

infraPlan



CITY OF ADELAIDE – SCHOOL SAFETY REVIEW

St Aloysius College

December 2023

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Project Name	CITY OF ADELAIDE – SCHOOL SAFETY REVIEW - St Aloysius College
Client contact details	Jarrad Parsons Team Leader, Traffic & Transport 5th Floor 25 Pirie Street ADELAIDE SA 5000 p: 8203 7203
Consultant contact details	Nicholas Skordas Transport Engineer - InfraPlan Pty Ltd Level 2, 44 Currie Street ADELAIDE SA 5000 p: 08 8227 0372 Nicholas.Skordas@infraplan.com.au

Document Control					
Name:	IP23.016 St Aloysius College				
Version	Notes	Author	Date	Reviewer	Date
0	DRAFT	NS	24 10 2023		
1	DRAFT	NS	15 11 2023		
2	REVIEWED	NS	29 11 2023		
3	FINALISED	NS	19 12 2023		

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1. Introduction

St Aloysius College is located at 53 Wakefield St, Adelaide SA 5000. The site fronts Wakefield St to the North, Chancery Ln to the East, and Angas St to the south, with ingress and egress points for pedestrians located across all three streets. The site is bordered by SAWater and Victoria Square to the West.



Figure 1 - Subject site view from Wakefield Street

Site parameters

- 367 m of road frontage.
- 1.6 ha of applicable area.
- ~1200 students enrolled.

Current infrastructure

- Pedestrian actuated crossings on:
 - Wakefield Street.
 - Angas Street.
- School zones designations on:
 - Angas Street.
 - Chancery Lane.
- Indented parking on Angas Street.

The site contains access points via Wakefield Street, Chancery Lane, and Angas Street. These roads are integral within the context of the local road network, with high traffic volumes throughout the day leading to increased rates of congestion during school peak drop-off and pickup periods. High levels of motorised vehicle traffic are a road safety concern and a health concern (including for air quality and noise), especially for children.

Roughly 60% of drop-off and pickup operations occur on Angas Street, with a further 30% occurring on Wakefield Street, and the final 10% occurring on Chancery Lane. A small group of students are loaded onto buses within the school site and egress through Angas Street. The southern egresses of the school primarily service junior and middle school students, with the northern egresses servicing middle and senior school students. Victoria Square provides most nearby public bus infrastructure, and Rundle Mall generates the largest pull of amenities for the local network for middle and senior school students.

Ticketed on street and indented parking surrounds the school, with segments of parking switching to free 10-minute parking for parents/carers between 8 – 9 AM and 3 – 6 PM. There is no on-site parking available for parents/carers. Some parents/carers waiting for car parking spaces are undertaking illegal manoeuvres such as crossing double white lines to perform a U-turn, crossing double white lines to enter a park, and parking within cycle lanes.

2. Site Operations

Following an investigation of the subject site, the following insights are provided:

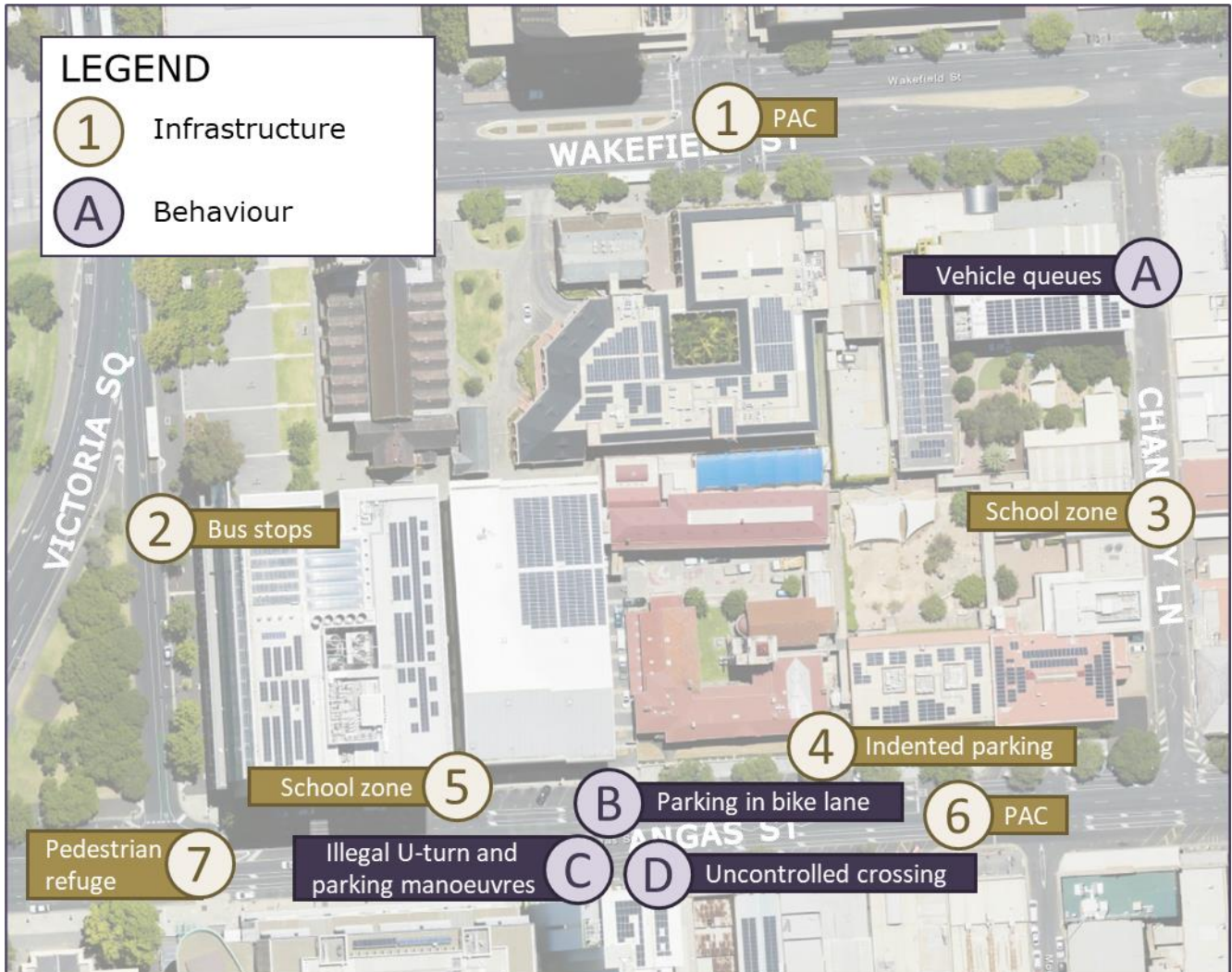


Figure 2 - Notable site operations

2.1 Traffic circulation

The site contains multiple access points via Wakefield St, Angas St, and Chancery Ln. These roads are highly trafficked within the context of the local network, with vehicles using the roads as primary routes to reach alternative destinations within the CBD. Congestion during peak school hours is common along Angas St, especially during the pickup period as parents/carers will arrive within a concentrated time period. The scattered arrival times of parents/carers throughout the drop-off period somewhat alleviates the severity of congestion within the morning peak.

The school's primary pickup point is located along the frontage of Angas St with an estimated 60% of students, consisting of primary and middle school students, egressing the site through this route. Wakefield St services an estimated 30% of students and consists primarily of high school students. The remaining 10% of students are serviced by Chancery Ln. Parents/carers will park on both sides of Angas St, leading to a high rate of uncontrolled crossings. Pedestrians on Wakefield St will primarily walk to bus stops or Rundle Mall.

2.2 Infrastructure

1. Pedestrian Actuated Crossing (PAC) on Wakefield Street

The PAC located on Wakefield Street provides a signalised crossing opportunity between the school, student foot traffic seeking to reach bus stops north of Victoria Square, and students walking to Rundle Mall. Sight distances on the school's side of the crossing are maintained through the use of parking restrictions.

2. Bus stops on Victoria Square

Bus stops along Victoria Square provide direct public transportation access to students, servicing primarily middle and high school students. The presence of the bus stops leads to high rates of pedestrian traffic heading west once egressing from the site. Students may have to cross multiple roads to reach bus stops further north or south. Most crossings are signalised, while some parts of the square have informal, uncontrolled crossing points.

3. School Zone on Chancery Lane

140 m of school zone encompasses the eastern egress point on Chancery Lane and is placed to capture pedestrian crossing movements from the school grounds to parked vehicles on either side of the one-way street. The school zone sees high pedestrian activity due to the high availability of on-street parking opportunities. Visibility is hindered by the presence of parking on either side of the road, justifying the necessity of the school zone's presence.

4. Indented Parking on Angas Street

Indented angled parking is provided on either side of Angas Street, servicing the two southern egresses of the school grounds. Parking restrictions are applied during peak pick-up or drop off periods for some groupings of parks, resulting in parking bans between 8 – 9 AM and 3 – 6 PM for all except parents/carers, who receive a free 10-minute parking pass. Outside of peak periods, parking is paid. Sight distances for the nearby PAC are assisted by the indented parking. Additional road width is provided to bike lanes to help accommodate the angled parking.

5. School Zone on Angas Street

140 m of school zone partially encompasses the southern egress points on Angas Street and is placed to capture pedestrian crossing movements from the school grounds to parked vehicles within the angled parks along either side of the street. The school zone contains the primary egress point for the site and sees high pedestrian activity due to the high availability of on-street parking opportunities. The western segment of the school zone contains a painted median, eventually converting into a double solid white line along the eastern segment.

6. Pedestrian Actuated Crossing (PAC) on Angas Street

The PAC located on Angas Street provides a signalised crossing opportunity between the school and parking along the southern side of the street. Sight distances on the school's side of the crossing are maintained through the use of indented parking.

7. Pedestrian Refuge on Angas Street

A pedestrian refuge is strategically located on Angas Street to capture movements heading south from the site, and was often used by student seeking bus stops further south of Victoria Square.

2.3 Behaviour

A. Vehicle queues on Chancery Lane

Chancery Lane currently operates as a direct connection between two major CBD streets while also accommodating numerous parking spaces. The inability to legally U-turn on Angas Street during the peak period leads to many detouring through Chancery Lane to turn around. This detour is performed by both parents/carers and unrelated motorists. Queues form along the length of Chancery Lane that intensify during school pick up hours. Those turning right off of Chancery Lane cause the most delays within the queue. The queues along Chancery Lane may contribute to parents/carers having a preference for dropping students on Angus Street. Some drivers are then choosing to be impatient and undertake illegal manoeuvres.

B. Parking within the bike lane on Angas Street

Parents/carers will often park within the bike lane along the school frontage, primarily within the northern segment of the school zone along Angas Street. People cycling are forced to enter the car lane to overtake these vehicles, leading to an unsafe cyclist environment. Other motorists will cross the double solid white line to overtake these parked vehicles. This behaviour is caused by the lack of any desire to park further away from the school grounds to pick up students. Site observations and inquiries revealed that parents/carers were reluctant to walk long distances with primary school students.

C. Illegal U-turns and parking manoeuvres on Angas Street

The centre of Angas Street contains a double solid white line, which is meant to restrict the use of unexpected and large sweeping manoeuvres within the school zone. These lines are seemingly ignored by motorists due to a multitude of factors. The high demand for parking opportunities leads to aggressive and competitive parking behaviours, with motorists crossing the centre lines to claim available angled parks. Motorists will take advantage of wide carriageway of Angas Street to perform U-turns, circumnavigating the need to drive through roads such as Chancery Lane to change travel direction. The ease of these and short-term benefits of these actions has led to their common use by both parents/carers and regular CBD motorists.

D. Uncontrolled crossing on Angas Street

The availability of angled parking on either side of Angas Street, in addition to the distance of the nearest PAC or pedestrian refuge from the primary egress of the school grounds, lead to high numbers of uncontrolled pedestrian crossings along the length of the school zone within Angas Street.

The following figure provides a summary of observed pedestrian crossing locations, parking locations during school pickup, bus stops, and observed illegal manoeuvres.

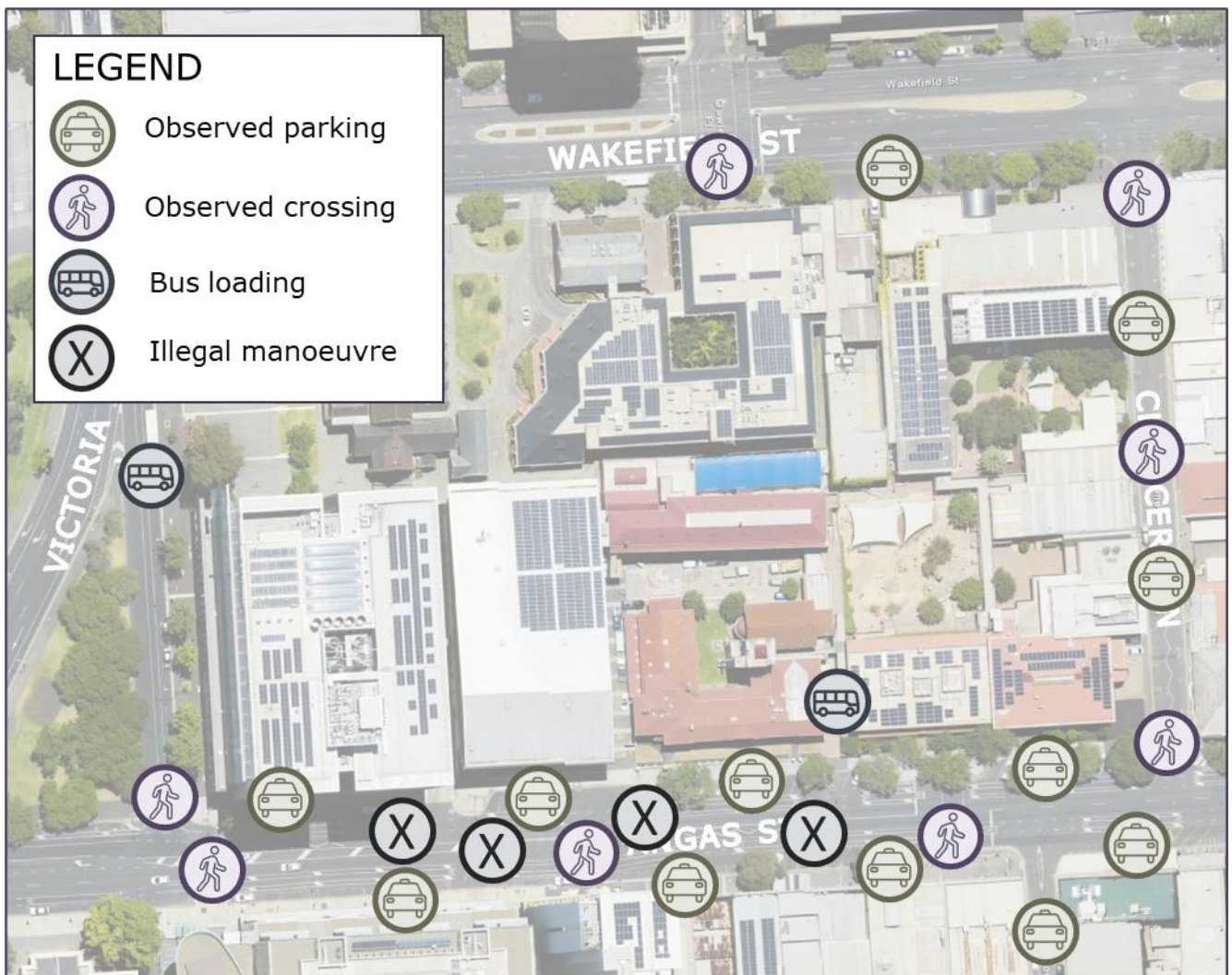


Figure 3 - Summary of observed crossing and parking locations during school pickup

3. Proposed Works

The proposed works focus on improving awareness of the school zone for motorists along Angas Street, along with potential solutions to reduce uncontrolled crossings and illegal manoeuvres.

The idea of implementing a median fence within the Angas Street school zone was proposed to address uncontrolled crossings and illegal manoeuvres, but was decided against due to the following reasons:

- Parents/carers and students may attempt to cross despite the presence of a waist high barrier, potentially leading to increasingly hazardous scenarios.
- In its current design, pedestrians desire to cross at all points along Angas Street to reach parked cars through the quickest possible route.
- The implementation of a fenced median within the Adelaide CBD environment currently has no existing precedent.
- The negative push back to such a design from local businesses and residents, especially cafés located directly across from the school site, would be immense.

Instead, site works will focus on the movement of pedestrian egressing from the site by improving the safety of crossing within the existing network.

Refer to appendix for a mud map of proposed works as an indicative summary of subject site deficiencies.

Proposed Works	Estimated cost
<p>A. Encourage alternative parking behaviours across school site</p> <p>School staff should be encouraged to monitor parents/carers parking behaviours in streets surrounding the school to identify illegal parking practices and communicate these to the school community through the appropriate school channels to encourage parking compliance. This includes parking within the bike lane along Angus Street, the off-street staff parking directly adjacent to the primary egress, and the off-street staff parking along the south of Chancery Lane. These existing parking behaviours and sites have been identified as potential points of risk, especially regarding visibility, and can only be mitigated through communication with staff and parents/carers. Persist with these preventative measures until new parking behaviours are established.</p>	<p>Regular Maintenance</p>
<p>B. Duplication of school zone signage on Angas Street</p> <p>Existing signage meets the minimum requirements outlined within the <i>Speed Limit Guideline for South Australia</i>, however there is evidence that this signage may be insufficient for the site. Installing additional new signage within the school zone in accordance with <i>Section 7.18</i> will help remind motorists that the school zone is still active, increasing safety and traffic flow.</p> <ul style="list-style-type: none"> ○ Installation of new 25km/h school zone signage on existing signposts. 	<p>\$900</p>
<p>C. Ban right turn on Chancery Lane</p> <p>Implement a right turn ban on the egress of Chancery Lane to help improve flow of traffic as parents/carers filter through to pick up and drop off students. Connect existing medians on Wakefield St to ensure compliance with the proposed ban.</p> <ul style="list-style-type: none"> ○ Connection of existing medians. ○ Installation of painted left turn arrow. 	<p>\$105,900</p>

D1. Investigation: Installation of median with pedestrian refuge on Angas Street \$109,600

Installation of a median and pedestrian refuge within the school zone on Angas Street to match desire lines for pedestrians, and prevent illegal manoeuvres within high risk zones. Ideally connect the existing pedestrian refuge and PAC. Otherwise, the median must have a minimum width of 1.5 meters and length of 25.0 metres to effectively cover the primary egress of the school grounds. The traffic calming capabilities of a median will also help in maintain compliance of school zone speed limits.

- Installation of 2 kerb ramps.
- Installation of new pedestrian refuge.
- Installation of new median (Ideally extending to existing pedestrian refuge and PAC).
- **Further investigation** into the layout of pavement markings and parks to account for the changes in allocated carriageway width is required to pursue this option.
- **Further investigation** into use of flexi posts as a short-term solution; allowing for potential upgrade opportunities in the future.

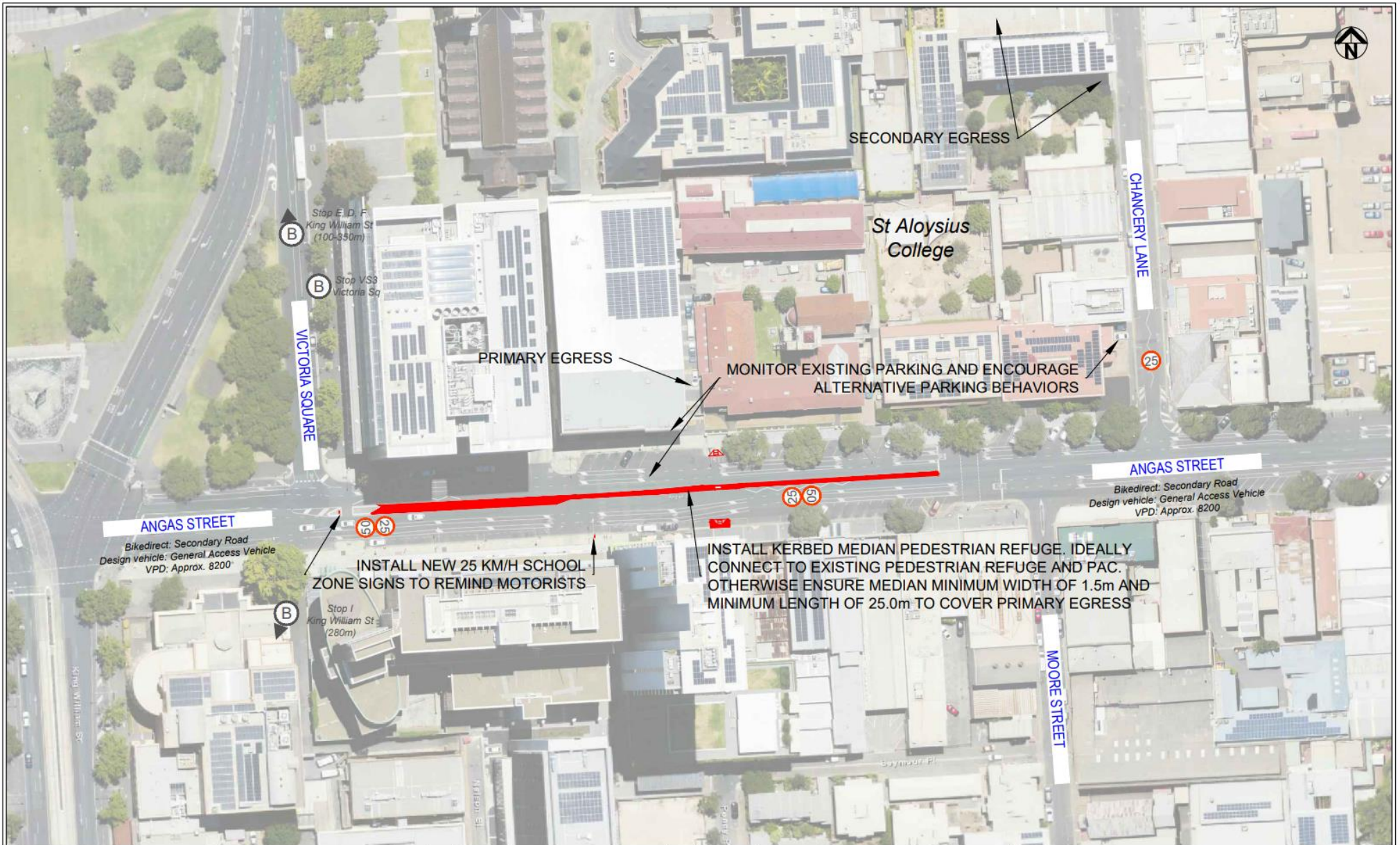
D2. Investigation: Installation of PAC within school zone on Angas Street \$313,000

Installation of typical school zone crossings (Emu, Zebra, Wombat) is not recommended due to the carriageway width exceeding the acceptable maximum width outlined in the *Supplement to AS 1742.10 Part 10: Pedestrian control and protection, Clause 6.3*. It is worth noting that the high traffic volumes outside of school hours may also lead to a lack of compliance for these aforementioned crossings during school peak periods. This behaviour would be similar to the existing lack of compliance witnessed on site regarding the 25 km/h speed limit. The existing PAC east of the school zone has proven to be ineffective and not along the current pedestrian desire lines. **It must be noted that a PAC within a school zone is not permitted under DIT’s Speed Limit Guideline for South Australia guidelines;** however, there is recent precedent for such a design, with Gilles Street incorporating a PAC within the school zone. Accommodating this design may require adjustments to the existing eastern PAC.

- Installation of 2 kerb ramps.
- Installation of traffic signals with pedestrian push buttons (Ensure driveways have visibility of traffic signals).
- Installation of pedestrian fencing.
- **Further Investigation required** due to such a design deviating from DIT standards, especially regarding safety factors and ideal crossing placement location.
- **Potential Investigation** into expanding existing school zone coverage.
- **Potential Investigation** into the feasibility of a raised crossing design.

Table 1 - Summary costings of proposed works. Note, discrepancy in sum total due to individual item rounding.

Proposed works	Estimated item cost
Duplication of school zone signage on Angas Street	\$900
Ban right turn on Chancery Lane	\$105,900
Investigation: Installation of median with pedestrian refuge on Angas Street	\$168,600
Investigation: Installation of PAC within school zone on Angas Street	\$313,000
Total with option D1	\$275,400
Total with option D2	\$419,800



NOTES

1. CONCEPT DESIGN ONLY PREPARED ON AERIAL PHOTOGRAPH AS BASE. AN ENGINEERING SURVEY AND DETAILED DESIGN IS REQUIRED PRIOR TO ANY WORKS.

2. UNDERGROUND SERVICES, STOBIE POLES, LIGHT POLES AND TREES TO BE LOCATED AND CONCEPT ALIGNMENT TO BE MODIFIED TO AVOID CONFLICT.



REVISION	DESCRIPTION	BY	DATE
A	For client review	NS	24 10 2023
B	For client review	NS	21 11 2023

Level 2, 44 Currie Street Adelaide SA 5000
 P (08) 5227 0372
 e: Nicholas.Skordas@infraplan.com.au

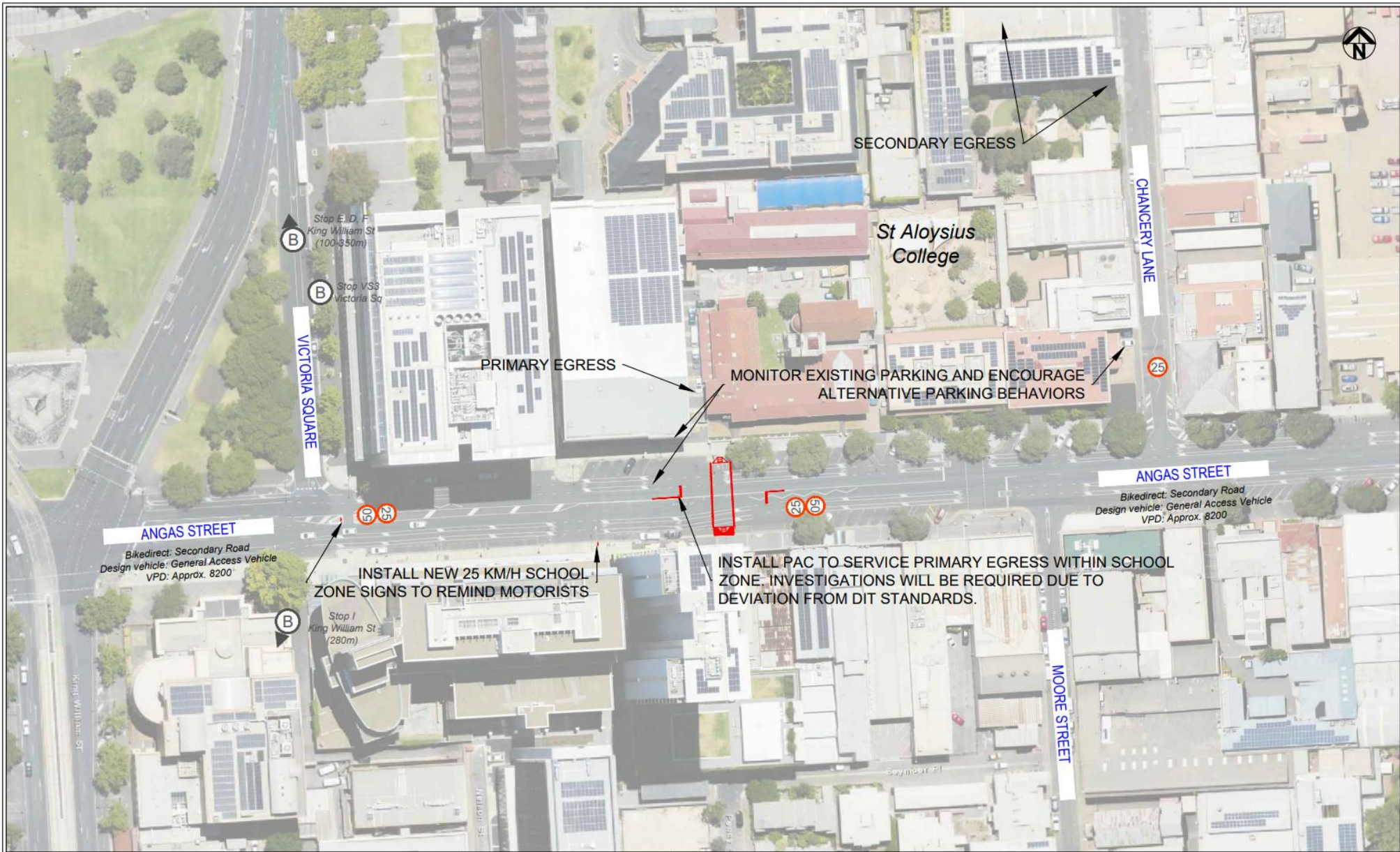
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DESIGNED	NS
CHECKED	
DATE	NOV 2023
SCALE	1:1000
TOTAL NUMBER IN SET	1 OF 3
PROJ NUMBER	IP23.016
DRAWING SET NUMBER	IP23.016-01-B

School Transport Review

City of Adelaide

St Aloysius Primary School



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P (08) 8227 0372
e: Nicholas.Skordas@infraPlan.com.au

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PROJ NUMBER	IP23_016
DRAWING SET NUMBER	IP23.016-02-B

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CONNECT EXISTING KERBED MEDIANS TO BAN RIGHT TURNS FROM CHANCERY LANE. INSTALL LEFT ARROW PAVEMENT MARKING TO HELP INFORM MOTORISTS.

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Level 2, 44 Currie Street Adelaide SA 5000
 P (08) 8227 0372
 e: Nicholas.Skoridas@infraplan.com.au

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DATE	NOV 2023
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PROJ NUMBER	IP23.016
DRAWING SET NUMBER	IP23.016-03-A

School Transport Review

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