

Traffic Impact Statement

Hands Memorial Oval, South Bunbury

CW1200347/304701039



Prepared for
Perkins (WA) Pty Ltd

6 October 2022



now



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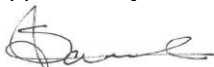
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1 Introduction

1.1 Background

Cardno now Stantec was commissioned by Perkins (WA) Pty Ltd to prepare a Traffic Impact Statement (TIS) for the proposed redevelopment of the J.E. Hands Memorial Park, South Bunbury ('the Site').

This TIS has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)* and the checklist is included in **Appendix A**.

This report aims to focus on traffic access, circulation, parking, and traffic safety of the proposed development. Discussions regarding pedestrian, cycle and public transport considerations are also provided.

2 Existing Situation

2.1 Existing Site Context

The Site comprises of 44 lots and is currently used as an oval (Hands Oval), bounded by Clarke Street to the north, Blair Street to the east, Halsey Street to the south and Spencer Street to the west, within the municipality of the City of Bunbury. The site is surrounded by established residential developments in all directions.

The location of the Site and relevant lot boundaries is shown in **Figure 2-1**.

Figure 2-1 Site Location

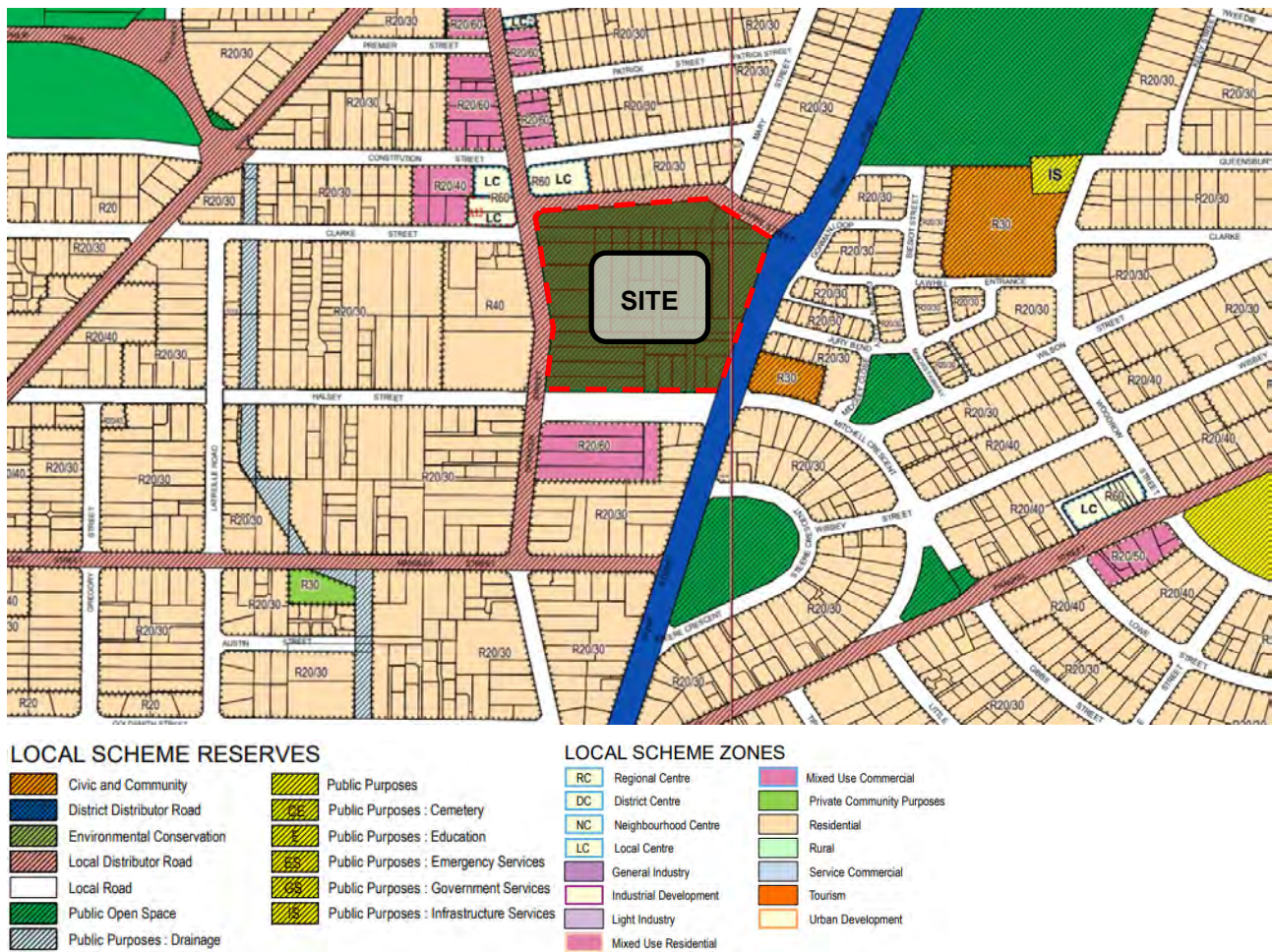


Source: Taylor Burrell Barnett

2.2 Surrounding Land Use

The Site is zoned as 'Public Open Space' under the *City of Bunbury Local Planning Scheme No.8* as shown in **Figure 2-2**.

Figure 2-2 Zoning Map



Source: *City of Bunbury LPS No. 8 – Withers & Carey Park Locality Map*

2.3 Existing Road Network

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

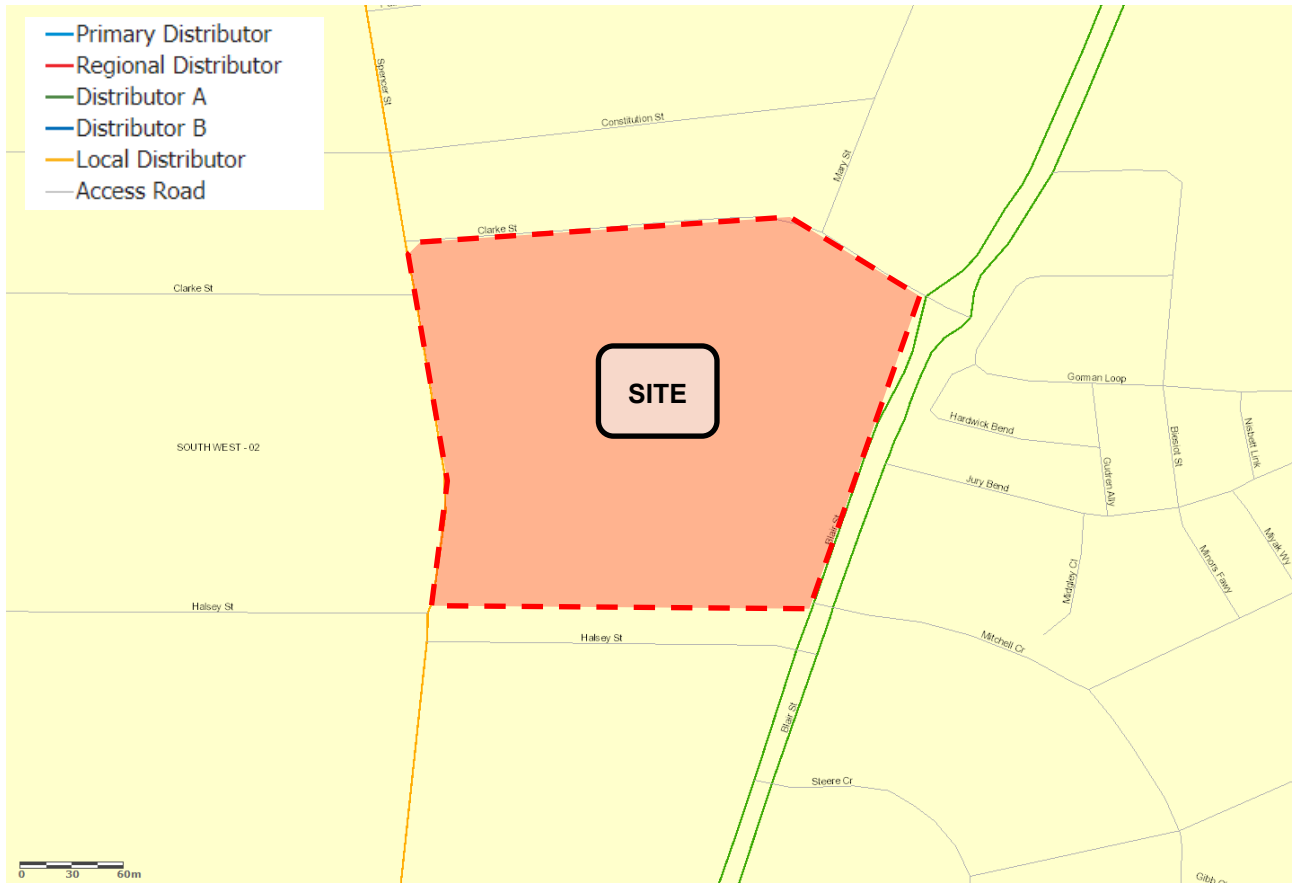
- > **Primary Distributors (light blue):** Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes and all are National or State roads. They are managed by Main Roads.
- > **Regional Distributors (red):** Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.
- > **District Distributor A (green):** These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.
- > **District Distributor B (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- > **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local government.
- > **Access Roads (grey):** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local government.

The surrounding road network to the subject site is described in **Table 2-1** and **Figure 2-3** shows the road hierarchy as per the *Main Roads Road Information Mapping System*.

Table 2-1 Road Network Classification

| Street Names | Road Hierarchy | | | Road Network | | |
|----------------|-------------------|--------------|--------------|------------------|--|---------------------|
| | Road Hierarchy | Jurisdiction | No. of Lanes | No. of Footpaths | Width | Posted Speed (km/h) |
| Clarke Street | Access Road | Local Govt. | 2 | 1 | 8.2m | 50 |
| Blair Street | Distributor A | Local Govt. | 2 (x2) | 2 | 7.3m (x2) | 60 |
| Halsey Street | Access Road | Local Govt. | 2 | 0 | 8.5m | 50 |
| Spencer Street | Local Distributor | Local Govt. | 2 | 1 | 9.0m (including 1m shoulder on both sides) | 50 |

Figure 2-3 Road Hierarchy Map



Source: MRWA Road Information Mapping System

2.4 Existing Intersections

- > **Clarke Street and Blair Street Intersection** is located to the northeast of the Site. It is a 3-way roundabout as shown in **Figure 2-4**.

Figure 2-4 Clarke Street and Blair Street Intersection



Source: Metromap

- > **Blair Street and Halsey Street Intersection** is located to the southeast of the Site. It is a 4-way staggered intersection with Mitchell Crescent and Blair Street intersection, with the priority given to Blair Street as shown in **Figure 2-5**.

Figure 2-5 Blair Street and Halsey Street Intersection



Source: Metromap

- > **Spencer Street and Halsey Street Intersection** is located to the southwest of the Site. It is a 4-way staggered intersection with priority given to the Spencer Street as shown in **Figure 2-6**.

Figure 2-6 Blair Street and Halsey Street Intersection



- > **Spencer Street and Clarke Street Intersection** is located to the northwest of the Site. It is a 4-way staggered intersection with priority given to Spencer Street as shown in **Figure 2-6**.

Figure 2-7 Spencer Street and Clarke Street Intersection



2.5 Existing Traffic Volumes

The most recent traffic volumes for the roads in the vicinity of the Site were obtained from Main Roads Traffic Map and are summarised in **Table 2-2**.

Table 2-2 Traffic Volumes

| Road Name | Source | Year | Average Daily Traffic Volume | AM Peak Hour (two-way) | PM Peak Hour (two-way) | Heavy Vehicle % |
|--------------------------------------|-----------------|------|------------------------------|------------------------|------------------------|-----------------|
| Blair Street, north of Mangle Street | SCATS | 2022 | 15,329 | 1,433vph | 1,490vph | - |
| Clarke Street, west of Mary Street | City of Bunbury | 2017 | 3,766 | 317 | 334 | - |

2.6 Crash Assessment

A crash assessment for the surrounding road network of the site has been completed using the Main Roads WA Reporting centre. The assessment covers all the recorded accidents for the 5-year period between 1 January 2017 to 31 December 2021 for the following intersections and sections of road.

- > Clarke Street, between Spencer Street and Blair Street;
- > Blair Street, between Clarke Street and Halsey Street;
- > Halsey Street, between Spencer Street and Blair Street; and
- > Spencer Street, between Clarke Street and Halsey Street.

Table 2-3 and Table 2-4 summarise the total number of crashes occurred in the vicinity of the Site and **Table 2-4** shows the location, severity and type of the crashes (RUM).

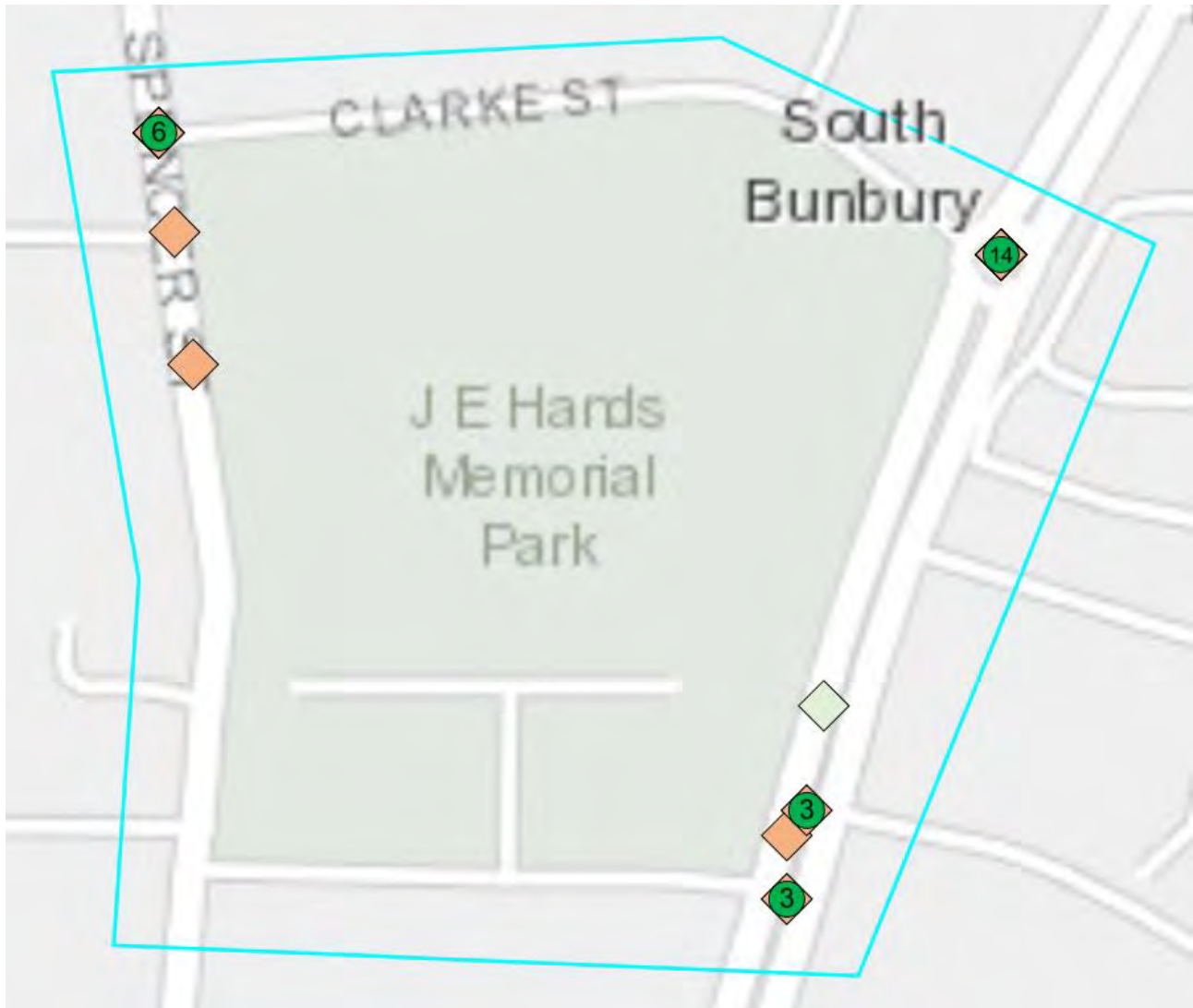
Table 2-3 Blair Street crashes (including midblock and intersection crashes)

| TOTAL CRASHES | | | | | | |
|--------------------------|-------|----------|---------|-----------------------|-----------------------|---------------|
| Type of Crash (RUM Code) | Fatal | Hospital | Medical | Major Property Damage | Minor Property Damage | Total Crashes |
| Right Angle | | | 1 | 3 | 2 | 6 |
| Sideswipe Same Direction | | | | 2 | 1 | 3 |
| Rear End | | | 1 | 4 | 3 | 8 |
| Right Turn Thru | | | 1 | 1 | 1 | 3 |
| Head On | | | | 1 | | 1 |
| Non-Collision | | | | | 1 | 1 |
| Total | - | - | 3 | 11 | 8 | 22 |

Table 2-4 Spencer Street crashes (including midblock and intersection crashes)

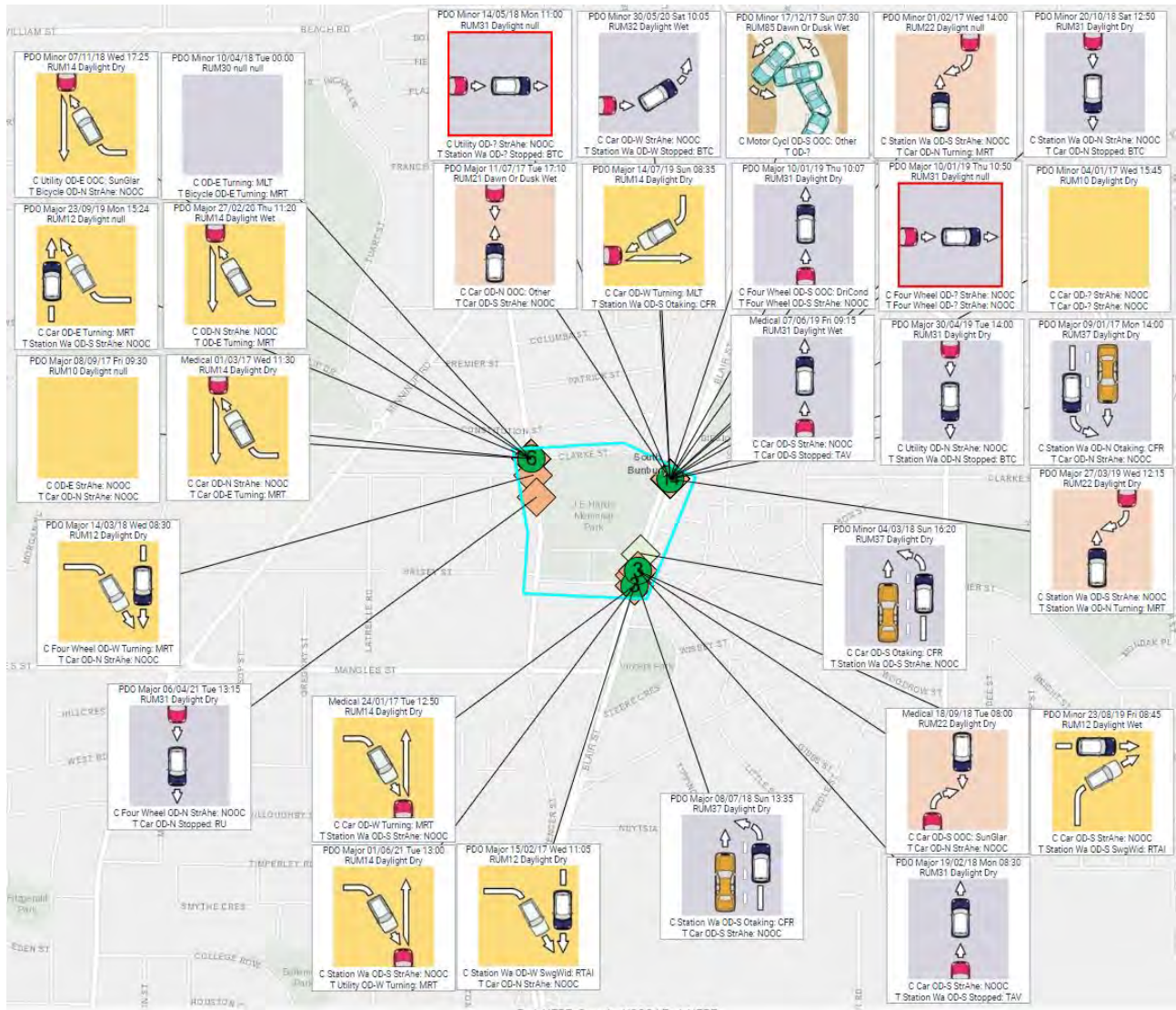
| TOTAL CRASHES | | | | | | |
|--------------------------|-------|----------|---------|-----------------------|-----------------------|---------------|
| Type of Crash (RUM Code) | Fatal | Hospital | Medical | Major Property Damage | Minor Property Damage | Total Crashes |
| Right Angle | - | - | 1 | 4 | 1 | 6 |
| Rear End | - | - | - | 1 | - | 1 |
| Others | | | | | 1 | 1 |
| Total | - | - | 1 | 5 | 2 | 8 |

Figure 2-8 Crash Locations



| Severity | No. | % |
|-----------|-----|-------|
| Fatal | 0 | 0 |
| Hospital | 0 | 0 |
| Medical | 4 | 13.33 |
| PDO Major | 16 | 53.33 |
| PDO Minor | 10 | 33.33 |

Figure 2-9 Crash details (RUM)



Source: MRWA Crash Map

From the crash assessment conducted above, the following is concluded:

- > A total of 30 crashes was recorded on the surrounding road network in close proximity to the Site;
- > All crashes occurred along Blair Street (Distributor A) and Spencer Street (Local Distributor);
- > 7 crashes were recorded at the intersection of Blair Street and Halsey Street, with two of the crashes requiring medical attention. (Right Angle and Right Turn Thru). This may suggest that the geometry of the intersection could be unsafe.
- > The majority of the crashes (14) occurred at Blair Street and Clarke Street roundabout, including one crash (Rear-end) which required medical attention.
- > No fatality or hospital crashes were recorded in the vicinity of the Site.

The risk of crashes, particularly at the intersections in the vicinity of the Site may increase slightly due to the increased traffic generation. However, due to the relatively slow speed environment (60km/h), the severity of the crashes is unlikely to worsen. Road safety inspections could be conducted for the surrounding intersections, particularly the staggered intersection of Blair Street and Halsey Street to examine the existing road geometry and existing inherent crash risks.

3 Public Transport Facilities

3.1 Existing Public Transport Facilities

The Site is currently serviced by Bus Route 829 and 832 with the nearest bus stops bounded to the east and west of the Site. These bus routes are connected to Bunbury Bus Station, providing a greater connection within Bunbury. The bus routes and public transport facilities in relation to the site location are shown in **Figure 3-1**.

Due to the close proximity of the bus stops, it is likely that a proportion of the visitors will use public buses when travelling to and from the Site, depending on access to buses from the point of origin.

Figure 3-1 Existing public transport facilities and bus routes



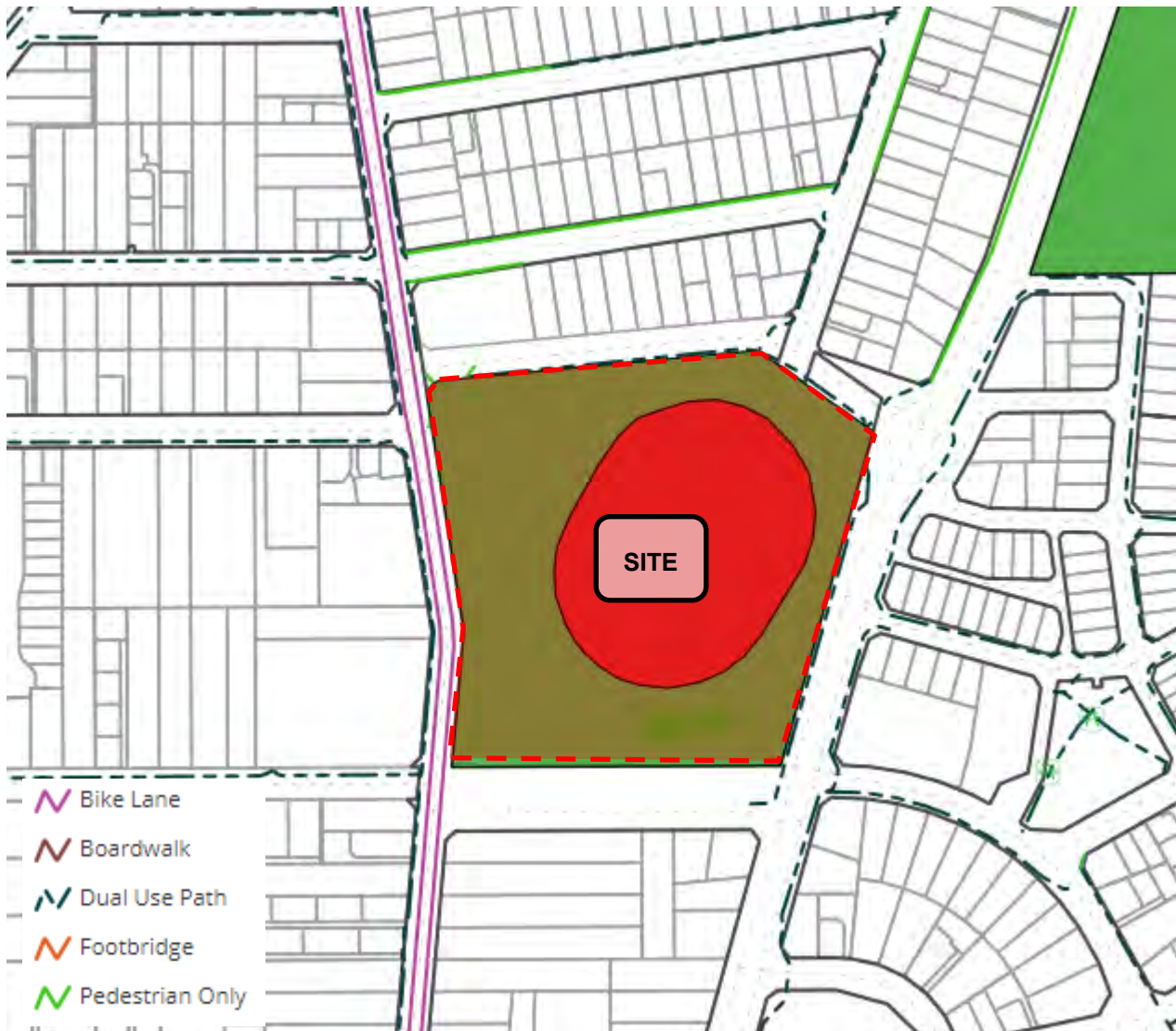
Source: Trans Bunbury

4 Pedestrian and Cycling Network

4.1 Existing Pedestrian/Cycle Network Facilities

According to *City of Bunbury Intramap*, Spencer Street is provided with bicycle lanes on both sides of the road. Additionally, footpaths are available along the roads in the surrounding of the Site. This includes dual use paths along Spencer Street, Clarke Street and Blair Street. The existing pedestrian and cycling network in the vicinity of the Site is shown in **Figure 4-1**.

Figure 4-1 Existing Pedestrian/Cycling Facilities



Source: *City of Bunbury Intramap*

4.2 Future Pedestrian/Cycle Network Facilities

4.2.1 Bunbury-Wellington 2050 Cycling Strategy

The aim of this strategy is to create a safe, direct, comfortable and integrated cycling network. The proposed network, which connects people to activity centres and key attractions, has been developed to facilitate cycling for transport, recreation and tourism purposes. Future cycling network for the area indicates that both Norton Promenade and Parade Road have been designated as Secondary Bicycle Routes in the City's 2050 Cycling Strategy. **Figure 4-2** provides an overview of the proposed 2050 cycling network in the vicinity of the Site.

Figure 4-2 Bunbury – Wellington 2050 Cycling Strategy



Source: Bunbury Wellington 2050 Cycling Strategy

4.2.2 Proposal to improve pedestrian access

There is currently no footpath provision along the southern (Halsey Street) and western boundary (Spencer Street) of the Site, resulting in no direct footpath connection to the bus stop located on Spencer Street. As part of this assessment, it is suggested that a footpath connection be provided along Halsey Street and Spencer Street to connect to the paths on Blair Street and Clarke Street, to provide direct pedestrian access between the bus stop and the Oval.

Additionally, the pedestrian crossing facilities and footpath alignment near the main pedestrian access to the Site (northwest corner), particularly at the intersection of Spencer Street and Clarke Street requires upgrading. The pedestrian crossings over Clarke Street should be modified to align perpendicularly to Clarke Street, with the installation of a pedestrian refuge island within the Clarke Street intersection. This will help to improve the overall pedestrian safety and allow pedestrians to cross the road with reduced risk.

5 Development Proposal

5.1 Proposed Development

The redevelopment proposal

- > Oval (Existing)
- > Oval pavilion (building)
- > Formalised car parking bays

The Overall Site plan of the proposed redevelopment is shown in **Figure 5-1**.

Figure 5-1 Overall Site Plan



Source: Cameron Chisholm Nicol

Figure 5-2 Partial Site Plan – DA Scope



5.2 Access Arrangements

The existing north (A) and south (B) accesses of the Site will be retained with minor adjustments to the location and geometry. Both accesses are expected to allow for full movement access in and out of the Site. The access locations are illustrated in **Figure 5-3**.

Figure 5-3 Access Locations



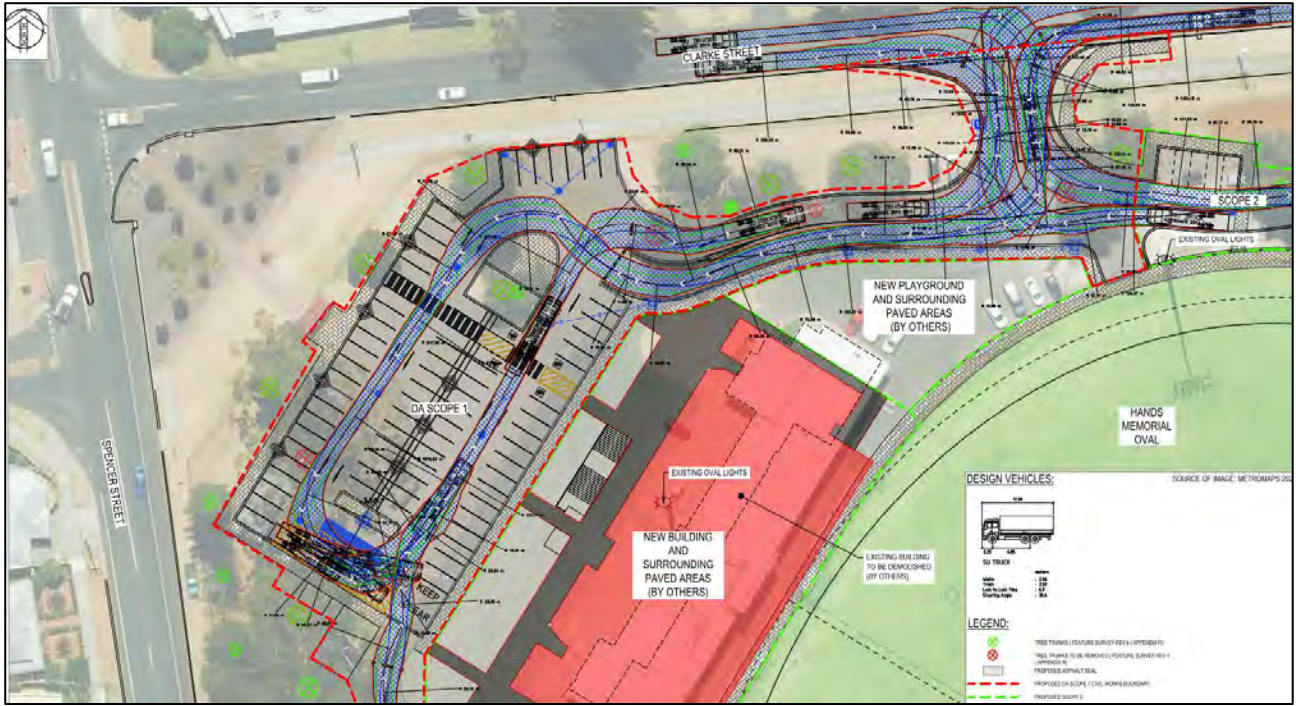
Source: Cameron Chisholm Nicol

5.3 Provision for Service Vehicles

On collection days, the waste truck is expected to enter the subject Site from Clarke Street in forward gear, park in the loading zone, service the Site and exit in forward gear.

A swept path assessment showing the potential service swept path route is shown in **Figure 5-4**.

Figure 5-4 Loading Area Swept Path



5.4 Car Parking Requirements and Provision

The *City of Bunbury Local Planning Scheme No.8* has not formally set out the parking requirements guidelines for an Oval or sports centre development. Therefore, as part of the assessment, the minimum car parking requirements of similar land uses such as Civic Centre and Club premises has been adopted.

The statutory car parking demand calculated based is summarised in **Table 5-1**:

Table 5-1 Statutory Car Parking Demand

| Land Use | Estimated patrons / staff | Parking requirements | Total Demand |
|-------------------------------|--|--|-----------------|
| Oval (Field) | 112 persons (including players and umpires for two matches) | 0.5 bays per person* | 46 bays |
| Oval (Pavilion staff / admin) | Up to 10 persons at any one time | 1 bay per staff** | 10 bays |
| Oval (visitors / spectators) | Up to 1500 spectators (including those using existing and new seats) | 0.25 bay per seats / person ⁺ | 375 bays |
| Total Parking Demand | | | 431 bays |

*Assuming vehicle occupancy of 2 persons per car

** Using similar car parking requirements for development with employee's requirement (LPS No.8)

+ Using similar car parking requirements for public premises (LPS No.8)

As shown in **Table 5-1**, the statutory car parking demand calculated based on the estimated spectator attendance is 431 bays. The calculation is based on the overlapping of two matches (4 teams + 12 umpires) and a full spectator capacity of 1500 people.

On regular weeks and weekends, the number of expect patrons on Site is expected to be fluctuate where numbers may be lower than this estimate. However, it is noted that big events such as regional football finals would often attract larger crowds, resulting in a total parking demand higher than the calculated parking demand.

Cardno now Stantec conducted a Site visit on 17th September 2022 (SW Junior Football League Grand Final) and noted approximately 320 vehicles parked formally and informally within the Site and 72 vehicles parked within the southern verge area. Based on the information provided by previous surveys, a Junior football league grand final is expected to attract approximately 1,200 to 1,500 crowds at peak period. This would suggest that the parking demand of 1 car per 4 persons is a reasonable estimate as the observed car parking demand was consistent with the calculated statutory car parking demand, noting that many spectators were not using the formal seating and instead using their vehicles and ute trays.

It is noted that the Grand Final for senior SW Football League would attract much greater crowds up to 5,000 persons during the peak period. By using the similar parking demand calculation, this will result in a car parking requirement of **1,250 parking bays**.

The proposed redevelopment of the Site is proposed to provide 76 formal parking bays and approximately 70 informal parking bays directly adjacent to the ring road around the oval and up to 350 - 435 informal parking spaces within the various grassed areas outside of the ring road around the oval. Informal parking on the verge north of Halsey Street could potentially house up to an additional 120 vehicles with only minor marshalling of overflow / verge parking required.

However, traffic marshalling would need to be implemented for any major sport events with the expected car parking demand greater than 500 vehicles to manage the overflow parking on verge and grassed areas to maximise a greater car parking layout efficiency / capacity on Site (to achieve the 435 bay capacity).

Based on the observations, the proposed Site layout is estimated to have a total parking capacity (formal + informal + overflow) of approximately 700 vehicles, which is not sufficient to cater the worst-case scenario (1,250 car parking demand).

As such, it is proposed that event management, which includes parking and traffic management, be submitted prior to those events to ensure alternative off-site car parks locations (Forrest Park / schools in the vicinity of the Site) are available should the Site be insufficient to cater for the parking demand.

A summary of projected car parking demand for different events on Site is shown in **Table 5-2**.

Table 5-2 Projected car parking demand

| Event | Projected Car Parking Demand | Remarks |
|----------------------------|------------------------------|--|
| Regular sport events | <250 bays | No overflow parking required |
| Major events | >300 bays, <700 bays | Marshalling of overflow parking required on site |
| Grand Finals / Large event | >700 bays | Off-site car parking management and on-site marshalling of overflow parking required |

5.5 Bicycle Parking

The *City of Bunbury Local Planning Scheme No.8* does not set out any bicycle parking requirements. However, it is suggested that up to 15 bicycle racks (U-rails) could be provided at various locations within the Site to encourage cycling and the use of active transport.

6 Traffic Generation

6.1 Existing Traffic Generation

The City of Bunbury has provided traffic count data for the existing northern and southern accesses. It is noted that due to low travel speed, a large proportion of the vehicle counts were not detected by the counter. Using the raw data count (EC0) files, Cardno now Stantec translated the event counts from the individual counter tubes and derived the following traffic volume estimation as shown in **Table 6-1**.

Table 6-1 Derived existing traffic generation of the Site (metrocount data – June 2021)

| Access | Weekday PM Peak | Sat Peak (Two-way) (10:00-11:00am) | Sun Peak (Two-way) (5:00 – 6:00pm) |
|--------|---------------------|---------------------------------------|---------------------------------------|
| North | 82 trips (two-way) | 114 trips | 108 trips |
| South | 115 trips (two-way) | 128 trips | 152 trips |

6.2 Redevelopment Traffic Generation

Due to the nature of the development, the majority of vehicle trips are likely to be one-directional (vehicles entering and exiting the Site before and after the ground event), with a stayover period of more than 1 hour. For a robust assessment, the traffic generation of the site has been calculated with the projected car parking demand based on events, with the following assumptions:

- > All vehicles are expected to arrive and leave the Site in a two-hour period (70% during the peak hour);
- > A minimum overlap of 25% vehicles between games (the crowd overlap factor is likely to be higher should there be more games on the same day);
- > All vehicles will stay for more than 1 hour (majority of vehicles entering the Site are unlikely to exit within the same hour);

A summary of projected traffic generation of the redeveloped Site is shown in **Table 6-2**.

Table 6-2 Projected traffic generation

| Car Parking Demand (vehicles) | Projected Trip generation (trips) | | |
|-------------------------------|---|---|--|
| | 1-hour before the first game of the day | Between games (switching of players and crowds) | 1-hour after the last game of the day |
| 250 | 175 (165 inbound & 10 outbound) | 185 (93 inbound & 92 outbound) | 175 (10 inbound & 165 outbound) |
| 500 | 350 (330 inbound & 20 outbound) | 370 (185 inbound & 185 outbound) | 350 (20 inbound & 330 outbound) |
| 700 | 525 (500 inbound & 25 outbound) | 555 (273 inbound & 272 outbound) | 525 (25 inbound & 500 outbound) |

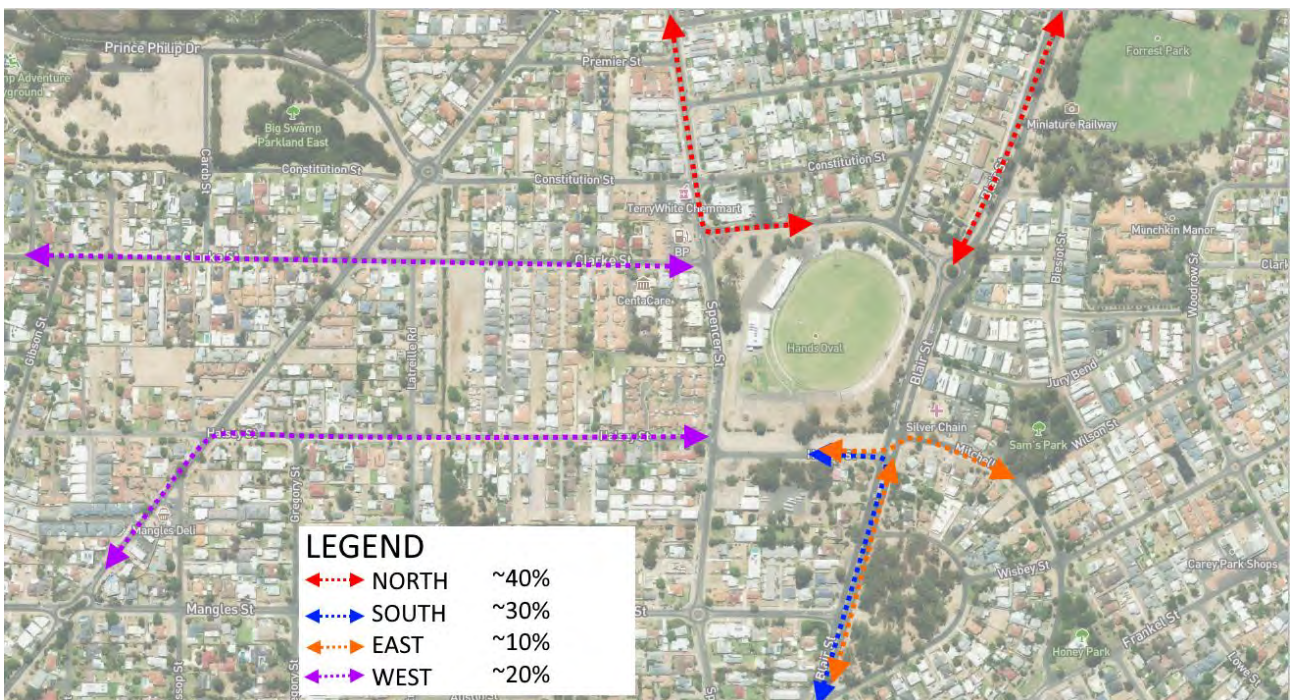
As shown, in line with the observation on Site by the inspection team during one of the major events (Junior Football GF – **car parking demand < 500 bays**) the Site is expected to generate approximately 370 two-way trips within an hour. This is translated to approximately 6 vehicles per minute, or 3 inbound or outbound vehicles (approx. 20 seconds per vehicles). When the Site is at full capacity (700 cars parked on site), the Site is expected to generate approximately 555 (two-way) trips in the infrequent worst-case scenario.

Due to improvement in facilities, the proposed redevelopment is likely to experience only a moderate increase in traffic generation during the regular week or events. However, the traffic generated during the major and large events will be limited by the number of available parking bays (formal / informal). Although the proposed redevelopment has doubled the formal parking capacity, the total parking capacity is likely to be similar to the existing Site. Hence, traffic generated by the redeveloped Site during major events is unlikely to be significantly different to the existing situation.

6.3 Traffic Distribution

The potential traffic distribution of the Site has been distributed based on the distribution of residential dwellings in Bunbury and nearby suburbs. A large proportion of the traffic is expected to access the Site via Blair Street (north/south/east) while residence to the west of the Site would potentially use Minninup Road into Clarke Street or Halsey Street, with some using Spencer Street. An illustration of the potential traffic distribution of traffic generated by the Site is shown in **Figure 6-1**.

Figure 6-1 Projected traffic Distribution



As suggested in **Section 6.2**, the traffic generation calculated with car parking demand is expected to be largely similar to the existing situation. However, the improved facilities and additional seats could result in an increase of drop-off / pick-up activities. For robust assessment, 10% additional traffic generated by the Site is assumed, on top of the projected worst-case scenario in **Table 6-2**. Using the projected traffic distribution, the expected distribution of the additional trips is illustrated in **Figure 6-2**.

Figure 6-2 Trip distribution of (10%) additional trips – Peak hour



7 Conclusions and Summary

The Traffic Impact Statement has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Assessment Guidelines for developments: Volume 4 – Individual Development*.

The following conclusions have been made for the proposed development:

- > The Site is surrounded by good pedestrian and cycling facilities including shared paths and bicycle lanes along Spencer Street
- > The Site also benefit from good public transport services, with two bus stops located along the west and east site boundaries, serviced by two bus routes.
- > Locations of the Site accesses are retained, with the southern crossover separated to improve traffic operation.
- > The proposal increases the formal parking provision, with improved car parking layout and pedestrian facilities within the car park. The peak car parking demand of the Site (during Grand Finals) is expected to remain consistent with the existing Site, due to no significant increase of sporting facilities, parking capacity or activity areas.
- > Off-site car parking and on-site marshalling for overflow parking could be implemented to improve the overall car parking experience during the peak car parking demand periods.
- > Due to the improvement in facilities, the proposed redevelopment is likely to experience only a slight increase in traffic generation during the regular week or events. The peak traffic generation of the Site during large and major events are expected to be largely similar to the existing situation.
- > The slight increase in traffic generation is expected to result in negligible impact to the surrounding road network.
- > Overall, the Site is expected to perform and have similar traffic impact as per existing situation.

APPENDIX

A

WAPC CHECKLIST



now



| Item | Status | Comments/Proposals |
|--|-----------|--------------------|
| Proposed development | | |
| proposed land use | Section 5 | |
| existing land uses | Section 1 | |
| context with surrounds | Section 1 | |
| Vehicular access and parking | | |
| access arrangements | Section 5 | |
| public, private, disabled parking set down / pick up | N/A | |
| Service vehicles (non-residential) | | |
| access arrangements | Section 5 | |
| on/off-site loading facilities | N/A | |
| Service vehicles (residential) | | |
| Rubbish collection and emergency vehicle access | Section 5 | |
| Hours of operation (non-residential only) | | |
| | N/A | |
| Traffic volumes | | |
| daily or peak traffic volumes | Section 2 | |
| type of vehicles (e.g. cars, trucks) | Section 2 | |
| Traffic management on frontage streets | | |
| | N/A | |
| Public transport access | | |
| nearest bus/train routes | Section 3 | |
| nearest bus stops/train stations | Section 3 | |
| pedestrian/cycle links to bus stops/train station | Section 3 | |
| Pedestrian access/facilities | | |
| existing pedestrian facilities within the development (if any) | Section 4 | |
| proposed pedestrian facilities within development | Section 4 | |
| existing pedestrian facilities on surrounding roads | Section 4 | |
| proposals to improve pedestrian access | N/A | |
| Cycle access/facilities | | |
| existing cycle facilities within the development (if any) | Section 4 | |
| proposed cycle facilities within the development | N/A | |
| existing cycle facilities on surrounding roads | Section 4 | |
| proposals to improve cycle access | Section 4 | |
| Site specific issues | | |
| | N/A | |
| Safety issues | | |
| identify issues | N/A | |
| remedial measures | N/A | |

APPENDIX

B

SITE PLANS



now



SITE MASTER PLAN

OVERALL SITE PLAN



NOTES:

- Existing trees shown to be retained are indicative only and subject to further detail assessment by the appointed arborist.
- Fire pump, tanks & hard stand are indicative only and subject to the results of the flow and pressure tests and DFES's review.

LEGEND

- EXISTING TREES
- PROPOSED TREES
- REMOVE TREES AS AGREED WITH COB
- EXISTING HABITAT TREES
- DA SCOPE OF WORKS
- VEHICULAR ENTRIES
- CARBAYS**
- NEW BAYS 70
- NEW ACROD: 6



DRAWING # DA05
 SHEET NAME MASTERPLAN

PHASE DA

ISSUE DATE 03/10/22

SITE MASTER PLAN

PARTIAL SITE PLAN



NOTES:
 1. Existing trees shown to be retained are indicative only and subject to further detail assessment by the appointed arborist.
 2. Fire pump, tanks & hard stand are indicative only and subject to the results of the flow and pressure tests and DFES's review.

- LEGEND**
- EXISTING TREES
 - PROPOSED TREES
 - REMOVE TREES AS AGREED WITH COB
 - EXISTING HABITAT TREES
 - FUTURE WORKS - SEPARATE DA
 - LINE OF EXISTING PAVILION TO DEMOLISH
 - FIRE BOOSTER
 - FIRE PUMPS
 - FIRE TANKS
 - FUTURE PLAYGROUND & SHADED STEPPED SEATING (SEPERATE DA)
 - AMBULANCE BAY - MODIFY EXISTING
 - DOUBLE GATE TO SUIT EXISTING LIGHT POLE RETAINED
 - EXISTING TOILET BLOCK TO BE DEMOLISHED
 - GREASE ARRESTOR
 - DFES / DELIVERY BAY
 - SUGAR GUM TREE TO BE REMOVED DUE TO RISK OF LIMB DROP AS PER COB ADVICE
 - EXISTING SOUTH BUNBURY FOOTBALL CLUB
 - INTERCHANGE BENCH



DRAWING # DA6
 SHEET NAME SITE PLAN
 PHASE DA
 ISSUE DATE 03/10/22



APPENDIX

C

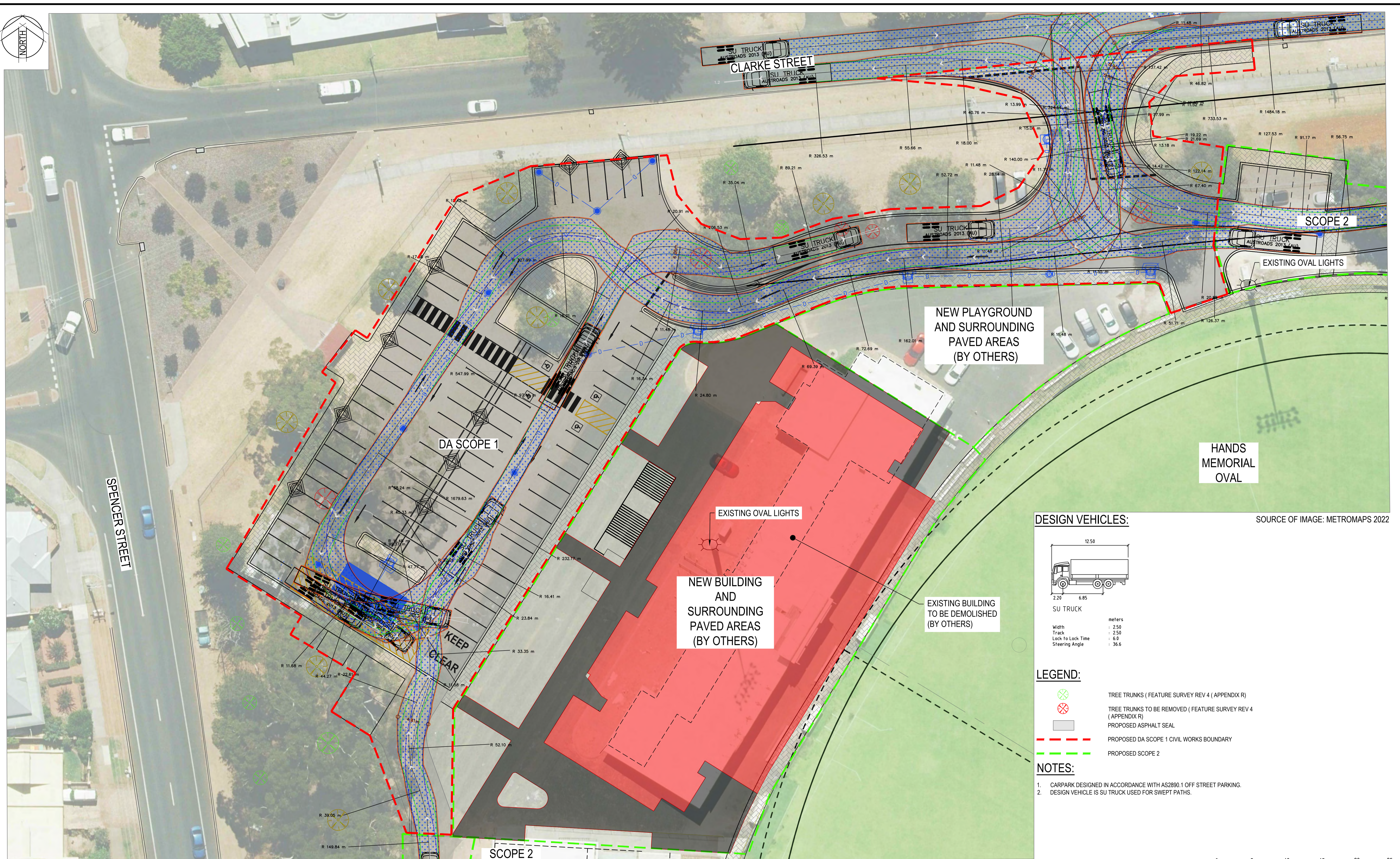
SWEPT PATH



now

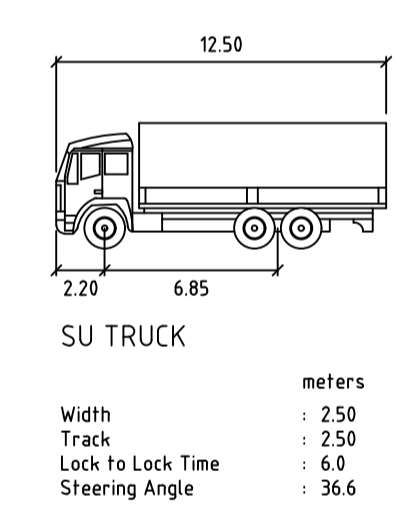


DATE PLOTTED: 5 October 2022 3:41 PM BY: PETER RODRIGUEZ



PLAN: 0 5 10 15 20 25m
SCALE 1:250 @A1

DESIGN VEHICLES:



SOURCE OF IMAGE: METROMAPS 2022

LEGEND:

- TREE TRUNKS (FEATURE SURVEY REV 4 (APPENDIX R)
- TREE TRUNKS TO BE REMOVED (FEATURE SURVEY REV 4 (APPENDIX R)
- PROPOSED ASPHALT SEAL
- PROPOSED DA SCOPE 1 CIVIL WORKS BOUNDARY
- PROPOSED SCOPE 2

NOTES:

1. CARPARK DESIGNED IN ACCORDANCE WITH AS2890.1 OFF STREET PARKING.
2. DESIGN VEHICLE IS SU TRUCK USED FOR SWEEP PATHS.

| Rev. | Date | Description | Des. | Verif. | Appd. |
|------|------------|--------------------------|------|--------|-------|
| B | 05.10.2022 | STAGE 1 SD/DA SUBMISSION | PR | SAB | CS |
| A | 04.10.2022 | STAGE 1 SD/DA SUBMISSION | PR | SAB | CS |

| | | | | | |
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| | | | |
|----------|-------------------|------|------------|
| Drawn | P.RODRIGUEZ | Date | 04.10.2022 |
| Checked | C.STEPHENS | Date | 04.10.2022 |
| Designed | P.RODRIGUEZ | Date | 04.10.2022 |
| Verified | S.ALVEREZ BERRAZA | Date | 04.10.2022 |
| Approved | C.STEPHENS | Date | 04.10.2022 |

| | |
|---------|--|
| Client | PERKINS |
| Project | HANDS OVAL STADIUM STAGE 1 SD/DA SUBMISSION |
| Title | AUTOTURN PLAN |

| | | | | |
|--|-----------------------------|------|------------|---|
| Status | FOR CONCEPT APPROVAL | | | |
| NOT TO BE USED FOR CONSTRUCTION PURPOSES | | | | |
| DATUM | AHD | DATE | 30/09/2022 | |
| Scale | 1:250 | Size | A1 | |
| Drawing Number | StantecA-CV-0600 | | Revision | B |

XREFS: X:CVI200347-Base 2.0; X:CVI200347-Existing Services; CAD File: Y:CVI200347_Perkins_Hands_Oval_Stadium_D&C_05_Technical\Civil\CAD\StantecA-CV-0600_A.dwg

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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