

WA:2544_8.109_PSC cover letter
Monday, 4 March 2019

Joe Gleeson
Traffic Engineer
Port Stephens Council
116 Adelaide Street
Raymond Terrace NSW 2324

**Re: SSD 8989 Catherine McAuley Catholic College, Medowie
Additional Information Requested to support Development Application**

Dear Joe,

To address Port Stephens Council traffic referral comments at our meeting held on 7 February 2019 (meeting record issued via email to you on 19/2/19 & enclosed) we include the following information relating to the items requested in the meeting:

Item 20 & Item 26

A written 'Access Design Analysis' prepared by SECA Solutions dated 1 March 2019 is enclosed for your information.

Item 23

The Civil engineer has advised the culvert shown on the concept civil roadway drawings follows the line of the existing culvert and creek bank. An extract of the site survey in this area is enclosed for reference.

We seek Council's response to the information and referral to the Department of Planning within the next 10 working days to allow assessment of the development application to progress.

If you require any further information please don't hesitate to contact me to discuss.



Tim Hayes
Associate Director

B.Arch B.Sc(Arch) Dip.PM NSW ARB No.9715

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Cc. Assessing Development Officer, NSW Department of Planning

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Directors Jon Webber (Nominated Architect) AIA NSW ARB No. 6830
Sandra Hinchey, Keiran Brooks
Associate Directors Andrew Barnard, Tim Hayes
Associate Luke Keating

Design Meeting Minutes

Date Thursday, 7 February 2019
Project 2544 Catherine McAuley College
Meeting Location Port Stephens Council, Raymond Terrace.

Present

COUNCIL	Joe Gleeson (JG) Traffic Engineer Lisa Lovegrove (LL) Road Safety Officer Andrew Behrens (AB) Engineering Services Manager Josh Bennie (JB) Development Engineer Michelle Eastcott (ME) Graduate Development Engineer
ARCHITECT	Tim Hayes (TH) Webber Architects
CONSULTANT	Ian Brown (IB) ADW Johnson Sean Morgan (SM) SECA Solutions Tyler Neve (TN) SECA Solutions
CLIENT REP	Callan Denny (CD)
OTHER	

Apologies

Distribution All present

Corrections to Previous Minutes

Please contact our office if there are any omissions or should there be any adjustments required to these minutes.

ITEM	ACTION	DATE
1. TH provided a summary of the development design process to date, including meetings with the Government Architect (GANSW), RMS & PSC relating to traffic and parking impacts of the development.	Note	

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Nominated Architect Jon Webber AIA NSW ARB No 6830
ABN 83 140 652 188

ITEM		ACTION	DATE
2.	TH provided a summary of site constraints that has led to the current siting arrangement and vehicular entry point layout. This includes the limited frontage of the site, length of decal lanes required, intersection traffic light phasing, crest of the hill along Medowie travelling southbound which limits sight lines, mapped floodways across Medowie road to the north & south of the site, low lying area of Kingfisher Close, Ausgrid Electrical Easement, South Street Intersection, Ausgrid HV switch on the eastern side of Medowie Road.	Note	
3.	TH advised GANSW comments during the SEARS application process had strongly recommended a safe pedestrian entry to the site from the boundary to the school gate which promoted walk/ride modes of transport. The current design reflects the best outcome of up to 13 design options to achieve this, which limits pedestrian/vehicle conflict at peak times to that of school buses at a level pedestrian crossing only. This internal low speed environment was considered an acceptable outcome and manageable by providing supervision to the crossing at peak times. TH advised that to provide full unrestricted pedestrian passageway from the street boundary to the site required two separate carparks & internal road networks. This was not possible due to the limited site frontage, and deceleration lane lengths required for two entry/exit points.	Note	
4.	TH & SM noted that a significant amount of on site storage for pick up/drop off was provided to cater for the entire development at peak periods to satisfy RMS that storage would not impact on Medowie Road traffic flows.	Note	
5.	TH noted the amount of on-site vehicular infrastructure proposed by the applicant is unprecedented at any other school in the Diocese area, and has an associated capital cost of \$4 to \$5M.	Note	
6.	TH advised the applicant seeks a determination regarding the Response to Submissions additional information prepared by SECA solutions to enable Council to provide a favourable response back to the Department of Planning to enable the Development Application to be determined.	Note	
7.	SM discussed Items 10 to 14 of SECA's response to submissions addressing Council comments.	Note	
8.	Item 10a) SM notes traffic counts were undertaken under RMS guidelines which is a typical day.	Note	
9.	Item 10a), 10b) & 12) SM advised traffic flows associated with the RAAF base peak occurs outside the School peak times. The road and intersection has the capacity at the maximum peak (school period) therefore will cater for other lesser peaks such as the RAAF base traffic.	Note	
10.	Item 10c) Detailed cycle movements have not been fully detailed in the traffic assessment as they are considered low, but are observed to be 20 – 30 per hour.	Note	
11.	Item 10d) SM notes traffic data has been taken from CSO supplied data. TH advised the Diocese had provided survey data from four local high schools and four local primary schools of similar rural residential nature or catchment area, including Lochinvar, Booragul, Chisolm & Mayfield (San Clemente catchment). The Lochinvar data was adopted at RMS request.	Note	

ITEM		ACTION	DATE
12.	Item 10g) SM advised there would be no expected impact on street parking, all parking for peak period demand was catered for on site.	Note	
13.	Item 10f) SM advised the URAP higher growth figures have been adopted in the SIDRA modelling.	Note	
14.	Item 11 SM noted the desired approach would be to access the site entirely from the traffic light intersection, but due to site constraints and delay through phasing of the traffic light intersection, this cannot occur whilst satisfying RMS design guidelines.	Note	
15.	Item 14a) SM notes through consultation with RMS, the right hand sheltered turn lane into the site for southbound travelling vehicles is considered acceptable from a road safety aspect, providing Austroads compliance is met. The right hand turn provides sufficient deceleration and storage lengths for the 90km/h design speed, albeit this turn lane will mostly be utilised during 40km/h school zone times. The northbound through traffic at the peak school period is not anticipated to cause delay to vehicles entering the site and will be restricted to 40km.h speeds during peak school times.	Note	
16.	Item 14b) SM notes SECA have reviewed traffic & accident data at the Richardson Road roundabout and it is considered low risk for the proposed bus U-turn. The load of up to 12 buses in the hour is considered low impact. SM notes SECA can model the impact on the intersection but this would demonstrate little change.	Note	
17.	Item 14c) SM noted that while the School cannot control parent behaviour, there is the ability to educate the school community over the duration of the Masterplan to avoid pick up/drop off in South Street. Pedestrian fences have been provided for in the design at RMS request to control pedestrian movements at the four legged level crossing at the intersection. TH notes the internal road network provided was the required on site storage to comply with the traffic assessment.	Note	
18.	Item 14e) TH notes footpath extensions into The Pacific Dunes development from the South Street intersection at Council's request has now been included in the development application documents, however the request for the applicant to provide a shared pathway on the eastern side of Medowie Road is unreasonable given the developer is also required to provide Section 94 Contributions. A statement to this effect has been included in the Planners Response to Submission Report.	Note	
19.	JG confirms he has no further concern over the data contained in the report, and SECA's response is adequate.	Note	
20.	JG & LL notes Council's comments remain regarding the preference for all movements to the site from the intersection. However JG is sure the proposal will work and seeks a formal response to demonstrate to Council the technical aspects of the inability to get the vehicular entry & exit off the intersection, as well as the right turn into the site to work. This should be supported by modelling data. SM to prepare a response.	SECA Solutions	
21.	JG notes the additional footpaths to be provided in the Pacific Dunes Development will aid safety of pedestrians assuming there may be some drop off on the opposite side of Medowie Road.	Note	

ITEM		ACTION	DATE
22.	LL considers the delay in travel for students on buses southbound via the Richardson Road roundabout to be significant. SM considers this arrangement is not unprecedented and the delay to travel times of less than 5 minutes is acceptable. TH advises due to site constraints the buses travelling southbound cannot turn right from Medowie Road into the site, due to several factors such as the turning radius required on site for a 90deg bus manoeuvre, RMS & GANSW request to remove the dedicated Bus storage lane from across the frontage of the site, the separation of the light vehicle and bus road network, and the limitation in road width across Medowie Road to enable a bus phase/sheltered turn lane & to maintain the shared pathway.	Note	
23.	JB queried why the culvert crossing under the roadway was square to the road and not tapered with the creekline to facilitate hydraulic flow. TH to request a response from the civil designer.	Webber Architects	
24.	LL seeks confirmation of staging. TH notes this is described in the staging plan submitted with the development application. TH confirms the front lower carpark and on-site bus infrastructure is provided in the first initial stage. This will cater for the development up until the third stage of construction/third student year intake. The provision of the bus infrastructure in the first stage is satisfactory to LL.	Note	
25.	AB suggests the options analysis and technical justification for the current design to be prepared by SECA Solutions should be incorporated into the Safety in Design Report. This should include the entire options study and not just the final outcome.	Note	
26.	The Applicant is to provide the technical response to PSC prior to PSC providing a response to the Department of Planning.	Webber Architects/SECA Solutions	

Meeting Minutes prepared by: Tim Hayes

Attachments: SECA response to submissions letter dated 3 December 2018

1 March 2019

P0925 CMCC Access Design Analysis

Catholic Schools Office – Diocese of Maitland Newcastle
C/- Webber Architects Suite 3, L1,
426 Hunter Street
Newcastle NSW 2300

Attn: Tim Hayes

Dear Tim,

Re: Response to Port Stephens Council - Access design for Catherine McAuley Catholic College

This document has been prepared in response to Council's request to document the range of options assessed regarding the access layout for the site and the technical justification for the adoption of the final access design for the development.

Council have indicated their preference is for all access to the site to be catered for through the proposed signalised intersection of Medowie Road and South Street. Of particular focus in this response is the constraints of the site (internal and external) that determined the provision of access through a single signalised intersection at South Street to be unfeasible.

General Site Considerations / Constraints

The location of South Street opposite the centre of the site frontage on Medowie Road made this location the most logical and efficient location to provide access to the subject site. In addition to this, the existing Medowie Road/South Street intersection sees delays for the turn movements with reasonably high traffic flows during the peak periods. The Sidra modelling for the existing intersection completed as part of the project work, as well as the Sidra Modelling completed as part of the URAP Medowie Traffic and Transport Study, both determined this intersection shall require upgrade to accommodate increasing traffic flows along Medowie Road. As this intersection required upgrade in any case the development was well positioned to incorporate this.

The provision of a roundabout intersection in this location was ruled out, as this would not allow for safe and controlled pedestrian movements across Medowie Road, which are critical for the school development. Council and RMS agreed with this in the early discussions regarding access for the development.

Consideration was given to providing a single access to the site at a different location along the site frontage on Medowie Road, however given the close proximity to South Street and the need for this intersection to be upgraded to signals in any case it was not considered desirable or feasible to provide two signalised intersections so close together. The provision of a left in left out treatment for South Street would see this intersection operate with sufficient capacity, however this would have led to significant negative implications for the residents of the Pacific Dunes subdivision regarding access (no right turns into or right turns out of South Street) and was therefore not considered.

Site constraints

- The width of the road reserve for Medowie Road to the immediate north of South Street was a limitation for the design of the traffic signals. Along the site frontage on the western side of Medowie Road there is an

Ausgrid Electrical Easement. On the eastern side a shared path has been identified by Council within the existing road reserve.

- The restrictions on the internal site area available for the car park and internal road network. The area dedicated for parking and internal manoeuvring was determined in conjunction with GANSW comments, as well as taking into account the constraints regarding the electrical easement and restrictions for the use of this site area due to environmental constraints across the site. Given this, the front portion of the site facing Medowie Road was the most suitable location for this infrastructure. The close proximity to Medowie Road allowed limited space to separate vehicle movements on site to achieve efficient traffic flows.

The design of the access had to take into account the internal roads and circulation for the site and the need to minimise cross paths in order to maintain an efficient flow of traffic for vehicles entering the site in order to prevent any vehicle queues extending back onto Medowie Road.

A wide range of alternative options were examined to achieve the most efficient vehicle interactions on site, with the key factor being to ensure all vehicle queues could be contained within the site and not impact upon the classified road (Medowie Road).

Analysis of four-way signalised intersection of Medowie Road / South Street / School Access

Description:

A single access accommodating all vehicle movements in/out of the subject site through the signalised intersection of Medowie Road and South Street.

Intersection Layout:

As discussed above the road reserve of Medowie Road to the north of South Street provides a limited width. Allowing for design in accordance with Austroads including required lane widths, central median, cyclist considerations, as well as the future shared path along the eastern side of Medowie Road there is sufficient width to provide 5 travel lanes in total for the approach and departure on the northern leg of the intersection.

Sidra modelling determined the duplication of Medowie Road through the intersection was required in order to accommodate the traffic flows at this intersection and reduce delays and queuing to within acceptable limits. This gives a total of four lanes (2 approach/2 departure). In order to accommodate a right turn movement into the school as well as a left turn into South Street with a maximum of five lanes available the most efficient designation of vehicle movements was determined as below:

- 2 departure lanes (northbound)
- 1 channelled right turn lane into the School (southbound)
- 1 approach lane for through movements only (southbound)
- 1 combined approach lane for through and left turn movements

This layout is shown to follow in Figure 1.

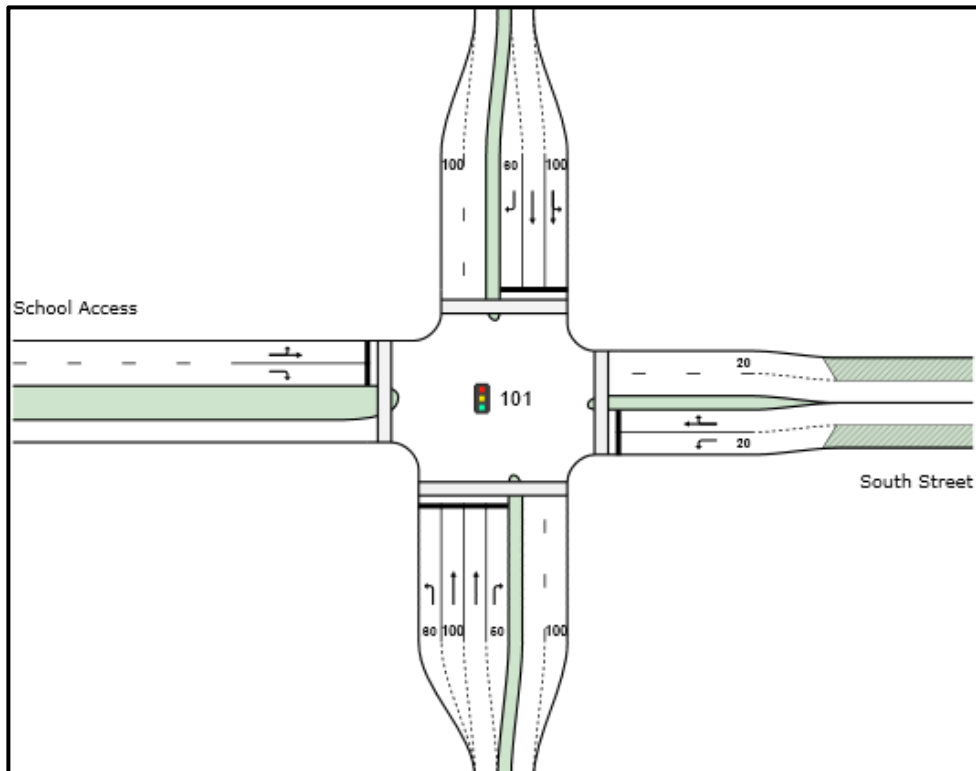


Figure 1 – Intersection layout allowing for all movements in/out of Medowie Road/South Street/School Access

Sidra Results Summary:

The above intersection layout was modelled using Sidra allowing for the surveyed traffic flows as well as the future traffic generated by the development. The AM peak was determined as the critical period for the intersection, with the input flows outlined in Figure 2 below.

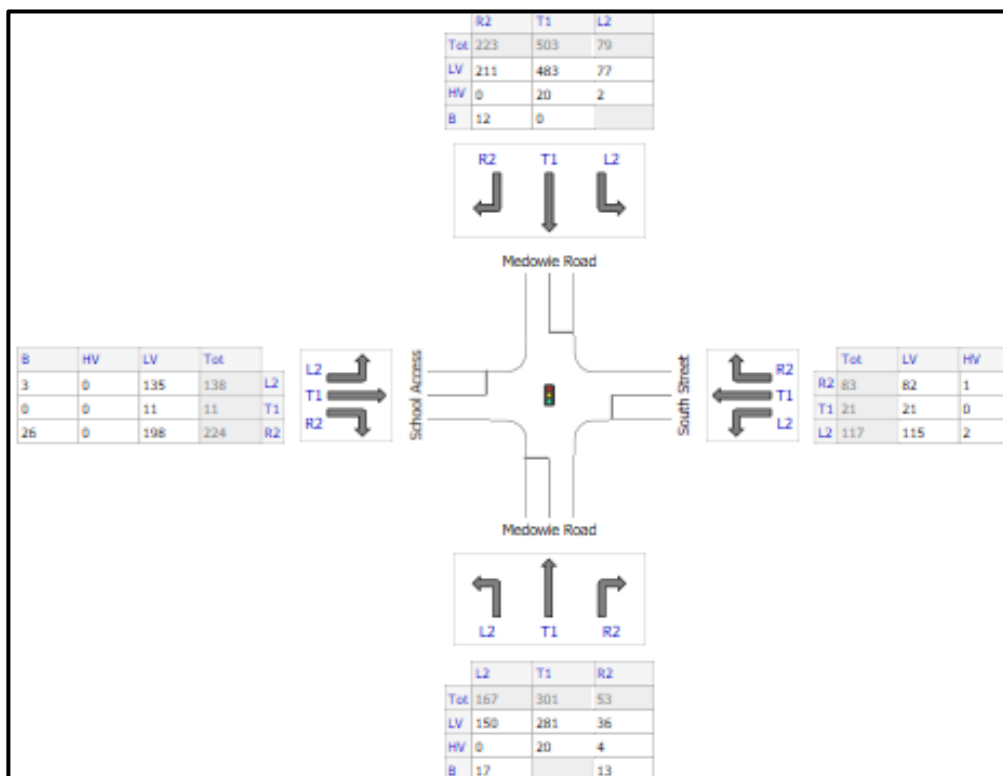


Figure 2 – AM Input flows for Sidra modelling of Medowie Road/South Street/School Access

The intersection was modelled allowing for background growth (2.4%) along Medowie Road through to 2027, with the Sidra Movement Summary during the AM shown below in Figure 3.

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Medowie Road												
1	L2	278	10.2	0.362	15.6	LOS B	5.3	40.5	0.70	0.77	0.70	23.6
2	T1	393	6.6	0.608	33.8	LOS C	10.2	75.5	0.93	0.77	0.93	36.4
3	R2	59	35.3	0.177	37.0	LOS C	2.1	19.4	0.85	0.75	0.85	19.0
Approach		730	10.3	0.608	27.1	LOS B	10.2	75.5	0.84	0.77	0.84	32.0
East: South Street												
4	L2	123	1.7	0.232	18.4	LOS B	2.2	16.0	0.80	0.74	0.80	26.1
5	T1	16	0.0	0.834	54.0	LOS D ¹¹	5.1	36.3	1.00	0.94	1.40	11.5
6	R2	87	1.2	0.834	57.1	LOS E ¹¹	5.1	36.3	1.00	0.94	1.40	25.8
Approach		226	1.4	0.834	35.9	LOS C	5.1	36.3	0.89	0.83	1.07	24.7
North: Medowie Road												
7	L2	83	2.5	0.666	41.8	LOS C	11.9	85.5	0.96	0.83	0.98	33.8
8	T1	657	4.0	1.199	128.0	LOS F ¹¹	45.0	325.6	0.99	1.33	1.99	14.0
9	R2	446	5.4	1.227	193.1	LOS F ¹¹	46.6	341.6	1.00	1.38	2.56	8.9
Approach		1186	4.4	1.227	146.5	LOS F ¹¹	46.6	341.6	0.99	1.31	2.13	12.1
West: School Access												
10	L2	230	2.2	0.341	23.6	LOS B	7.6	54.0	0.74	0.74	0.74	37.0
11	T1	18	0.0	0.341	20.2	LOS B	7.6	54.0	0.74	0.74	0.74	21.2
12	R2	373	11.6	0.979	72.3	LOS F ¹¹	23.2	178.6	1.00	1.22	1.60	7.4
Approach		622	7.8	0.979	52.8	LOS D ¹¹	23.2	178.6	0.90	1.03	1.25	15.7
All Vehicles		2764	6.5	1.227	84.8	LOS F ¹¹	46.6	341.6	0.92	1.07	1.51	15.5

Figure 3 – Sidra movement summary – AM all movements in/out of Medowie Road/South Street/School Access

As part of the RMS response for the development it has been indicated that the Peak Flow Factor for school movements must be adjusted from 95% (considered too high by RMS) for school related movements (60% for school related movements). Allowing for this adjustment as part of this analysis shows the above that the intersection would operate at a poor and unacceptable standard.

It can be seen from the modelling that the intersection layout that during the AM peak allowing for background growth through to 2027 the intersection allowing for all movements will see unacceptable delays and queuing resulting in LoS F for multiple movements.

Other Considerations:

- Allowing for all light vehicles and buses to enter/exit through the single intersection was not workable on the internal road network.

In order to limit pedestrian and vehicle conflicts, the light vehicle and bus drop off/pick up areas were separated on site and located to ensure the vast majority of students did not need cross any internal roads or car parks to access these areas. The limited area available between Medowie Road and the school buildings sees insufficient room to allow for vehicles to cross efficiently in this location, without resulting in queues extending back onto Medowie Road.

- The required storage for buses on site would not be achievable for this layout. Buses are required to separate from light vehicles on site in order to allow for efficient circulation and there is insufficient length on site either side of the School access road to allow for appropriate storage, whilst still providing appropriate internal roads and access to parking areas.

Option Summary:

Sidra modelling shows that a suitable intersection catering for all movements is not able to be provided given the constraints. Further to this, the internal site layout is unable to accommodate all entry/exit movements at a single intersection, with the cross vehicle paths leading to significant delays and congestion on site and the unacceptable result of vehicles queuing back onto Medowie Road.

Inclusion of Right turn for buses only

The incorporation of a right hand turn for southbound buses at the traffic signals was considered. This was not included as:

- The internal road layout provides no capacity for the storage of buses entering the site in this location, with the area between Medowie Road and the internal road for buses to allow storage for one bus only. Should the on site queuing provided for buses be full back to this point, this would result in any additional buses turning right into the site being queued on Medowie Road, which is unacceptable. As such the northbound approach was considered the only way of ensuring sufficient bus storage was provided clear of through traffic on Medowie Road.
- Further to this the road reserve on Medowie Road does not provide sufficient width for an additional lane on the northern leg of the intersection, as discussed previously.
- Providing the required road for bus entry in the site frontage would not satisfy GANSW comments regarding visual impact, with the landscaped area to the front of the car park in this location having been designed to comply with correspondence from GANSW.

The U turn for buses at the roundabout is not considered a safety risk, as accident rates for buses are typically much lower than light vehicles due to their high visibility and lower vehicle speed.

During discussion with the bus company it was noted that in the PM it was likely the vast majority of buses would approach from the south, thereby not requiring the U-turn. In the AM it is anticipated approximately 12 of the total 29 buses would approach from the north, with no specific safety concern regarding these buses completing a U-turn manoeuvre.

Alternative Bus Layout

The provision of bus drop off/pick up along the Medowie Road frontage was considered, with this option potentially not requiring buses to enter the site thereby reducing internal vehicle conflicts. This option was dismissed due to the following:

- Insufficient width along the road frontage to store the required number of buses to service the development.
- The considerations of students accessing the bus drop off/pick up. The shortest route would be through the car par, which would then require pedestrians crossing across all light vehicle drop off/pick up movements. This would result in significant delays for vehicle movements on site given the high number of students using buses. The travel distance required to divert students around internal roads and car parks was to long to be feasible.
- The lack of provision for buses to travel in either direction upon leaving the site.

Analysis of Adopted Design

The adopted access layout included signalisation of the intersection of Medowie Road and South Street, with a new western leg provided allowing for egress from the subject site. Ingress for the site is to occur at a separate T-intersection on Medowie Road to the south of the traffic signals, with this intersection designed in accordance with the requirements of Austroads and allowing for entry movements to the site only.

This allowed for the separation of light vehicles and buses, with queuing and parking provision for the light vehicle drop off/pick up provided independent to the internal infrastructure for buses.

The bus access allows for on site storage to cater for the large number of buses anticipated for the development.

The right turn into the site to the south of the new signals has been discussed and supported in principle by the RMS. During the critical high traffic demand periods i.e. drop off and pick up there will be a 40 km/h speed zone in operation, with much lower demands outside of this period. Visibility at this location is good and there are no

specific safety concerns raised for this movement. This layout of this intersection has been designed in accordance with Austroads Guidelines and includes channelised left and right turn treatments.

The adopted design limits pedestrian/vehicle conflict at peak times to that of school buses at a level pedestrian crossing only, with this to be managed by providing supervision to the crossing at peak times. The pedestrian demands at this crossing do not include a high percentage of students, with only 5% of students anticipated to walk/cycle (approximately 100 movements).

Taking into account the constraints of the site, consideration of pedestrian/vehicle conflicts, as well as light vehicle and bus conflicts and the need to provide a level of separation for these movements, it is considered the adopted design provides the most appropriate access layout for the site.

Summary

The provision of all access to the site at the signalised intersection of Medowie Road/South Street/School Access was considered in light of the site constraints and the high traffic demands during the school peak periods. The area available on site between Medowie Road and the building infrastructure for the development is limited, with insufficient room to allow for the internal road conflicts that arise allowing for entry/exit at a single intersection. The cross paths of light vehicles and buses entering and exiting the site would result in significant delays for vehicles accessing the site and result in queues extending onto Medowie Road, which is unacceptable.

The adopted design reflects the best outcome of a range of design options considered to provide access to the subject site. The key considerations were:

- To minimise vehicle and pedestrian interaction
- To enable drop off/pick up to occur in close proximity to the school, thereby minimising the need for students to traverse internal roads and car parks to access the drop off/pick up facilities (both cars and buses)
- Separate the drop off/pick up areas for cars and buses

The adopted design limits pedestrian/vehicle conflict at peak times to that of school buses at a level pedestrian crossing only, with this to be managed by providing supervision to the crossing at peak times. The pedestrian demands at this crossing do not include a high percentage of students, with only 5% of students anticipated to walk/cycle (100 movements).

The design focuses on containing all vehicle queues within the site and thereby not impact upon the classified road (Medowie Road). The final design was determined to achieve this in the best manner possible given the site constraints outlined.

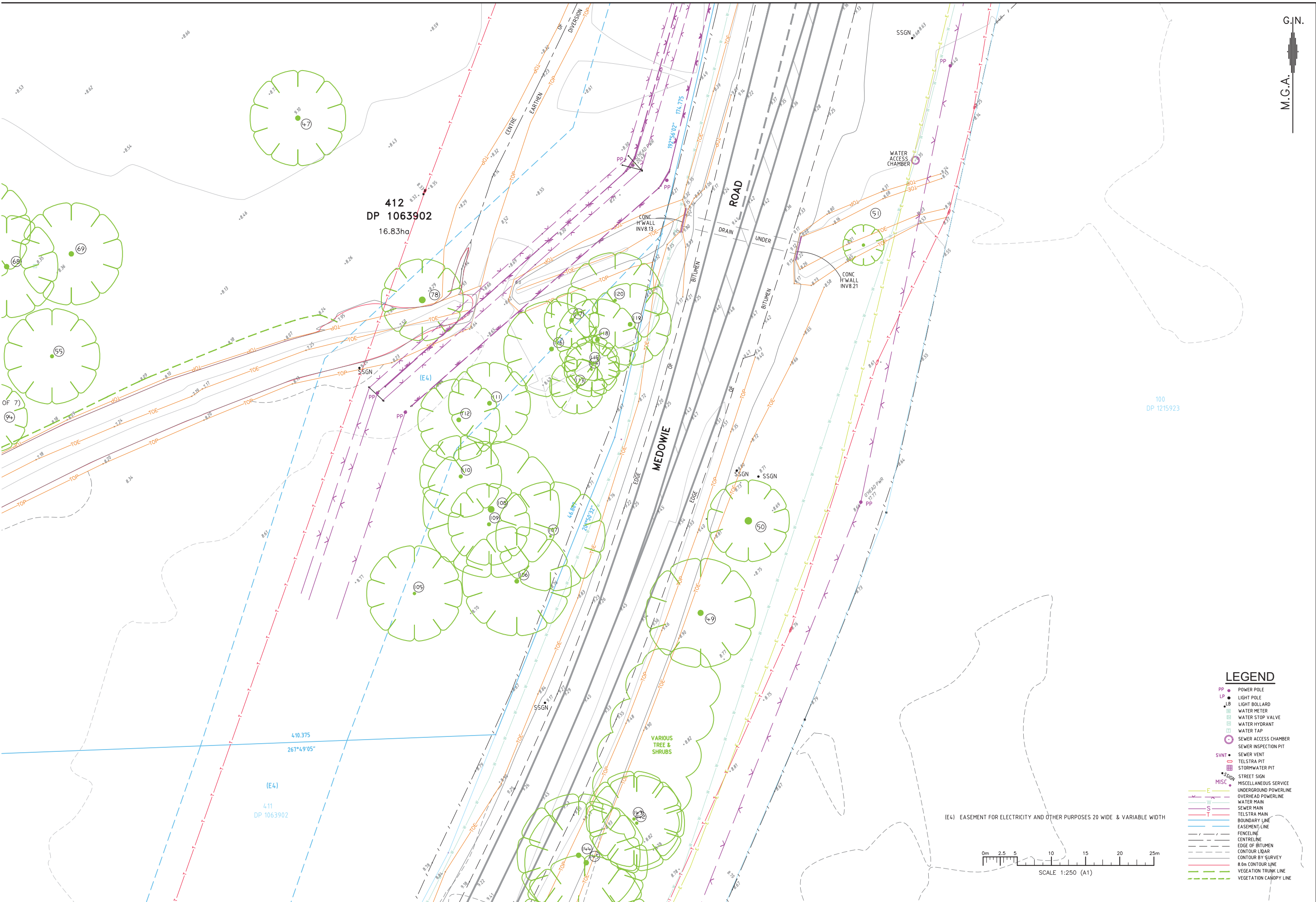
Please feel free to contact our office on 4032 7979 should you require any additional information.

Yours sincerely



Tyler Neve

Traffic Engineer

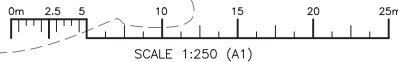


G.N.
M.G.A.

LEGEND

- PP • POWER POLE
- LP • LIGHT POLE
- LB • LIGHT BOLLARD
- WM • WATER METER
- WSV • WATER STOP VALVE
- WH • WATER HYDRANT
- WT • WATER TAP
- WAC • SEWER ACCESS CHAMBER
- WIP • SEWER INSPECTION PIT
- SVNT • SEWER VENT
- TPIT • TELSTRA PIT
- STPIT • STORMWATER PIT
- SSGN • STREET SIGN
- MISC • MISCELLANEOUS SERVICE
- E • UNDERGROUND POWERLINE
- W • OVERHEAD POWERLINE
- S • WATER MAIN
- T • SEWER MAIN
- TL • TELSTRA MAIN
- B • BOUNDARY LINE
- E • EASEMENT LINE
- F • FENCE LINE
- C • CENTRELINE
- ED • EDGE OF BITUMEN
- CL • CONTOUR LIQAR
- CS • CONTOUR BY SURVEY
- 8m • 8m CONTOUR LINE
- VL • VEGETATION TRUNK LINE
- VC • VEGETATION CANOPY LINE

(E4) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 20 WIDE & VARIABLE WIDTH



NOTES:

- ALL UNDERGROUND SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM AUTHORITY RECORDS AND ARE APPROXIMATE ONLY. SURFACE INDICATORS WHERE SHOWN ARE TYPICALLY BY SURVEY AND SHOWN FOR PLOT ONLY.
- THE SITE BOUNDARIES WHERE SHOWN WERE NOT MARKED AT TIME OF SURVEY AND ARE APPROXIMATE. ACCURATE BOUNDARY POSITIONS ARE TO BE DETERMINED ON SITE PRIOR TO ANY WORK.
- DATUM OF LEVELS IS AUSTRALIAN HEIGHT DATUM (A.H.D.) SOURCE OF LEVELS IS PM27725 RL15.075 BY SCMS 16.06.17.
- CONTOUR INTERVALS ARE 0.5 METRES.
- CONTOURS SHOWN DASHED DERIVED FROM LIDAR DATA ARE APPROXIMATE ONLY. LIDAR CONTOURS SHOWN ARE DERIVED FROM DATA SUPPLIED BY LANDS DEPARTMENT NSW, CREATED 12.03.14, TILE REFERENCE RAYMOND TERRACE-C3-AHD_3926374_56_0002_0002. ACCURACY OF LIDAR CONTOURS SHOWN DASHED IS 0.8m HORIZONTAL AND 0.3m VERTICAL.
- CONTOURS, WHERE SHOWN, HAVE BEEN DERIVED FROM THE SPOT LEVELS TAKEN & PROVIDE A GENERAL INDICATION ONLY OF THE GROUND SURFACE.
- THIS DOCUMENT IS FOR PLANNING PURPOSES ONLY.



Surveying, Engineering, Town Planning and Project Management

PARKER SCANLON
PTY LTD

TITLE:

DETAIL PLAN OF LOT 412
& 413 DP1063902
AT MEDOWIE
RE: 507 MEDOWIE ROAD

DATE:

26 JULY 2018

DRAWING:

B1662DET-1-F.DWG

DRAWN/SURVEYED/CHECKED:

WW/ TM/ MS

PARKER SCANLON CONTACT:

M.SCANLON

REFERENCE No:

B1662

DATUM:

A.H.D.

SHEET OF SHEETS

10 11

EXTRA DETAIL ADDED
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PLAN ISSUED
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DRAFT PLAN ISSUED