VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants
ACN 071 762 537 ABN 88 071 762 537

5 May 2021
Ref 20355

Department of Planning, Industry & Environment
Locked Bag 5022
PARRAMATTA NSW 2124

Attn: Mr Chris Ritchie
Chris.Ritchie@planning.nsw.gov.au

Dear Chris,

SSD 8859
PROPOSED SUBDIVISION
1111-1141 ELIZABETH DRIVE, CECIL PARK
SITE ACCESS MATTERS

We refer to Transport for NSW's (TfNSW) letter to the Department of Planning, Industry & Environment (DPIE) dated 12 November 2020, as well as DPIE's letter to AE Design Partnership dated 23 November 2020, requesting additional information (RFI) in respect of the abovementioned development proposal.

DA History

By way of the DA's history, the original plan of subdivision lodged in September 2018 comprised a:

- New local access road from the existing location of Cecil Road (located as far back from Elizabeth Drive as requested by TfNSW (then RMS)); and a
- Deceleration lane from Elizabeth Drive (as requested by TfNSW).

In May 2019, landowners were approached by TfNSW formally opening negotiations for the compulsory acquisition of 26,617m^2 of the site to facilitate the re-alignment of Wallgrove Road as part of the M12 Motorway project. This required an amendment to the plan of subdivision that relocated the proposed access road to a new intersection with the new Wallgrove Road alignment.

A submission was received from Roads and Maritime Services (RMS) during the public exhibition period of the original Environmental Impact Statement (EIS) between 24 January 2019 and 25 February 2019, requesting a deceleration lane be provided along Elizabeth Drive instead of a service road to provide access to any future service station only at Items 1, 3, 4 and 5 of their submission dated 22 February 2019. A full copy of the RMS letter is attached whilst the relevant Items are reproduced below and on the following page.

1. The subject development proposed construction of a service road to access three lots. Roads and Maritime does not support proposed service road based on road safety and network efficiency. It is advised to construct a deceleration lane instead of a service road to provide access to any future service station only.

3. To access the service station from Elizabeth Drive a deceleration shall be provided. The proposed deceleration lane along Elizabeth Drive shall be designed to meet Roads and Maritime requirements, and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with AUSTROADS and other Australian Codes of Practice.
4. Access to the service station should be restricted with left in and left out access only via a deceleration lane. In this regard, it is requested to investigate and propose mechanism to restrict any right turn movements from the deceleration lane onto Elizabeth Drive
5. The deceleration may be constructed within the existing road reserve however land should be dedicated within the property boundary for any future relocation/construction of the deceleration lane. The land identified for deceleration lane should be identified as a separate lot in the subdivision plan and dedicated to Council as road.

On 7 August 2020, a meeting was held via video conference with Senior Land Use Assessment Coordinator from TfNSW and Project Manager for the M12 Team to discuss the implications of the proposed road upgrades associated with Wallgrove Road and Elizabeth Drive in relation to proposed development on the site. It was at this meeting, where TfNSW confirmed that a deceleration lane or any vehicle access points along Elizabeth Drive will not be supported.

Following continual correspondence with TfNSW in relation to the new Wallgrove Road easement and proposed road connections into the site, an Amended EIS Package and Response to Submissions Package was formally lodged with the Department on 22 September 2020 to reflect the amended site boundary as a result of the proposed acquisition.

On 7 December 2020, a meeting was held via video conference with DPIE and TfNSW to confirm the location of the access road into the site from the new Wallgrove Road easement. It was agreed at the conclusion of this meeting that TfNSW will provide additional information in relation to the new Wallgrove Road easement in order to complete further traffic studies.

On 9 January 2021, a meeting was held with Senior Land Use Assessment Coordinator from TfNSW and Project Manager for the M12 Team to discuss the proposed location of the intersection. It was at this meeting where signalised access into the site from the new Wallgrove Road alignment was supported.

On 22 March 2021, a meeting was held via video conference with DPIE and TfNSW in relation to outstanding information required from TfNSW to the Applicant's team, which are required to undertake the traffic assessment required under the RFI dated 12 November 2020. Such information remains outstanding to date.

Response

The following advice is therefore provided in respect of the matters raised in the two abovementioned RFI letters (12 November 2020 & 23 November 2020).

A number of options have been proposed and rejected by TfNSW including:

1. Left-in left-out of Elizabeth Drive
2. Service road along Elizabeth Drive and new local access road from existing Cecil Road
3. Signalised intersection from new Cecil Road alignment directly into site
4. New signalised intersection from new Wallgrove Road alignment to new local access road into the site

The only remaining possibility for site access is off the realigned Wallgrove Road, somewhere to the north of the new Cecil Road signals.

Please see attached the amended structure plan which includes the proposed road layout in the vicinity of the site, including the proposed site access point off the realigned Wallgrove Road. It is pertinent to note that the structure plan utilises the base plan provided by TfNSW in April 2020, which has been modified further to include the proposed new "half seagull" site access intersection, that is, a channelised right turn holding bay, with priority controlled left-in/left-out.

The offset distance between the new Elizabeth Drive & Wallgrove Road traffic signals and the new Wallgrove Road & Cecil Road traffic signals is *as per* TfNSW's base plan, a distance of approximately 110m.

Item 1

1. TfNSW has safety and operation concerns with the proposed location of the access in relation to the proposed new traffic signals and would not support it for the following reasons:
   a. The proposed access to the site on the new realigned Wallgrove Road is located around a bend and TfNSW raises safety concerns with the sight distance at the proposed access road. A sight distance assessment should be provided to demonstrate the required sight distance is achieved.

TfNSW have advised that the future signposted speed limit will be 60km/h along this section of the realigned Wallgrove Road, whilst the design speed limit should be 70km/h. Accordingly, based on Table 3.2 of Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*, the SISD for a 70km/h road with a *reaction time* of 2.0 seconds is 151m, as set out below.

I understand the road design of the future Wallgrove Road realignment is still a work-in-progress, nevertheless a sight distance assessment is provided later in this report, indicating that the 151m safe intersection sight distance (SISD) requirement is and can be achieved.

It should be noted that the previous intersection design proposed and included within the Traffic Report submitted with the application (dated 14 August 2020) has been revised, with the design now including a dedicated left-turn slip lane as part of the "half seagull" design.

Guide to Road Design Part 4A: Unsignalised and Signalised Intersections

Table 3.2: Safe intersection sight distance (SISD) and corresponding minimum crest vertical curve size for sealed roads (S < L)

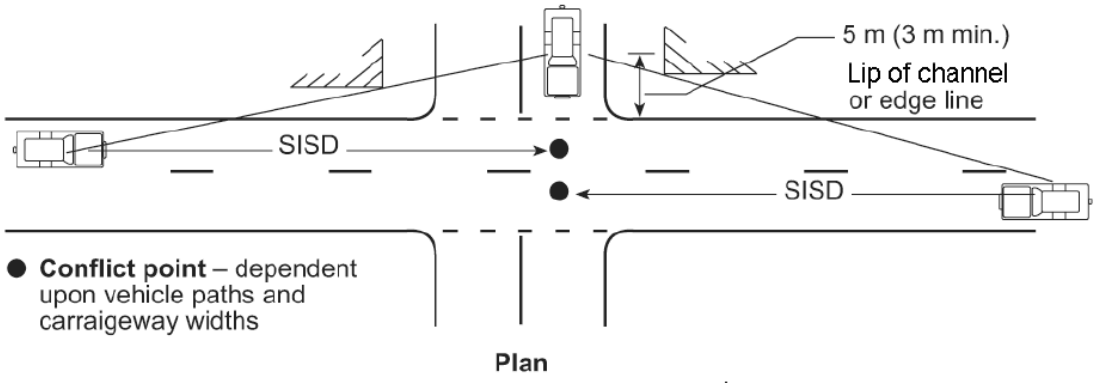
Design speed (km/h)	Based on safe intersection sight distance for cars[1] h_1 = 1.1; h_2 = 1.25, d = 0.36[2]; Observation time = 3 sec					
	R_T = 1.5 sec[3]		R_T = 2.0 sec		R_T = 2.5 sec	
	SISD (m)	K	SISD (m)	K	SISD (m)	K
40	67	4.9	73	6	–	–
50	90	8.6	97	10	–	–
60	114	14	123	16	–	–
70	141	22	151	25	–	–
80	170	31	181	35	–	–
90	201	43	214	49	226	55
100	234	59	248	66	262	74
110	–	–	285	87	300	97
120	–	–	324	112	341	124
130	–	–	365	143	383	157

b. The traffic report p.11, shows a proposed left turn slip lane from the realigned Wallgrove Road onto the access road (access to the subject site), which also continues after the access road to form two lanes on the realigned Wallgrove Road continuing to the intersection with Elizabeth Drive. This will potentially cause significant safety and operational issues as traffic turning in and out onto and from the access road would assume these vehicles on the kerb side lane are turning left onto the access road, however, these vehicles may choose to continue to travel straight on Wallgrove Road. Further, visibility and sightlines for traffic exiting from the access road would also be restricted by traffic travelling along the kerb side lane before the proposed access road.

The critical turning movement for driver visibility is the left turn out of the proposed new subdivision road onto the new realigned Wallgrove Road.

Reference to Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, Section 3.2.2* sets out the design requirements for SISD, which is the minimum sight distance which should be provided on the major road at any intersection. Diagrammatically, SISD is illustrated in the Austroads extract below.

Figure 3.2: Safe intersection sight distance (SISD)



c. The proposed access to the site is uncontrolled and the potential for conflict is high due to it being at a point where drivers are merging and diverging.

See Response to a) and b) above.

Item 2

2. TfNSW require the proposed access to the site on the realigned Wallgrove Road to be located to the farthest point of northern boundary of the site, away from the proposed intersection at Cecil Road.

As noted in the foregoing, vehicular access to the site is proposed to be provided in the form of a "half seagull" intersection located off the realigned Wallgrove Road, set back approximately 80m south-west of the north-eastern site boundary and approximately 110m north-east of the future Wallgrove Road & Cecil Road signals.

Generally speaking, intersections should be located as far back from traffic signals as possible, however in this instance, the curvature of the realigned Wallgrove Road to the north of the site presents some potential sight distance issues.

Relocating the proposed new access further to the north may result in a corresponding reduction in sight distance. It is therefore a balancing act between providing a suitable offset to the new Cecil Road signals and providing sufficient sight distance.

TfNSW have advised that the future signposted speed limit will be 60km/h along this section of the realigned Wallgrove Road, whilst the design speed limit should be 70km/h. Accordingly, the SISD for a 70km/h road with a *reaction time* of 2.0 seconds is 151m, as set out in the table below.

Again, I understand the road design of the future Wallgrove Road realignment is still a work-in-progress, nevertheless a sight distance assessment is provided on the following page, indicating that the 151m SISD requirement is and can be achieved.

Table 3.2: Safe intersection sight distance (SISD) and corresponding minimum crest vertical curve size for sealed roads (S < L)

Design speed (km/h)	Based on safe intersection sight distance for cars[1] h_1 = 1.1; h_2 = 1.25, d = 0.36[2]; Observation time = 3 sec					
	R_T = 1.5 sec[3]		R_T = 2.0 sec		R_T = 2.5 sec	
	SISD (m)	K	SISD (m)	K	SISD (m)	K
40	67	4.9	73	6	–	–
50	90	8.6	97	10	–	–
60	114	14	123	16	–	–
70	141	22	151	25	–	–
80	170	31	181	35	–	–
90	201	43	214	49	226	55
100	234	59	248	66	262	74
110	–	–	285	87	300	97
120	–	–	324	112	341	124
130	–	–	365	143	383	157

Item 3

3. A road safety audit is also required for the proposed access arrangement to the site given the above concerns.

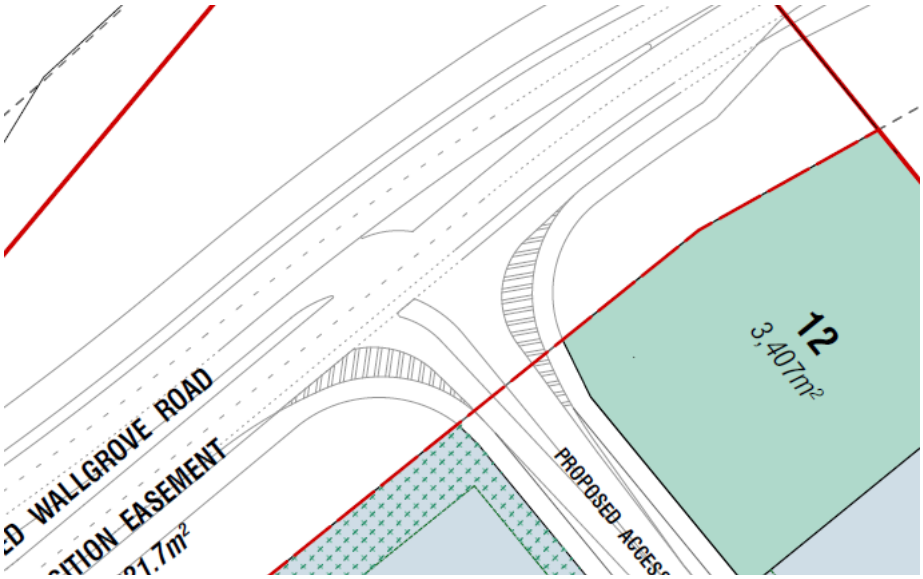
Please see attached Road Safety Audit (RSA) prepared by *MU Group*. In summary, the RSA determined that there were three potential safety concerns that required discussion and mitigation measures. Those three concerns were as follows:

- sight distance for vehicles turning left out of the subdivision road back onto Wallgrove Road, particularly in the instance where a vehicle is also turning left into the subdivision road whilst utilising the left-turn slip lane,
- the width and kerb return radii at the proposed new subdivision intersection and the angle at which smaller vehicles may be placed as they turn left out of the subdivision road back onto Wallgrove Road, and
- the offset distance between the proposed new subdivision intersection and the start of the right turn bay at the new Wallgrove Road & Cecil Road traffic signals

With respect to *MU Group's* sight distance concern, the RSA notes that a SISD of 150m is achieved when the left-turn slip lane is clear, however is reduced to 84m when a left turning vehicle is *within* the slip lane.

As noted in the foregoing, the road design of the future Wallgrove Road realignment is still a work-in-progress, however it is evident that the 151m SISD requirement can be achieved. In terms of the reduced SISD when a left turning vehicle is *within* the slip lane, this "moment in time" will be short-lived. Based on the traffic generation potential of the subdivision, there will not be a constant procession of left turning vehicles into the subdivision. Once the left turning vehicle has entered the subdivision, the available visibility will return to 151m. Furthermore, a left turning entering vehicle does not automatically grant a left turning exiting vehicle right-of-way to pull out into the main road traffic flow. The left turning exiting driver must display caution at all times and wait until they are completely satisfied there is a sufficient gap in traffic flow before exiting, as per the NSW Road Rules. This arrangement is typical and commonplace in today's urban environment and considered acceptable.

With respect to *MU Group's* concern regarding the angle of exiting vehicles, this is simply rectified by the inclusion of linemarking, as illustrated in the screenshot image of the concept plan below. The extent of linemarking illustrated in the concept plan is based on the swept turn path requirements of an 8.8m long MRV truck, noting that the intersection has been designed to accommodate B-Triples. Larger trucks will therefore traverse over the linemarking which is also commonplace and acceptable in today's urban environment.



Proposed new "half seagull" intersection treatment

With respect to *MU Group's* concern regarding the offset distance between the proposed new subdivision intersection and the start of the right turn bay at the new Wallgrove Road & Cecil Road traffic signals, the left turning exiting driver must display caution at all times and wait until they are completely satisfied there is a sufficient gap in *both* traffic lanes before exiting.

A driver, knowing they are to make their way across two traffic lanes into the new Cecil Road right turn bay, would likely wait until *both* lanes are clear under free-flowing traffic conditions before exiting straight into the middle lane, rather than exiting into the kerbside lane and then merging into the median lane.

If, however, the traffic is stopped/queued or slow-moving, the driver would likely exit into kerbside lane initially, before merging into the median lane and then into the right turn bay at Cecil Road, noting that vehicle speeds are low.

Again, there is a balancing act between providing a suitable intersection offset distance and providing sufficient sight distance. The proposed intersection offset is considered acceptable in this instance.

Item 4

4. Traffic modelling using SIDRA modelling to understand the impact of the new development on the future TCS on the realigned Wallgrove Road and Elizabeth Drive should be provided for further assessment before TfNSW can provide further comments. The modelling should be done as a network for the following intersections for the year the signals/M12 will be completed scenario and 2036 scenario:
    a. Realigned Wallgrove Road / new site access road
    b. Realigned Wallgrove Road / Cecil Road
    c. Realigned Wallgrove Road / Elizabeth Drive

As requested by TfNSW, we have set up the SIDRA Network model of the following intersections using the base plan provided by TfNSW:

- realigned Wallgrove Road & proposed new subdivision access
- realigned Wallgrove Road & Cecil Road
- realigned Wallgrove Road & Elizabeth Drive

Furthermore, 2018 traffic volumes were also provided by TfNSW which were undertaken as part of the preliminary M12 investigation works. Those volumes were factored up using a 3% p.a. growth rate to determine the equivalent 2021 volumes.

The complexity is however, that the existing Wallgrove Road and Cecil Road carriageways are to be completely realigned, therefore significant assumptions need to be made with respect to redirecting existing traffic flow for the purposes of setting up the SIDRA model. For example:

- the existing M7 northbound on-ramp is currently accessed off the existing Wallgrove Road, some 550m north of Elizabeth Drive

- the existing Wallgrove Road & Elizabeth Drive intersection will become the new M7 northbound on-ramp

- Cecil Road currently intersects directly with Elizabeth Drive

- the future layout will see Cecil Road intersect with the new Wallgrove Road alignment

- the future layout will also see the new Wallgrove Road alignment intersect directly with Elizabeth Drive where Cecil Road currently intersects. This new intersection will also include the new M12 southbound on-ramp as the “fourth leg”.

Accordingly, there are a significant number of assumptions that need to be made with respect to the redirection of the existing traffic volumes onto the future road network layout. In my opinion, the assumptions made by myself may be inconsistent with TfNSW’s assumptions.

It is for this reason that countless requests have been made to TfNSW to obtain their redirected traffic volumes so we can undertake a reliable “base case” assessment of the future network. The associated traffic from the proposed subdivision proposal would then be added to the “base case” to determine the traffic impacts. To date, this data has not been provided.

Recent advice from TfNSW however, indicates that they have engaged an external consultant to undertake SIDRA modelling of the future road network in the vicinity of the site, *including* the traffic impacts of the subdivision proposal. I understand that the modelling has commenced, however to date, this data has not been provided.

In the meantime, by way of reference, Section 4 of the RMS *Guide to Traffic Generating Developments (2002) – Interpretation of Traffic Impacts* provides a guide as to the assessment of intersections and roadways. In particular, Table 4.2 from the RMS *Guide* provides thresholds and explanations for the various *Levels of Service.*

Table 4.2
Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

Table 4.4 also sets out the peak hour flows for one and two lanes of unidirectional travel and their corresponding *Level of Service.* It is desirable that intersections and roads operate at *Level of Service "C"* or better.

Table 4.4
Urban road peak hour flows per direction

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

In this regard, the M12 Motorway is a major piece of infrastructure within the greater Sydney road network, providing critical access to/from the new Western Sydney Airport which is currently under construction. It would be reasonable for the general public to assume that the proposed new road network, including the realigned Wallgrove Road and signalised intersections in the vicinity of the site, would have a design life of some 20 years before any upgrades would be required.

Reference to the Traffic & Parking Assessment Report submitted with the amended Application indicates that the indicative future uses on the site include a service station, fast food restaurants, recreation facilities (indoor, outdoor & major), tourist & visitor accommodation and an eco-tourist facility.

Based on the indicative cumulative floor area of 9,490m^2, the subdivision and its indicative future uses have the potential to generate in the order of 568 peak hour vehicle trips (IN and OUT, combined), which is based on a *very conservative* traffic generation rate of *6 peak hour trips per 100m^2*.

It is also pertinent to note that there is likely to be a proportion of *multi-purpose trips* to the site whereby visitors to the service station, employees, customers and guests of the recreation facilities and tourist accommodation, may also be customers of the fast food outlet, and vice-versa.

Furthermore, *passing trade* occurs when a person might visit the proposed service station and/or fast food restaurants on the site on their way home from work. That person is already travelling on the nearby road network, thereby not incurring an additional vehicle trip.

By way of comparison, if the general "commercial premises" traffic generation rate of *2 peak hour trips per 100m^2* was applied to the indicative cumulative floor area of 9,490m^2, the subdivision and its indicative future uses would have the potential to generate in the order of just 190 peak hour vehicle trips (IN and OUT, combined).

In practice therefore, the traffic generation potential of the subdivision is likely to be significantly *less* than the 568 peak trips suggested above.

It is therefore considered that the expected design life of the new road network layout will have the capacity to accommodate background growth as well as the associated traffic impact of the proposed subdivision.

Item 5

5. A swept path analysis for the largest vehicle accessing the site should be provided.

Please see attached the swept turn path of the longest vehicles that are anticipated to access the proposed subdivision, as follows:

- Design vehicle: 19m articulated semi-trailer
- Checking vehicle: 35m B-Triple

In addition to the two abovementioned vehicles, swept turn paths were also undertaken of an 8.8m long MRV "service vehicle" in order to determine the appropriate extend of linemarking required to delineate smaller vehicles into and out of the subdivision.

The kerb radii at the proposed new subdivision intersection are based on the swept turn path requirements of the B-Triple. Furthermore, the proposed new internal subdivision road and cul-de-sac-turning head has also been designed to accommodate the turn path requirements of the B-Triple. Importantly, the B-Triple is able to enter and exit the site in a forward direction at all times.

Item 6

6. Please provide more information on proposed footpaths / pedestrian access to the site along Elizabeth Drive and new Wallgrove Road. Pedestrian fencing will need to be provided to ensure pedestrians would be crossing at the designated crossing facilities.

I understand the proposal includes the provision of a 2.5m wide shared path along the Elizabeth Drive and new Wallgrove Road site frontages, thereby providing an attractive means of access for active and alternate transport users such as cyclists and those travelling by public transport. It is also envisaged that suitable pedestrian fencing will also ultimately be provided however it is considered that is a matter that can be conditioned accordingly.

Conclusion

In light of the foregoing, we conclude that the proposed road layout, which includes the proposed new "half seagull" site access intersection with priority controlled left-in/left-out, is an appropriate design solution that provides sufficient sight distances along the new Wallgrove Road alignment.

We also expect that, with respect to the information provided in this letter, the intersection of Wallgrove Road and Cecil Road is expected to have the capacity to perform at *Level of Service "C"* or better for many years to come.

Please do not hesitate to contact me on telephone 9904 3224 should you have any enquiries.

Yours sincerely

Chris Palmer
Executive Engineer B.Eng (Civil)
Varga Traffic Planning Pty Ltd

22 February 2019

Our Reference: SYD17/01529/03 (A25872763)
Department's Ref: SSD 8859

Director – Key Sites and Industry Assessments
Department of Planning & Environment
GPO Box 39
Sydney, NSW 2001

Attention: Chloe Dunlop

Dear Sir/Madam,

NOTICE OF EXHIBITION OF EIS FOR ELIZABETH DRIVE SUB-DIVISION, CECIL PARK 1111-1141 ELIZABETH DRIVE, CECIL PARK

Reference is made to Department's correspondence dated 22 January 2019, regarding the abovementioned application which was referred to Roads and Maritime Services (Roads and Maritime) for review and comment.

Since the proposed development involved construction of a deceleration lane along Elizabeth Drive which is a Classified State Road this Application triggers Roads and Maritime concurrence in accordance with Section 138 of the *Roads Act 1993*.

Roads and Maritime has review the submitted information and noted that the proposal involve subdivision of 14 lots which include demolition of existing structures, clearing of vegetation, stormwater works, civil works and road works. It is envisaged that complimentary commercial uses would include service station, fast food outlets, hotel/motel accommodation, industrial warehouses, medical centre, office space etc. subject to future development applications.

Roads and Maritime has reviewed the submitted information and does not grant concurrence under Section 138 of the *Roads Act 1993* for the proposed road works on Elizabeth Drive and provides the following comments for Department's consideration:

1. The subject development proposed construction of a service road to access three lots. Roads and Maritime does not support proposed service road based on road safety and network efficiency. It is advised to construct a deceleration lane instead of a service road to provide access to any future service station only.

2. The proposal included access to the fast food outlets via Elizabeth Drive. Roads and Maritime does not support any direct access to the fast food outlets from Elizabeth Drive since an alternate access is available through Local Road network (via Cecil Road). Therefore, except the service station all other access (including fast food outlets) should be provided via Local Road network. In this regard Roads and Maritime suggests physical separation to be provided within the site to comply with this requirement.

3. To access the service station from Elizabeth Drive a deceleration shall be provided. The proposed deceleration lane along Elizabeth Drive shall be designed to meet Roads and Maritime requirements, and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with AUSTROADS and other Australian Codes of Practice.

4. Access to the service station should be restricted with left in and left out access only via a deceleration lane. In this regard, it is requested to investigate and propose mechanism to restrict any right turn movements from the deceleration lane onto Elizabeth Drive

5. The deceleration may be constructed within the existing road reserve however land should be dedicated within the property boundary for any future relocation/construction of the deceleration lane. The land identified for deceleration lane should be identified as a separate lot in the subdivision plan and dedicated to Council as road.

6. Roads and Maritime does not support proposed roundabout in Elizabeth Drive at Cecil Road intersection. It should be noted that Roads and Maritime currently preparing a strategic road design for Elizabeth Drive within the vicinity where Cecil Road may be restricted with left in left out (LILO) movements only. However, as an interim measure it is advice to investigate the impact due to the subject development and propose mitigation measures at the subject intersection.

7. Proposed development would have an impact on the operation and Level of Service (LoS) at the intersection of Cecil Road & Access Road. Therefore, it is requested to analyse this intersection, determine the impact and suggest treatments to mitigate the impact.

8. It is requested to submit soft copy of the SIDRA network modelling to Roads and Maritime for review.

9. All road works and associated cost with the development must be borne by the applicant.

10. Roads and Maritime has previously vested a strip of land as road along the frontage of the subject property, as shown by grey colour on the attached Aerial – "X". Therefore, all buildings and structures together with any improvements integral to the future use of the site are to be wholly within the freehold property (unlimited in height or depth) along the Elizabeth Drive boundary.

    The proponent should be also be advised that the subject property is within a broad investigation area for the long term widening of Elizabeth Drive. The investigations have not yet advanced to the stage where options have been defined and accordingly it is not possible at this date to identify if any part of the subject property would be required to accommodate this proposal. However, there is a potential that the frontage of the site may be impacted. Further information on the project can be obtained from contacting Kate Lunney, Project Development Manager, on 1800 865 503 or at elizabethdrive@rms.nsw.gov.au.

Any inquiries in relation to this development application can be directed to Ahsanul Amin, on 8849 2762 or e-mail at development.sydney@rms.nsw.gov.au.

Yours sincerely,

Pahee Rathan
A/Senior Land Use Assessment Coordinator
Sydney Division – North West Precinct

12 November 2020

TfNSW Reference: SYD17/01529/04
Council Reference: SSD 8859

Department of Planning, Industry & Environment
GPO Box 39
Sydney, NSW 2001

Attention: Ania Dorocinska

Dear Sir/Madam

EXHIBITION OF AMENDED REPORT ON EIS FOR ELIZABETH DRIVE SUBDIVISION – 1111-1141 ELIZABETH DRIVE, CECIL PARK

Reference is made to the Department's correspondence dated 22 October 2020, requesting comments from Transport for NSW (TfNSW) on the amended report for the Environmental Impact Statement on the abovementioned application.

TfNSW has reviewed the submitted documents and provides the following comments for consideration:

1. TfNSW has safety and operation concerns with the proposed location of the access in relation to the proposed new traffic signals and would not support it for the following reasons:
   a. The proposed access to the site on the new realigned Wallgrove Road is located around a bend and TfNSW raises safety concerns with the sight distance at the proposed access road. A sight distance assessment should be provided to demonstrate the required sight distance is achieved.
   b. The traffic report p.11, shows a proposed left turn slip lane from the realigned Wallgrove Road onto the access road (access to the subject site), which also continues after the access road to form two lanes on the realigned Wallgrove Road continuing to the intersection with Elizabeth Drive. This will potentially cause significant safety and operational issues as traffic turning in and out onto and from the access road would assume these vehicles on the kerb side lane are turning left onto the access road, however, these vehicles may choose to continue to travel straight on Wallgrove Road. Further, visibility and sightlines for traffic exiting from the access road would also be restricted by traffic travelling along the kerb side lane before the proposed access road.
   c. The proposed access to the site is uncontrolled and the potential for conflict is high due to it being at a point where drivers are merging and diverging.

Transport for NSW
27 Argyle Street, Parramatta NSW 2150 | Locked Bag 5085, Parramatta NSW 2124
P (02) 8849 2666 | W transport.nsw.gov.au | ABN 18 804 239 602

2. TfNSW require the proposed access to the site on the realigned Wallgrove Road to be located to the farthest point of northern boundary of the site, away from the proposed intersection at Cecil Road.

3. A road safety audit is also required for the proposed access arrangement to the site given the above concerns.

4. Traffic modelling using SIDRA modelling to understand the impact of the new development on the future TCS on the realigned Wallgrove Road and Elizabeth Drive should be provided for further assessment before TfNSW can provide further comments. The modelling should be done as a network for the following intersections for the year the signals/M12 will be completed scenario and 2036 scenario:
    a. Realigned Wallgrove Road / new site access road
    b. Realigned Wallgrove Road / Cecil Road
    c. Realigned Wallgrove Road / Elizabeth Drive

5. A swept path analysis for the largest vehicle accessing the site should be provided.

6. Please provide more information on proposed footpaths / pedestrian access to the site along Elizabeth Drive and new Wallgrove Road. Pedestrian fencing will need to be provided to ensure pedestrians would be crossing at the designated crossing facilities.

The applicant is requested to submit the above requested information for further review before detailed comments can be provided. Once this information is received, TfNSW will review and respond accordingly.

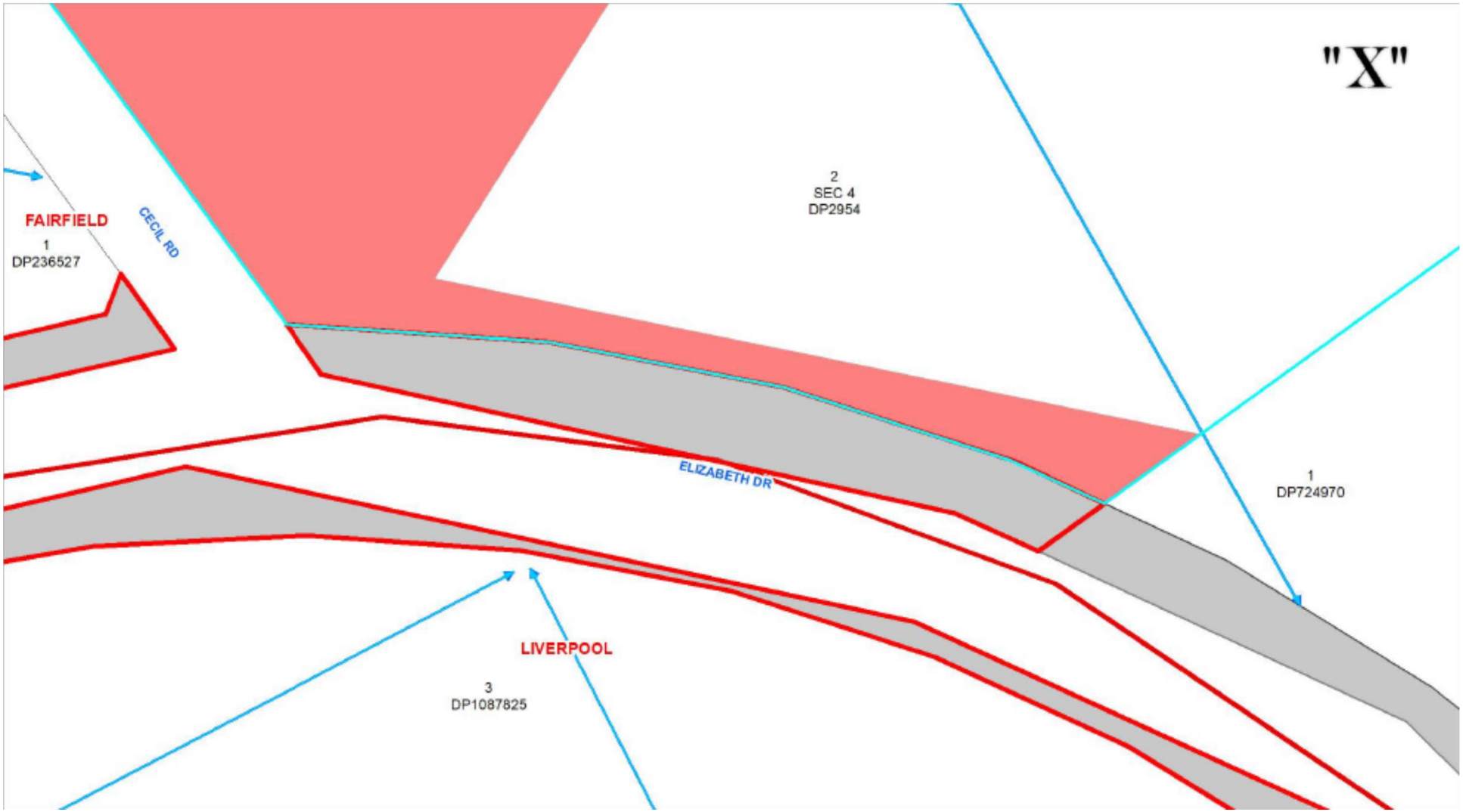
Additionally, TfNSW has previously vested a strip of land as road along the Elizabeth Road frontage of the subject property, as shown by the grey colour on the attached Aerial – "X".

Further, the applicant is aware the subject property is within the preferred corridor for the proposed M12 Motorway Project. It is noted the applicant has been liaising with the project team and should continue to do so in relation to any impacts.

If you have any further questions, Sandra Grimes, Land Use Planner, would be pleased to take your call on (02) 9563 8651 or please email development.sydney@rms.nsw.gov.au. I hope this has been of assistance.

Yours sincerely

Pahee Rathan
Senior Land Use Assessment Coordinator


"X"
FAIRFIELD
1
DP236527
CECIL RD
2
SEC 4
DP2954
ELIZABETH DR
1
DP724970
LIVERPOOL
3
DP1087825

PROJECT
1111-1141 ELIZABETH DRIVE, CECIL PARK

CLIENT
ELIZABETH DRIVE PTY LTD

1:1,500 @ A3

TITLE
CONCEPT PLAN

DRAWN	CHECKED	DATE	ISSUE
SB		**26/04/2021**	

MU GROUP
TRANSPORT AND INFRASTRUCTURE

Road Safety Audit Report

Proposed Development at 1111-1141 Elizabeth Drive, Cecil Park (SSD-8859)

Pre-Construction – Strategic Design

Issue 1: April 2021

Reference: 21_8_CPPL_RSA_REP_01

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The services undertaken by MU Group Consulting in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. MU Group Consulting has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

MU Group Consulting has prepared this report on the basis of information provided by Cecil Park Pty Ltd (Electric Pty Ltd) and others who provided information to MU Group (including Government authorities), which MU Group has not independently verified or checked beyond the agreed scope of work. MU Group Consulting does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Report Control Form

Revision History

Revision	Date	Prepared by	Reviewed by	Approval for issue by
1	16/04/2021	S.Ludenia	P.Greenland	*Draft*
2	23/04/2021	S.Ludenia	P.Greenland	P.Greenland
3				

Contents

1 Client Details

Table 1: Client Details

Client	Cecil Park Pty Ltd (Electric Pty Ltd)
Client address	166 Lane Cove Road Lane Cove West 2066 NSW
Project Manager / Sponsor	Ben Elias
Phone	0419 980 980
Client Representative	Varga Traffic Planning Pty Ltd
Address	Suite 6, 20 Young Street, Neutral Bay NSW 2098
Project Manager / Sponsor	Chris Palmer
Email	chris@vtp.net.au
Phone	02 9904 3224

2 Audit Statement

We, the undersigned, declare that we have reviewed the material and data listed in this report and identified the risks to road safety listed in Section 5. Reasons are given to explain why an identified item is considered a risk to road safety including crash type. The auditors listed are independent to the project.

Design or construction deficiencies that do not cause a safety problem are not listed.

It should be noted that while every effort has been made to identify potential risks to road safety, no guarantee can be made that every problem or deficiency has been identified.

It is recommended that identified risks to road safety be investigated and corrective actions implemented by the Project Manager.

Table 2: Audit Team Members

Role	Name	Auditor Level	ID Number	Signature	Date
Lead Road Safety Auditor	Peter Greenland	3	RSA-02-0272		16/04/2021
Road Safety Audit Team Member	Steven Ludenia	2	RSA-02-0803		16/04/2021

3 Audit Details

3.1 Description of Project

Cecil Park Pty Ltd (Electric Pty Ltd) is proposing a development at 1111-1141 Elizabeth Drive, Cecil Park consisting of 12 lots varying from 2500 to 6100 square metres in size. The site is bound by Elizabeth Drive to the south and the proposed new alignment of Wallgrove Road to the west. Access to the development is proposed at an unsignalised T-intersection with the proposed Wallgrove Road alignment allowing left-in, left-out and right-in movements. The right turn out of the development access road will be banned with the proposed geometry supporting this.

The proposal is considered a State Significant Development (SSD) and is covered under application SSD-8859.

3.2 Scope of Audit

The Road Safety Audit (RSA) is specifically for the intersection at the proposed development access road and the proposed Wallgrove Road alignment. The RSA aims to identify potential risks to road safety in the existing environment taking into account the proposed strategic design. This report has sought to identify and assess potential safety hazards that may impact on road user safety or lead to future incidents.

3.3 Considerations

Due to the greenfields nature of the proposal and Wallgrove Road alignment, a site inspection was not undertaken for this audit. The proposed posted speed limit on Wallgrove Road is 60km/h with a design speed of 70km/h in accordance with Austroads Guide to Road Design.

In order to identify safety risks at an early design stage, this audit was undertaken on the strategic design layout only for the proposed intersection. No vertical geometry has been taken into consideration for the purpose of this audit.

Given the strategic nature of the design proposal, pedestrian facilities were not yet defined on the design plan. Risks associated with pedestrians and cyclists at the access road intersection have not been identified but will require consideration in development of the design.

3.4 Audit Process

This road safety audit was carried out in accordance with Transport for NSW 'Guidelines for Road Safety Audit Practices' in conjunction with the Austroads Guide to Road Safety Part 6: Managing Road Safety Audits, Part 6A: Implementing Road Safety Audits.

Road Safety Audits are aimed at proactively identifying road safety issues and are a fundamental component of the Safe System approach. The findings of this audit have been prepared in consideration of Safe System requirements, particularly in relation to vulnerable road users such as pedestrians.

The Austroads publication Integrating Safe System with Movement and Place for Vulnerable Road Users provides guidance on the correlation of travel speeds, vehicle stopping distances and the impact forces to the human biomechanical limits indicates that fatal injury risk to pedestrians:

- Reduces by 75-80% when a driver chooses to travel at 30 km/h instead of 40 km/h
- Reduces by 90-95% when a driver chooses to travel at 30 km/h instead of 50 km/h
- Reduces by 75-80% when a driver chooses to travel at 40 km/h instead of 50 km/h

3.5 Audit Program

Table 3: Audit Program

Activity	Date
Commencement meeting	25/03/2021
Day site inspection	N/A
Night site inspection	N/A
Draft report issued	16/04/2021
Completion meeting	19/04/2021
Final report issued	23/04/2021

3.6 Commencement Meeting

A brief commencement meeting was held on Thursday 25th March 2021 via phone. Attendees were Chris Palmer and Steven Ludenia to discuss the background of the project and provide the auditors an understanding of the proposed design.

3.7 Information Supplied

Table 4: Information Supplied

Documentation	Date	Document Title
Design drawings	22/03/2021	AE Design Partnership Preliminary Strategic Design 1111-1141 Elizabeth Drive, Cecil Park Option 1
Design report		N/A
Previous Road Safety Audit		N/A

3.8 Site Inspections

At the time of this audit being undertaken the Wallgrove Road realignment had not yet commenced construction. Due to the greenfields nature of these proposals the site was not inspected when preparing this road safety audit.

3.9 Completion Meeting

A completion meeting was held on Monday 19th April 2021. The audit team presented the findings and discussed potential corrective actions with the design team that may assist in eliminating and reducing the risks identified. Attendees were Ben Elias, Chris Palmer, Peter Greenland and Steven Ludenia.

4 Risk Assessment

Table 5: Risk Matrix

Severity **Probability**	**Minor or property damage** A person who suffers no injury or only requires minor first aid treatment.	**Moderate** A person who attends an emergency department on the same day or on the day after a crash but was not killed or subsequently admitted to hospital.	**Serious** A person who is admitted to hospital on the same day or the day after a crash and did not die within 30 days of the crash.	**Fatal** A person who dies within 30 days from injuries received in a road traffic crash.
Weekly Is expected to occur in most circumstances.	**Medium**	**High**	**Extreme**	**Extreme**
Monthly Will probably occur.	**Medium**	**Medium**	**High**	**Extreme**
6 Monthly Might occur at some time.	**Low**	**Medium**	**High**	**Extreme**
Yearly Might occur but doubtful.	**Negligible**	**Low**	**Medium**	**High**
Every 5 years or less May occur but only in exceptional circumstances.	**Negligible**	**Negligible**	**Medium**	**High**

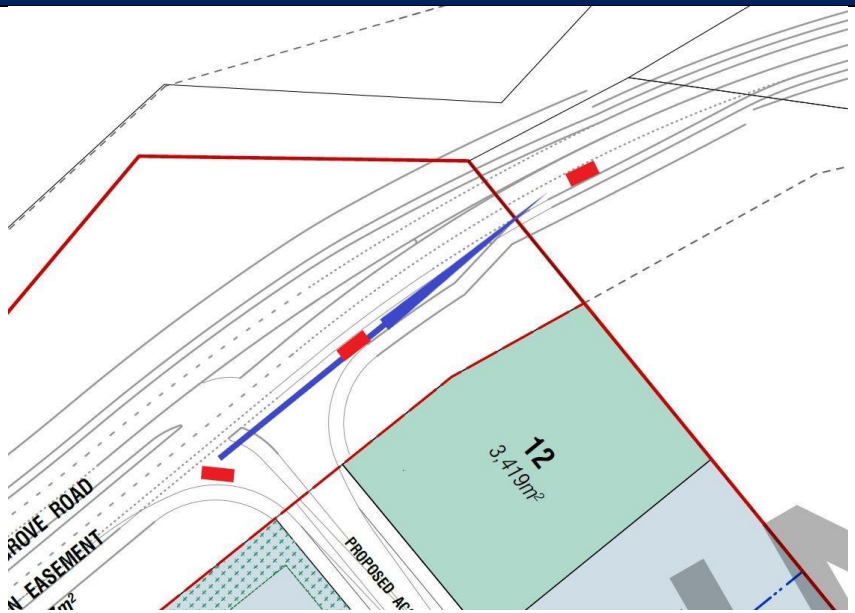
Table 6: Level of Prioritisation Based on Risk Rating

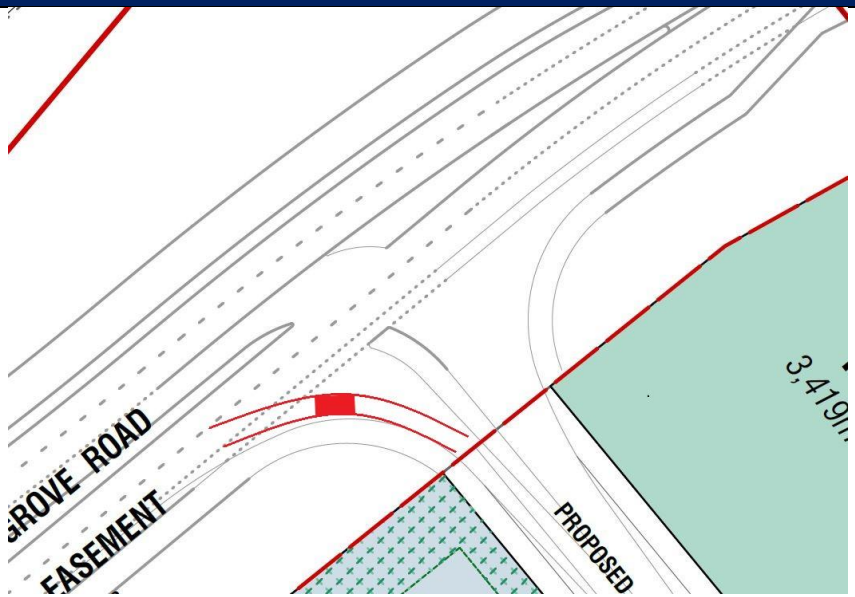
Risk Rating	Level of prioritisation
Extreme	Should be corrected immediately
High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
Low	Should be corrected at a suitable time, if cost is low.
Negligible	Should be corrected at a suitable time, if cost is low.

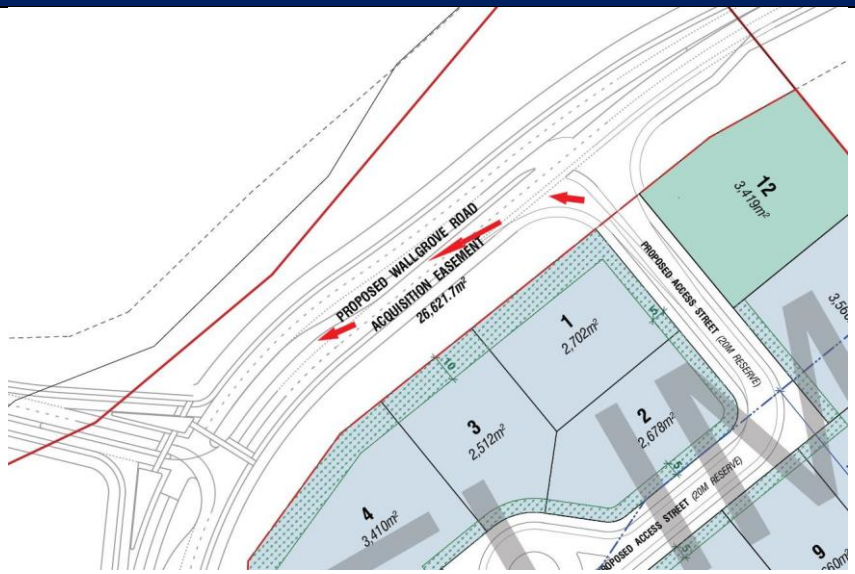
5 Road Safety Risks

The Road Safety Audit findings are documented in this section where the table below provides details of the risks to road safety identified by the audit team in relation to the supplied auditable material in conjunction with the site inspection, if applicable.

The identified risks are assigned road safety categories to assist in the management of corrective actions by the Project Manager (also known as Project Sponsor). Each risk is assessed with a rating as Extreme, High, Medium, Low or Negligible, derived as a function of Probability and Severity, as outlined in the tables of Section 5.

Ref No.	Photos / Site Description / Safety Issue	Description of risk to road safety (Reason why this is a safety issue)	Road Safety Audit Category	Probability	Severity	Risk Rating
1	 *Design plan showing left turning vehicle from proposed site access.* *Austroads requirement (Guide to Road Design Part 4A, Table 3.2) for SISD at 70km/h: 151m* *SISD Achieved in current design with left turning vehicle: 84m* *SISD Achieved in current design with left turning vehicle: 150m*	Safe intersection sight distance for left turning vehicles out of the access road is not achieved to southbound vehicles in Wallgrove Road. Drivers may become impatient and pull out into the southbound travel lane on Wallgrove Road with insufficient gaps in the traffic causing rear-end and intersection type crashes. This issue could be exacerbated by the vertical alignment on Wallgrove Road (not assessed under this safety audit) as well as the presence of vehicles turning left into the development. It is noted that other options have proposed an intersection further north on Wallgrove Road. This does not improve the safety risk described above due to the presence of the horizontal curve in Wallgrove Road and the terminating leg of the T-intersection being on the inside of the curve.	Intersections	Yearly	Serious	Medium

Ref No.	Photos / Site Description / Safety Issue	Description of risk to road safety (Reason why this is a safety issue)	Road Safety Audit Category	Probability	Severity	Risk Rating
2	 *Design plan showing left turning vehicle following kerb line and stopping at the give way line.*	The width and kerb return radii at the access road exit appears to be excessive. This will result in vehicles stopping at the give way line at an undesirable angle to oncoming traffic, increasing the likelihood of crashes highlighted in Risk 1. Drivers may also attempt to turn two abreast given the significant width at the intersection or illegally make a right turn out of the proposed access road resulting in right-through and rear-end crashes.	Intersections	Yearly	Serious	Medium

Ref No.	Photos / Site Description / Safety Issue	Description of risk to road safety (Reason why this is a safety issue)	Road Safety Audit Category	Probability	Severity	Risk Rating
3	 *Design plan showing vehicle path from the site access to the right turn bay for Cecil Road.*	Turning left out of the development access road and right into Cecil Road requires attaining a suitable gap in the southbound traffic on Wallgrove Road and then changing across one lane to enter the right turn bay. The distance available to carry out this sequence of manoeuvres is insufficient, and drivers may have to force their way through. This disruption to the traffic flow may be worsened if the right turn bay has several vehicles already waiting in it. Rear-end and lane change crashes could occur as a result of this geometry.	Intersections	6 Monthly	Moderate	Low

6 Completing the Road Safety Audit

The project manager / sponsor is recommended to take the following steps to complete the road safety audit process:

- Attend the completion meeting
- Review the report
- Accept the Road Safety Audit report
- Produce a corrective action program (Template attached as Appendix A)
- Implement corrective actions
- Close the corrective action program.

Further details are available in the Guidelines for Road Safety Audit Practices[1].

[1] NSW Centre for Road Safety, Roads and Traffic Authority of New South Wales (2011), *Guidelines for Road Safety Audit Practices*, Sydney.

7 Confidentiality and Copyright

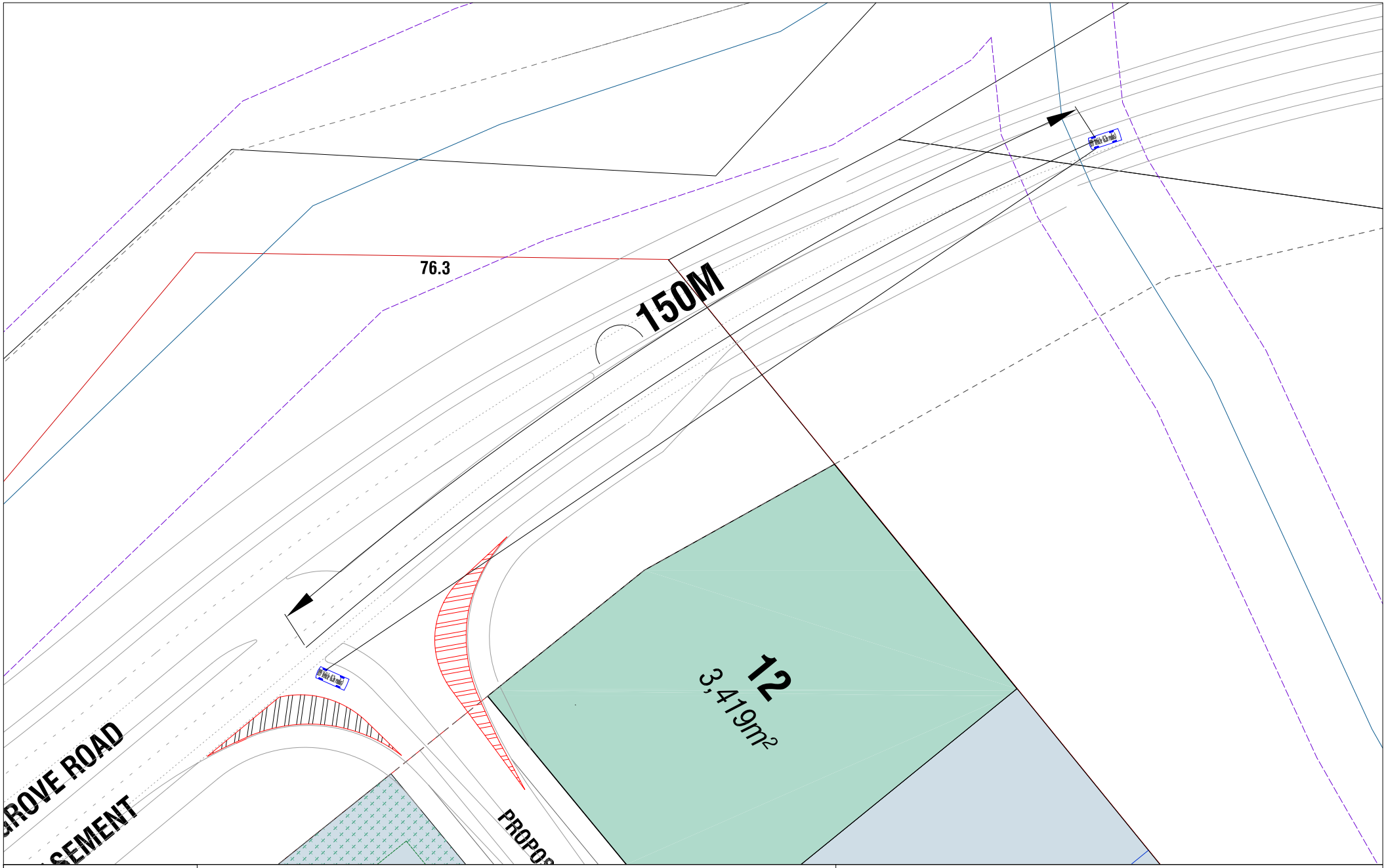
The information in this Road Safety Audit report is confidential and copyrighted. This document does not form part of a contract.

Appendix A – Corrective Action Response Form

Project Name: 1111-1141 Elizabeth Drive, Cecil Park (SSD 8859)			
Audit Ref No	**21_8_REP_01**	**Audit stage**	**Strategic Design**

Ref No.	**Corrective Action Response (CAR)**	**Priority for action (To be completed by Project Manager)**	**Residual risk (if any)**
1		Choose priority.	
2		Choose priority.	
3		Choose priority.	

Project Manager / Sponsor Name		Signature	
Concurring Client Name		Signature	



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20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SUBDIVISION DEVELOPMENT

N

DRAWING TITLE
SIGHT DISTANCE CHECK
Vehicles Turning out of Access Road onto Future Wallgrove Road

1:800 @ A4

ADDRESS
1111-1141 Elizabeth Drive,
CECIL PARK

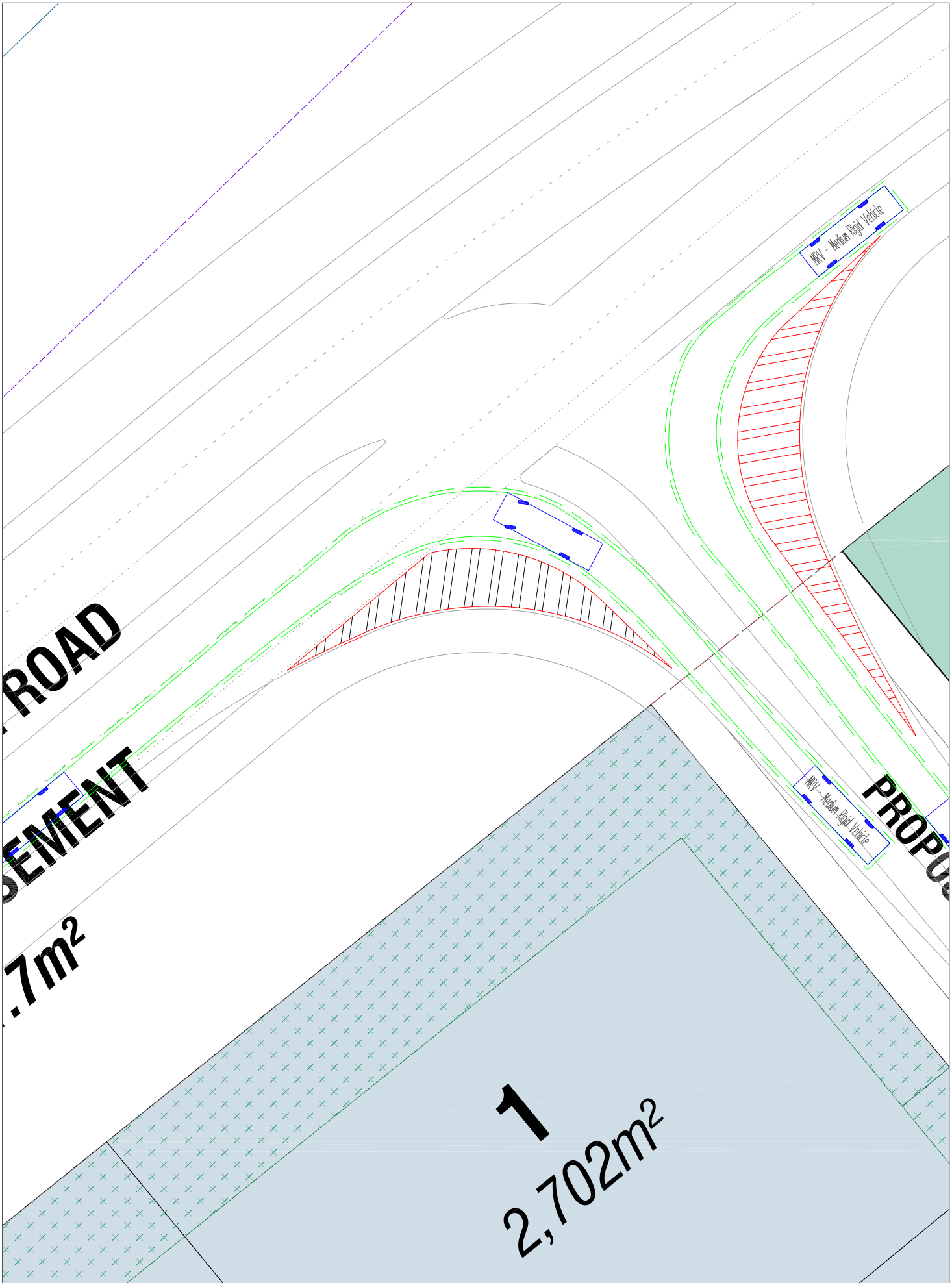
PROJECT NO.
20355

DATE DRAWN
2021-5-3

REVIEWED
CHRIS PALMER

PREPARED
DONALD LEE

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



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PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SUBDIVISION DEVELOPMENT

N

DRAWING TITLE
8.8M MRV TRUCK TURNING PATH
Exiting Proposed Access Road

1:400 @ A4

ADDRESS
1111-1141 Elizabeth Drive,
CECIL PARK

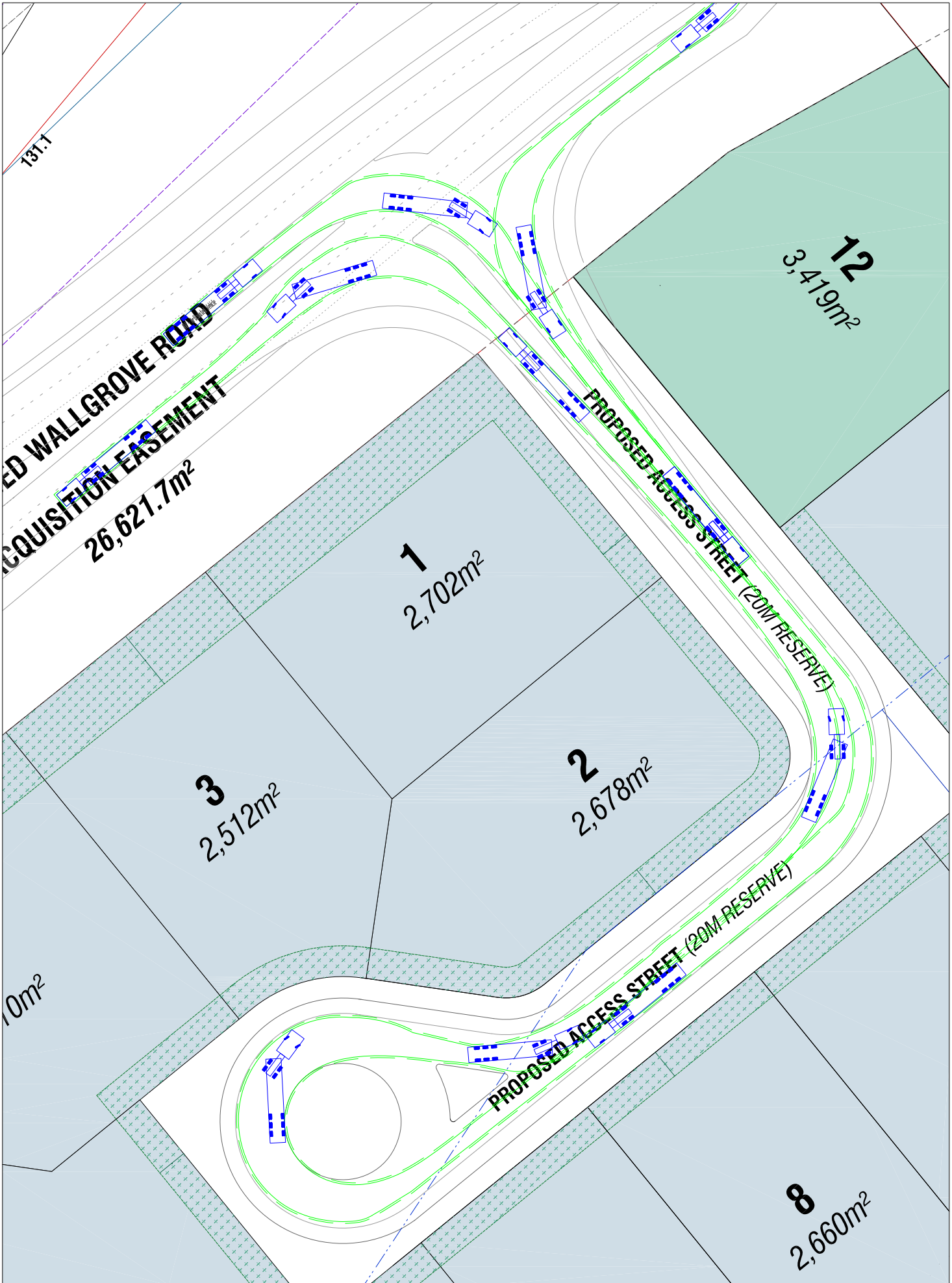
PROJECT NO.
20355

DATE DRAWN
2021-4-21

REVIEWED
CHRIS PALMER

PREPARED
DONALD LEE

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



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Sydney, Australia

PROJECT
SUBDIVISION DEVELOPMENT

N

DRAWING TITLE
19M SEMI-TRAILER TURNING PATH 1:800 @ A4
Entering/Exiting Proposed Access Road

ADDRESS
1111-1141 Elizabeth Drive,
CECIL PARK

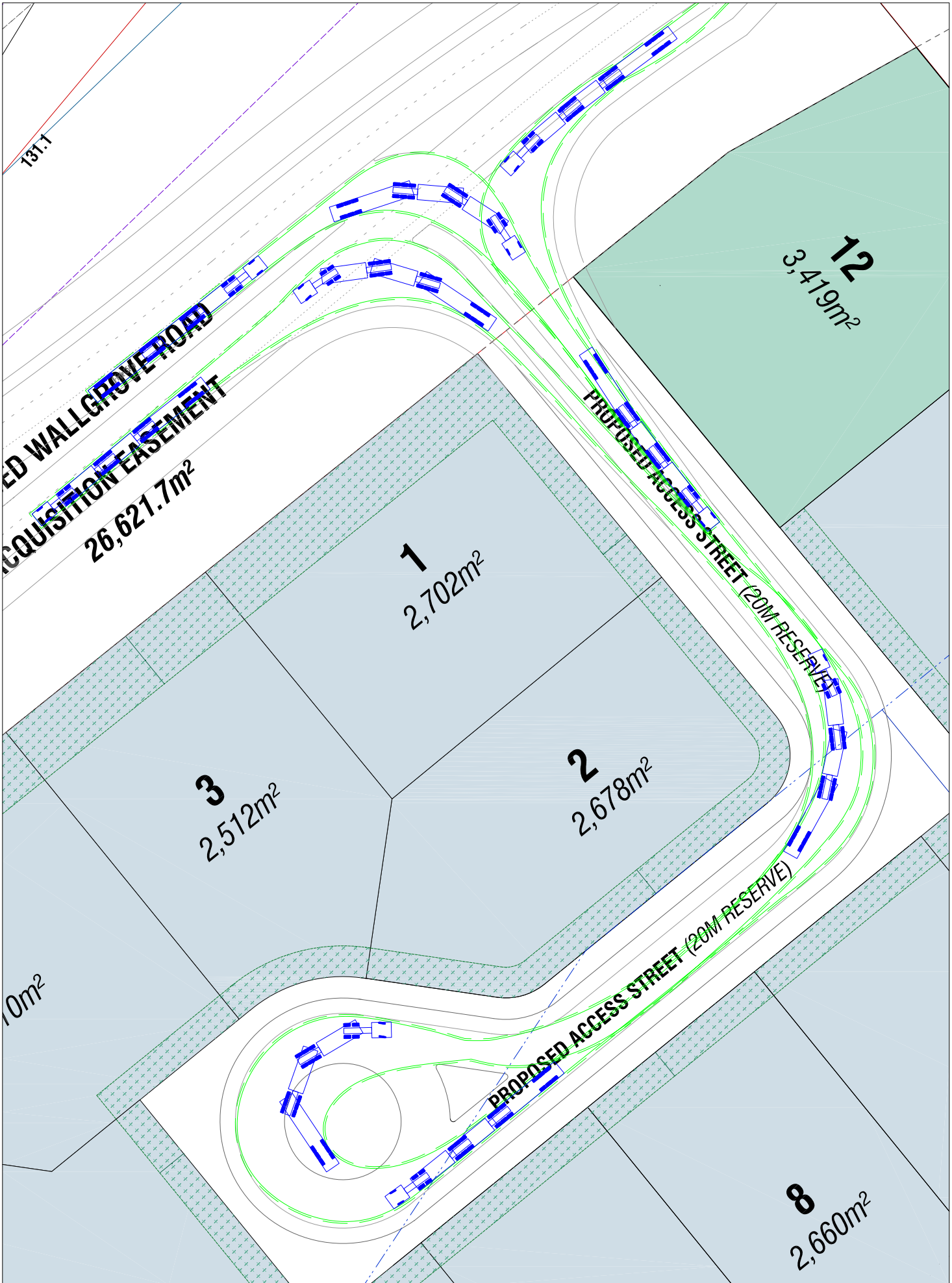
PROJECT NO.
20355

DATE DRAWN
2021-4-21

REVIEWED
CHRIS PALMER

PREPARED
DONALD LEE

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



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PO Box 1868
Neutral Bay, NSW 2089
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Sydney, Australia

PROJECT
SUBDIVISION DEVELOPMENT

N

DRAWING TITLE
B-TRIPLE (AUSTROADS) TURNING PATH 1:800 @ A4
Entering/Exiting Proposed Access Road

ADDRESS
1111-1141 Elizabeth Drive,
CECIL PARK

PROJECT NO.
20355

DATE DRAWN
2021-4-21

REVIEWED
CHRIS PALMER

PREPARED
DONALD LEE

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants