution board & isolation
- Retractable bollards
- Options for large event additional bump in stage
- Food truck parking (large events along road once closed)
- Market Stall (3x3m)/possible food truck

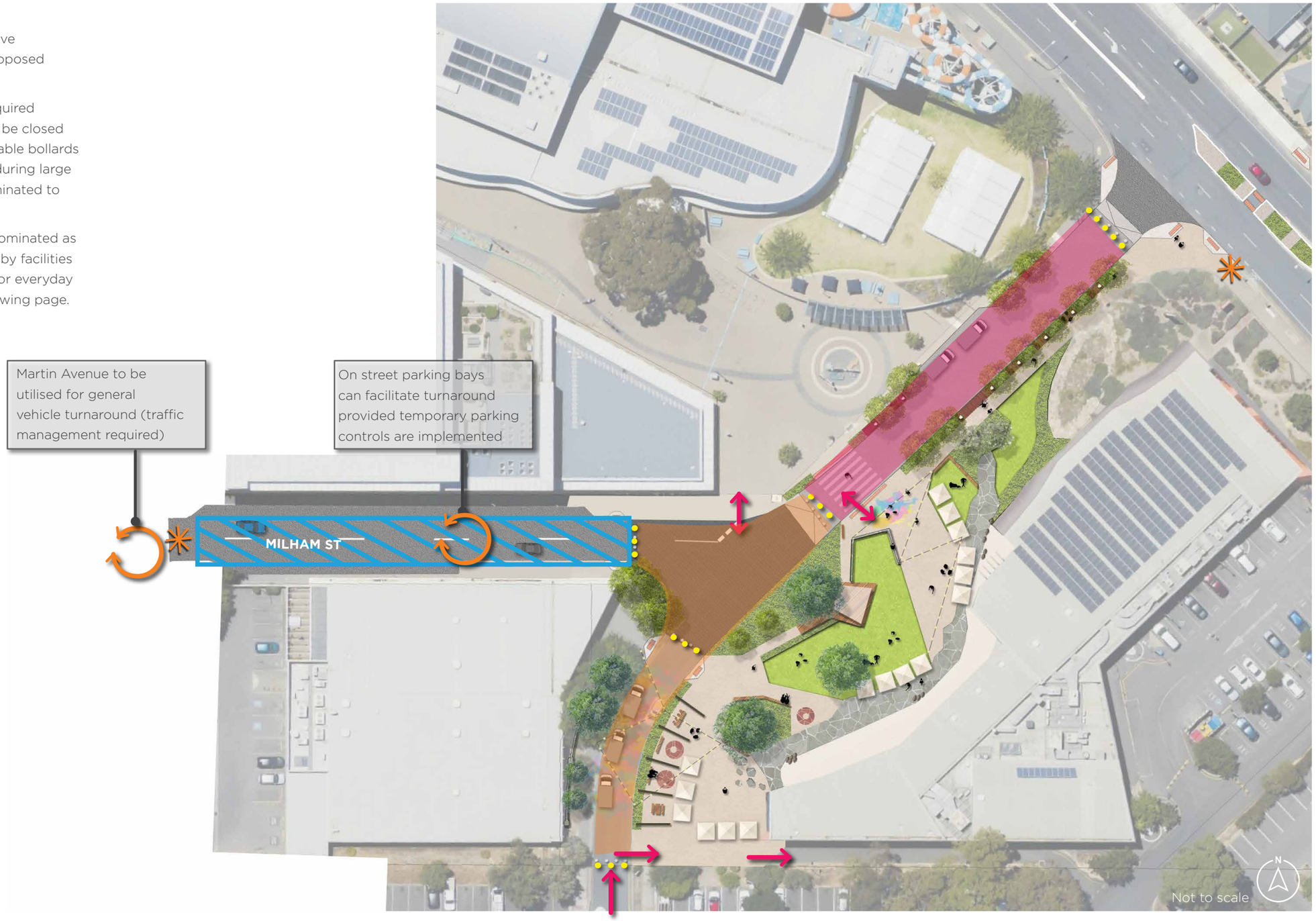


## Event Traffic Management

Traffic management and access during events have been considered in relation to the design and proposed operations.

It is assumed that traffic management will be required during large events where Warracowie Way is to be closed to vehicular traffic. Infrastructure such as retractable bollards are nominated at key locations to be employed during large events. Vehicle turnaround around areas are nominated to facilitate emergency vehicle access.

Vehicular access points during event setup are nominated as controlled access points and are to be managed by facilities staff during these times. Service vehicle access for everyday operations of the centre are outlined on the following page.




- Retractable bollards
- Temporary road closure extent - large events
- Additional temporary road closure extent - major events
- Emergency access only during events
- Temporary signage during events
- Event setup vehicular access
- Vehicle turnaround space

## Controlled access plan

Multiple controlled access points will be integrated across the site to allow for everyday operations in and around the Plaza space. Emergency services access, delivery and loading access to MCC and SAALC have been considered including accommodation of appropriate vehicle size. The pavement design will allow for appropriate vehicular loading in these areas.

Other infrastructure and design elements within the space such as lighting, public art and tree locations will also consider requirements for restricted vehicular access.

Access will be controlled through a number of strategies including retractable bollards operated by pin number pad and temporary and permanent signage.

Vehicular access and traffic management during events is outlined on the previous page.


**LEGEND**

- Loaded pavement
- controlled access point for SAALC events and emergency services
- controlled access point for service delivery to back of MCC events and maintenance
- controlled access point for event setup, emergency services and maintenance

# Thank you.