Ashwin Management
Services P/L

4 Duneba Place,
Frenchs Forest NSW 2086

Date: 31 March 2016

General Manager

Lane Cove Council

48 Longueville Road

Lane Cove NSW 2066

Attention Geoff Douglas, Director Major Projects

Your Ref: 8308/16

RE: RMS Comments, DA 15/198, 2-18 Rosenthal Avenue
Proposed Car Park Redevelopment

Dear Geoff,

I refer to Council's letter dated 11 December 2015, regarding the abovementioned Application which was referred to Roads and Maritime Services (Roads and Maritime) for comment in accordance with Clause 101, 102 & 103 of the State Environmental Planning Policy (Infrastructure) 2007, to their response dated 9 February 2016 in which they provided comments for Council's consideration in the determination of the application and to your request to provide advice on each comment.

Introduction

Each of the RMS comments has been considered and the following responses below to those comments, and where appropriate draft recommendations are provided for your further consideration.

The Traffic Impact Assessment Report (Traffic Report) was prepared in support of a master plan type staged development application.

The proposed development would then be subject to more detailed assessment in subsequent stages. Such detailed assessment includes all the engineering necessary for access to and from the proposed development car park.

Council has undertaken sophisticated simulation modelling of the road network using RMS approved Paramics micro simulation software including assessing the traffic impact the proposed development on the road network. It is considered entirely appropriate for the Applicant to rely on that modelling in the master plan application in proposing a staged development.

The Application seeks to incorporate a car park for up to 500 spaces, increasing the capacity of the current car park from 176 spaces and meeting the increased demand placed on the Village through current LEP planning outcomes. Whilst network improvements can and will occur over time and management regimes on the operation of the car park may also change over time, it must be borne in mind that will not be possible to increase parking on this site post development for several generations.

RMS Comment

1. The Traffic Impact Assessment report indicated that existing Rosenthal Avenue Carpark consists of 176 spaces when operating at its full capacity. However, there was no indication of how the 176 spaces will be provided to the shoppers during redevelopment of the site.

   Response:

   As the master plan application does not seek approval for construction activities the draft construction traffic management plan was not included in the Traffic Report.

   Although the development is expected to be progressed through a design and construct contract and the sequencing outlined in the draft traffic construction management plan now included in Attachment 1 for information only may change, the draft plan sets out how the development is expected to proceed.

   As you are aware, Council reopened the Little Street car park increasing the capacity of that site from 86 to 200 spaces. During the 15 months that car park was out of operation, Council proactively made use of some underutilized private parking in the town centre and introduced a number of other management measures to minimize the impacts from any loss of parking.

   A 2 stage construction sequence involving a loss of half the parking currently available on Rosenthal Avenue Car Park can be managed with recent increases in parking with Market Square and Little Street car parks and a similar proactive approach by Council. The 2 stage approach also limits the period during which loss of parking on the site occurs.

   Recommendation

   A condition be included requiring construction management plan be included in

subsequent stages relating to the construction of the car park setting out the construction sequencing which minimizes the impact from the loss of parking on the site.

RMS Comment

2. In Section 3.6.5 the peak traffic generation from the proposed redevelopment has been estimated based on 95% highest traffic reported peak hour trip generation at 402 trips, but 100% highest peak hour traffic generation in the PM peak is 636 trips. Therefore, the proposed roundabout intersection should be modelled based on 'worse case' scenario of 1237 trips rather than 1003 trips.

Response:

Although the Traffic Report could have provided a more detailed justification for adopting 95% of the trip generation recorded by Position Overstay Devices (POD's) located in each car space in the existing Rosenthal Avenue Car Park, the following observations are made:

a) From Figure 1 of the Traffic Report, 100% of trips (647 trips) to / from a 176 space car park means **every space** would average turnover of 1.83 times per hour in the PM peak equivalent to an average of each space being reoccupied every 32 minutes. This is considered an unreasonable expectation in practice indicating some possible outlier results in the data sets recorded by the PODS.

b) POD's do not record whether or not a vehicle has left the car park or has reparked;

c) Usage of the Rosenthal Car Park was influenced by loss of parking during the reconstruction of the Little Street Car Park including, as part of managing parking during that period, the number of 1 hour parking spaces were increased;

d) The Rosenthal Car Park is expected to operate in a similar manner to Market Square car park with 3 hours free parking after which parking charges are applied using ticketless parking controls, resulting in lower trip generation rates;

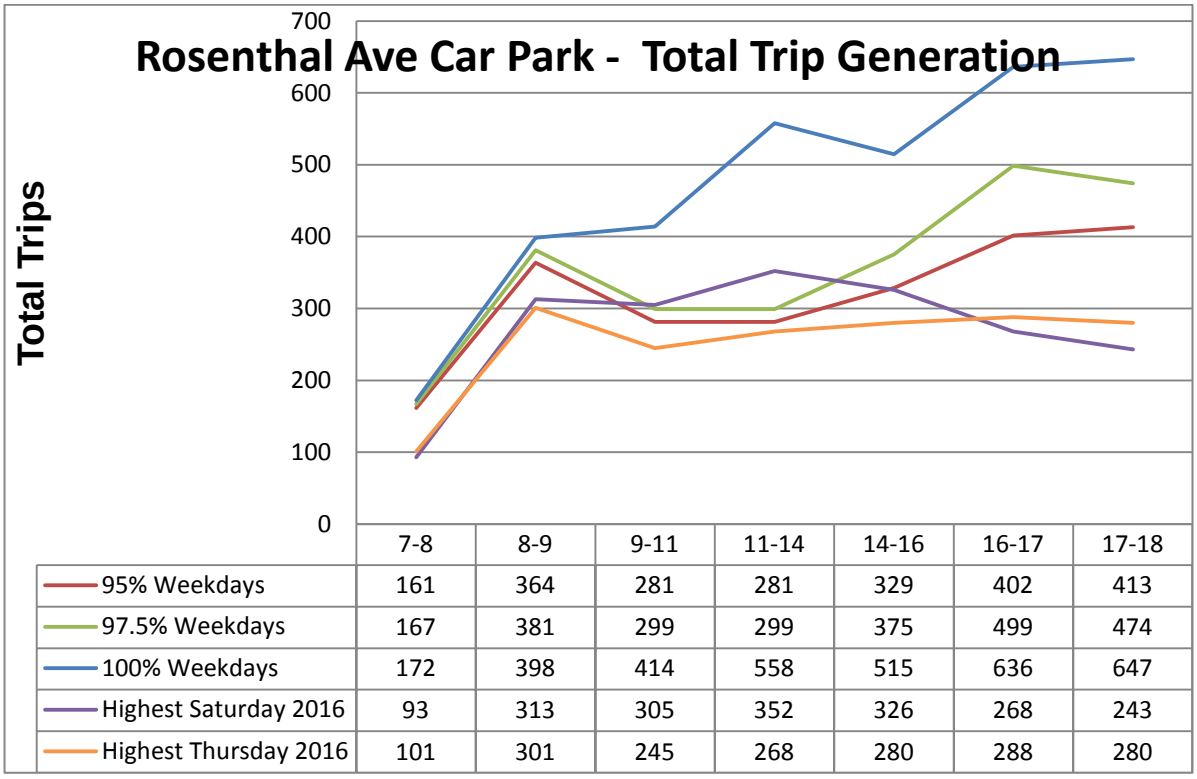
e) From Figures 1 and 2 of the Assessment Report, there is strong correlation between 95% and 97.5% of all trips.

A further review of the usage of the Rosenthal Avenue Car Park post the opening of the Little Street Car Park has been undertaken for Thursdays and Saturdays over a 7 week period commencing 4 and 6 February 2016 respectively. The results have been added to the graph previously provided as Figure 1 in the Traffic Report as set out in Figure 1 below.

It can then be seen that whilst the highest trip generation for a Thursday during this 7 week period is generally consistent with, albeit slightly lower than the 95%

assessment range of all trips used in the data used to produce Figure 1 in the Traffic Report.

It can also be seen that the highest trip generation for a Saturday morning during this 7 week period is generally consistent with, albeit slightly higher than the 95% assessment range of all trips used in the data used to produce Figure 1 in the Traffic Report for weekday usage.



	7-8	8-9	9-11	11-14	14-16	16-17	17-18
95% Weekdays	161	364	281	281	329	402	413
97.5% Weekdays	167	381	299	299	375	499	474
100% Weekdays	172	398	414	558	515	636	647
Highest Saturday 2016	93	313	305	352	326	268	243
Highest Thursday 2016	101	301	245	268	280	288	280

Figure 1 – Rosenthal Avenue Car Park Total Hourly Trip Generation

Table 1 below provides a snapshot of the number of vehicles entering and leaving the two (2) access points for the Rosenthal Car Park on Thursday 17 March 2016. When compared to the POD's data it is evident that the recorded trips include vehicles entering and leaving the car park for kiss and ride type trips or when a space was not found.

Rosenthal Ave Counts Thursday 17 March 2016									
	Birdwood		Rosenthal		Combined		Hourly		
	In	Out	In	Out	In	out	In	out	Trips
2:00	45	30	30	30	75	60			
2:15	31	17	16	23	47	40			
2:30	24	19	13	23	37	42			
2:45	29	17	17	30	46	47			
							205	189	394
15:00	20	15	8	20	28	35			
15:15	32	18	11	22	43	40			
15:30	41	37	23	34	64	71			
15:45	30	18	13	30	43	48			
							178	194	372
16:00	25	23	22	22	47	45			
16:15	18	14	12	29	30	43			
16:30	30	20	18	23	48	43			
16:45	27	24	16	29	43	53			
							168	184	352

Table 1 – Rosenthal Av Car Park Observed PM Trip Generation Thurs 17/3/16

The results demonstrate that Thursday PM peak hour trip data including trips leaving the car park without first parking fall well within the 95% data range

This additional review of POD's data confirms that it is appropriate to base the trip generation on 95% of data recorded from POD's in the existing Rosenthal Avenue car park.

Whether 95% or 97.5% is adopted, the estimated trip generation is within the 1,200 trips used in the Paramics future year modelling for both Birdwood Avenue traffic lights and Coxs Lane 2021. Accordingly the appropriate data has been used.

When a store such as Coles is relocated, much of the new store's business will be derived from customers who previously used their existing store.

Whilst a peak trip generation of 4.6 /100 m^2 GFA has been applied to the "new" traffic, no allowance has been made for network trips to the existing Coles supermarket which will continue along Burns Bay Road or for any reduction in supermarket based trips likely from the Austin Street / Sera Street catchment which may divert from using the existing Coles car park to the Market Square car park.

Recommendation

That Council and RMS accept that the 95% highest traffic reported peak hour trip generation is an appropriate indicator of the typical peak hour trip generation of the existing car park.

RMS Comment

3. Coxs Lane is to be widened (as per Lane Cove Council LEP) prior to the opening of the Rosenthal Avenue carpark to cater for the increased traffic expected from the proposed development and other nearby developments.

Response:

It is understood that this requirement only relates to widening the 3m wide sections set aside in the Part C – Residential Localities of the DCP for Locality 2 - Finlayson Street - Blocks 1 and 2 between Finlayson Avenue and Birdwood Avenue and does not include implementation of proposed changes to the Epping Road / Coxs Lane intersection.

It is therefore expected that this RMS requirement would be included as a condition of consent.

Recommendation

A condition of consent be included to require that the 3m wide sections set aside in the Part C – Residential Localities of Council's DCP for Locality 2 - Finlayson Street - Blocks 1 and 2 between Finlayson Avenue and Birdwood Avenue be completed prior to the opening of the Rosenthal Avenue car park to cater for the increased traffic expected from the proposed development and other nearby developments.

RMS Comment

4. In Section 4.5 regarding Loading Dock, it has been mentioned that all vehicles will enter from Rosenthal Avenue via Birdwood Avenue and leave via Rosenthal Avenue and Burns Bay Road. However, the submitted Plans (attachment 2) show that trucks will enter/exit the site from same access located in Rosenthal Avenue at Finlayson Street. Therefore, more clarification is requested in this regards.

Response:

Section 4.5 correctly described that the loading dock located off Rosenthal Avenue will be accessed from Rosenthal Avenue (arriving) via Birdwood Avenue.

Attachment 2 shows the location of the loading dock located off Rosenthal Avenue to the north of Finlayson Avenue.

Section 4.5 also references the swept path analysis prepared by TTM indicting that the relevant sized trucks will travel to the Rosenthal Avenue loading dock via Birdwood Avenue and then will leave the dock using Rosenthal Avenue and Burns Bay Road.

The relevant sizes based on the potential retail users are:

- Tenancy 1 (larger Retail) - semi trailer 17m in length; and
- Tenancy 2 (smaller Retail) – HRV, 12.5m in length

Trucks will not be permitted to undertaking U turn movements across Rosenthal Avenue from the loading dock nor at the Finlayson Avenue / car park entry roundabout.

Recommendation

Conditions of consent be included requiring that:

a. The Loading Dock must only accessed by vehicles approaching the Development via Birdwood Avenue and are to depart the Loading Dock via Burns Bay Road.

b. Trucks accessing the Loading dock for Tenancy 1 (larger Retail) to be limited to semi trailer 17m in length and for Tenancy 2 (smaller Retail) to be limited to Heavy Rigid Vehicle 12.5m in length

5. The Traffic Impact Assessment report should include a detailed SIDRA output report highlighting the queue length for each movement on each approach of the proposed new roundabout. The SIDRA output should show if the queue length would affect any other nearby intersections or whether the queue will extend back a significant distance within the proposed carpark.

Response:

A detailed SIDRA analysis would normally be undertaken in support of the detailed stage application once the configuration of the proposed car park access has been designed including and any changes to other legs of the roundabout.

At the master plan stage, the Paramics modelling included trips from a proposed redevelopment of the Rosenthal Avenue Car Park. In particular, the modelling undertaken in support of a signalised intersection at Longueville Road / Birdwood Avenue and for Coxs Lane to 2021 were both premised on 1200 trips evenly split to / from the proposed development.

The proposal relocates the access to the car park away from the Longueville Road / Birdwood Avenue lights. Further, the signalised intersection at Birdwood Avenue and recent adjustments to the lane configuration of Longueville Road / Epping Road intersection has significantly improved traffic flows in this area.

Recommendation

That a condition of consent be included in support of any subsequent application involving access to the car park, requiring that a detailed SIDRA output report be submitted for the AM, PM and weekend peak hours with up to date traffic data highlighting the queue length for each movement on each approach of the proposed new roundabout incorporating any network improvements required. The SIDRA output should show if the queue length would affect any other nearby intersections or whether the queue will extend back a significant distance within the proposed carpark.

RMS Comment

6. The proposed roundabout should be designed as per "Guide to Road Design Part 4B" and other associated supplements as found on the Roads and Maritime internet.

Response:

It is expected that this design requirement would become a condition of consent dealing with subsequent stages involving access to the car park.

Recommendation

A condition of consent be included in support of any subsequent application involving access to the car park, requiring that the proposed roundabout be designed in accordance with "Austroads Guide to Road Design Part 4B: Roundabouts" and other associated supplements as found on the Roads and Maritime Services internet.

RMS Comment

7. In Section 6.1 Council conducted a SIDRA analysis of the proposed roundabout for weekday PM peak based on 1076 trips. This analysis should be based on the worst case scenario trips of 1237 trips.

Response:

See reasons as set out on the response to RMS comment 2 and recommendation in 5 above.

RMS Comment

8. In Section 6.1 even though the report has mentioned that AM peak would generate around 400 trips which is less that the PM peak. However, the proposed roundabout should be modelled considering higher traffic flow along Rosenthal Avenue during AM peak compared against PM peak. The same principle would also apply for modelling this intersection during Saturday morning peak.

Please note that according to RMS most recent *Technical Direction TDT 2013104a* the retail development has its highest traffic generation during the weekends.

Response:

As discussed in response to RMS comment 5 above, a detailed SIDRA analysis would normally be undertaken in support of the detailed stage application once the configuration of the access has been designed.

In regards to Saturday morning peak, Figure 3 of the Traffic Report analysed the existing trip generation of the Rosenthal Avenue Car Park and found it to be generally lower than weekday volumes.

This is largely due to the employment influences in Lane Cove and Lane Cove West. Coupled with the reduction in weekday employment traffic, Saturday peak hour traffic is not of concern.

It must be remembered that Coles as the likely major tenant for the supermarket component would be relocating their premises from Burns Bay Road.

RMS Comment

9. In Section 6.1 there was no supporting data regarding the impact of proposed development during existing AM peak traffic on Rosenthal Avenue which already experiencing queue travel along Burns Bay Road. Therefore the statement in paragraph 5 "proposed roundabout intersection with Rosenthal Avenue will operate satisfactorily" cannot be supported at this stage unless the subject intersection is modelled during AM, PM and weekend peak hours with up to date traffic data. The data used are prior to installation of Traffic Lights at Longueville Road and Birdwood Avenue. The modelling should also take into consideration the multiple developments along Birdwood Avenue and Finlayson Street.

   Response:

   Please refer to the response and recommendation to RMS comment 5 above.

   The Paramics modelling has taken into account additional residential development as well as the proposed Rosenthal Development.

   This model also was recently used in assessing the traffic impacts for the Traffic Lights at Longueville Road and Birdwood Avenue.

RMS Comment

10. In Section 6.3 & 7.3 there was no reference as to whether a pedestrian pathway would be included around the circumference of the proposed development. Further clarification is required in regards to the pedestrian pathways and to any proposed pedestrian crossing locations (with the exception of Finlayson Street

crossing, detailed in Section 7.5).

Response:

For clarity, Section 7.3 deals with the pedestrian link around the site and linking with the pedestrian overbridge. This pedestrian pathway is external to the building commencing at Birdwood Lane / Birdwood Avenue, connecting with the proposed overbridge and extending along the Rosenthal Avenue frontage as part of the public domain works.

Importantly this pathway is located above the Loading Dock and above the Public Car Park entry. There is therefore not necessary to also include an at grade foot path along the Birdwood Avenue / Rosenthal Avenue facade given the potential conflicts with both the loading dock and car park entry.

Section 6.3 explained why pedestrian movements in the vicinity of the car park entry, facilitated by a pedestrian crossing in the northern leg of the proposed roundabout at Finlayson Avenue, are not supported.

Section 7.5 explains why at grade pedestrian movements approaching the development need to cross Finlayson Avenue and Rosenthal Avenue at Rosenthal Lane.

No objection would be raised if a pedestrian crossing at the northern end of Birdwood Lane were considered post development, subject to the normal warrants being satisfied.

RMS Comment

11. In Section 6.3 it is stated that "a pedestrian crossing on the northern leg of Rosenthal Avenue is not supported due to safety reasons", it should be noted that all legs of the intersection will be highly used. Importance should be given to all the legs of the subject intersection to determine whether alternative pedestrian crossing is required.

Response:

For the reasons set out in Point 10 above, provision for at grade pedestrian movements in the vicinity of the roundabout must be limited to the west side of Rosenthal Avenue and along Finlayson Avenue. There is no reason for introducing pedestrian movement conflicts into the vicinity of the car park entry and provision for pedestrian crossing of Rosenthal Avenue on both the north and south legs of the roundabout is not supported.

It is for safety reasons that pedestrian movements between the proposed development and the western side of Rosenthal Avenue or Finlayson Avenue or Birdwood Avenue west of Rosenthal Avenue be directed to/from Rosenthal Lane or the pedestrian overbridge.

RMS Comment

12. A pedestrian overbridge has been proposed in Rosenthal Avenue; however, there is no indication of the height of this bridge. Consideration should be given to accommodate all types of vehicles requiring movements along Birdwood Avenue / Rosenthal Avenue. The overbridge must be built to accommodate for the mobility and vision impaired and parents with prams and an appropriate alternative is to be considered in the event of an elevator breaking down.

Response:

As the proposed pedestrian overbridge is an infrastructure facility under S94 (1) SEPP (Infrastructure) 2007 – Reg 94, the details will be considered under a Part 5 application and therefore does not form part of the Master Plan Application. Its final level will be determined as part of the base building design in a subsequent application.

Notwithstanding it was appropriate that preliminary investigations be undertaken to set the nominal deck level at RL 80. The existing CL surface is RL 73.48. Allowing say for 1m deck and superstructure, 5.4m clearance should be available. The proposed bridge deck and clearance parameters relevant to this application were covered in Sections 3.1, 3.2 and 3.7 of the SEE.

It would be appropriate that a condition of consent relating to the pedestrian pathway include a requirement that connections between the proposed development and any future footbridge be designed to achieve a minimum bridge clearance of 4.8m to Rosenthal Avenue, given that Rosenthal Avenue is not a major truck route for oversized trucks.

Whilst the existing topography does not facilitate at grade compliance with AS 1428.1, the proposed bridge level achieves disabled compliant access from Birdwood Lane and from the proposed Public Domain space on top of the development to current and future residential apartments along Finlayson Avenue and Birdwood Avenue.

In the event of a breakdown of the lift, in noting that stairs adjacent to the lift are proposed, alternate access to Rosenthal Avenue is available via the Public Domain pathway and Rosenthal Lane.

Recommendation

A condition of consent be included requiring the pedestrian pathway linking Birdwood Lane with the proposed footbridge over Rosenthal Avenue to be designed to meet the requirements of As 1428.1 and to achieve a minimum bridge clearance of 4.8m to Rosenthal Avenue.

RMS Comment

13. The potential increase in the volume of vehicles dropping off/ picking up bus commuters who would utilise Epping Road Interchange has not been considered. It is expected that the proposed carpark will be advantageous for

these types of movements as the carpark would be a safe option for pedestrian connections to Longueville Road which does not exist at this moment. A study is required to identify the expected vehicle volumes and pedestrian movements.

Response:

The relationship of the proposed development with the Longueville Road Bus Interchange was considered but not reported on as commuter pick up / setdown is already part of the existing peak hour(s) parking demand. As this is not a new car park, the proposed development does not of itself change commuter usage of the interchange.

The proposed development does cater for pedestrian needs including encouraging pedestrian based retail trips to / from the interchange and the residential precinct to the west. It is not however designed as a commuter car park despite all Council's major car parks in the Village (including Rosenthal Avenue post development) providing 3 hours free parking.

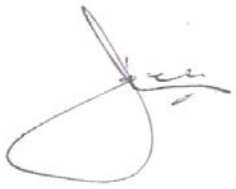
As the proposed development is primarily retail and there is no direct nexus between the proposal and commuting patterns using the Longueville Road Bus Interchange, with respect, there is no justification for such a study to be undertaken.

Conclusion

In conclusion, the Traffic Report in support of a Master Plan staged development application has had regard at a strategic level to the Paramics simulation modelling undertaken having regard to proposals such as the recent Longueville Road / Birdwood traffic light installation and Coxs Lane 2021 which have been simulated incorporating the proposed development.

Should any of our responses require further clarification, it would be beneficial to meet with the RMS representative and Council's Traffic Manager to discuss them.

Yours faithfully,



John Lee

Director,

Ashwin Management ServicesP/L

Attachment 1
For Information Purposes Only

Rosenthal Avenue Car Park

Redevelopment

Draft Construction

and

Traffic Management Plan

Prepared by Ashwin Management Services

August 2015

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ATTACHMENTS

2 EXECUTIVE SUMMARY

Currently the Rosenthal Avenue Car Park, located in the heart of the Lane Cove Village, provides at grade parking for 176 spaces. This premier car park operates at full capacity for much of the day, 7 days a week.

The proposed redevelopment of the Rosenthal Ave Car Park would increase the availability of public car parking on the site by providing structural parking below ground.

This draft construction and traffic management plan supports the Statement of Environmental Effects prepared by Planning Ingenuity P/L.

A civil works package within public road by or on behalf of Council as a public authority will be required to divert the existing stormwater drainage through the site adjust the kerb and gutter adjacent to the project and construct additional stormwater drainage.

A relocation and amplification of the electrical supply works package will need to be competed prior to decommissioning the existing Ausgrid substation on the site.

3 SITE DESCRIPTION

Rosenthal Ave Car Park is an existing at grade bitumen sealed providing public parking for retail, commercial and visitors as part of the Lane Cove Village car parking supply.

Attachment 1 of the main report is an aerial view of the car park site on which the various sub-catchments have been identified.

Attachment 3 of the main report is a survey of the site prepared by Craig and Rhodes.

It is noted that the site comprises 12 individual lots (including land owned by Ausgrid on which an existing substation is located). It is also noted that the road network is partly constructed over Lot 28 DP 10155.

It is understood that agreement with Ausgrid to acquire their site and relocate their infrastructure from off the site is a precondition to this development proposal proceeding.

The existing at grade Rosenthal Avenue car park has an south east to north west cross fall of approximately 8.7 m measured between Rosenthal Lane near the

Birdwood Lane at RL 82.3m and Birdwood Avenue / Rosenthal Ave at RL 73.5m Birdwood Lane. The site also falls east to west approximately 6.2m between Birdwood Lane at 78.6m and the low point of Rosenthal Avenue at 72.4. Birdwood Lane falls 3.8m south to north.

4 ROSENTHAL CAR PARK REDEVELOPMENT PROPOSAL

The Rosenthal Car Park Redevelopment proposes to increase the supply of public parking from 176 spaces to a maximum of 500 spaces. Achieving this will require 3 ½ structural levels below ground. The Proposal also includes a "retail box" and associated infrastructure occupying a further 1 ½ levels of structure below a landscaped public domain. The "retail box" is likely to house between 1 and 3 tenancies typically supermarket or mini major typologies.

Permanent access to and from the car park will be via a new roundabout to be constructed at the intersection of Finlayson Avenue and Rosenthal Avenue.

Concept plans of the proposal are included in Attachment 2 of the main report

The project will involve excavation down to RL 63.0m AHD approx.

5 DEVELOPMENT STAGING

5.1 STAGES

While there are numerous construction options, the following description in this draft construction and traffic management plan is based on the construction of the southern half of the car park first. This will enable retention of approximately 75 existing parking during Stage 3 as described below.

By undertaking the southern half first, access to all levels will be available during construction (constructability). Once an interim occupation certificate is issued, access to around 120 spaces will become available.

The builder will develop the final construction management plan broadly based on construction of the project in 2 halves. While the project will be divided into 7 separate stages shown in Attachment 1 of this report, this draft construction and traffic management plan does not cover works beyond Stage 4.

5.1.1 Stage 1

Relocate and augment Ausgrid infrastructure from its existing location on site. This essential work is required prior to Stage 2 excavation commencing and prior to any adjustment to Birdwood Ave;

5.1.2 Stage 2

Undertake the construction of that part of the basement car parking, retail box and to the public domain deck over the southern half of the site. Access to and from the northern half of the car park will remain at the existing driveway off Birdwood Avenue.

All works will need to be completed to a stage that allows an Interim Occupation certificate for handover of the part completed car park for public access;

5.1.3 Stage 3

Undertake a civil works civil package within public road by or on behalf of Council as a public authority to divert the existing stormwater drainage through the site. This is required to ensure stormwater is not diverted into the site during excavation;

5.1.4 Stage 4

Complete the construction of that part of the basement car parking, retail box and to the public domain deck over the northern half of the site.

All works will need to be completed to a stage that allows an Interim Occupation certificate for handover of the completed public car park for public access;

5.1.5 Stage 5

Fit out of the retail box by the retail tenant(s);

5.1.6 Stage 6

Undertake the public domain works on the deck located over the retail box;

5.1.7 Stage 7

Construct and fit out of any retail offerings located within the public domain on the deck located over the retail box; and

5.1.8 Stage 8

Erect the pedestrian bridge over Rosenthal Avenue.

5.2 TIMING

The proposed construction timing for the project will be as follows:

Stage 1	up to 1 month after design certification by Ausgrid - design to proceed immediately
Stage 2 Phase 1	Basement excavation and shoring walls (up to 4 months)
Stage 2 Phase 2	Construction of basements and building structures (up to 6 months)
Stage 2 Phase 3	Construction of roundabout access on Rosenthal Ave and stormwater drainage (up to 2 weeks)

Stage 2 Phase 4	Interim Occupation Certificate and Hand over of public car park one month
Stage 3	Regrade Birdwood Lane and associated drainage works Concurrent with Stage 2
Stage 4 Phase 1	Basement excavation and shoring walls (up to 4 months)
Stage 4 Phase 2	Construction of basements and building structures (up to 6 months)
Stage 4 Phase 3	Construct access to Loading Dock and associated drainage works in Rosenthal Ave (up to 2 weeks)
Stage 4 Phase 4	Interim Occupation Certificate and Hand over of public car park (up to one month)

A construction program of approximately 2 to 2.5 years is typically required for this size and type of development.

5.3 EXCAVATION PHASE

Prior to excavation, a suitable construction fence ('A' type hoarding and mesh / dust screened fence) will be installed around the perimeter of the relevant construction stage.

Excavation includes the construction of all shoring walls to enable the basement car park to be excavated safely within the site.

Load out of excavated material will be undertaken by trucks and trailers accessing the site via Longueville / Epping Roads and Rosenthal and Birdwood Avenue.

No trucks to and from the site will be permitted using Burns Bay Road east of Centennial Avenue.

It is estimated that 95,000 m^3 of VENM material will be transported from the site with an excavation period likely to extend over 30 weeks (approx. 20 weeks each for Stages 2 and 4).

6 STATUTORY APPROVALS

Consent to a master plan approach and subsequent development applications / modifications will be required.

It is proposed that the Construction Certificates will be approved in the following sequence:

1. Detail excavation structure for basement car park below existing road for Stage 2;
2. Structure for the basement car park to public domain deck over the retail box; and

3. Detail excavation structure for basement car park below existing road for Stage 4.

A temporary dewatering permit from the NSW Office of Water may be required in the event that groundwater is required to be pumped from the site during the proposed excavation work. Referral as an integrated development is not being applied for.

Approval from Council as Land owner of the public road will required for any temporary support of a public road

All road opening and hoarding permits will be obtained as necessary.

Work specific Traffic Control Plans will be prepared and where necessary approvals of the Local Traffic Committee obtained.

7 SERVICES

Approval from Ausgrid to relocate their substation and associated works and heads of agreement to acquire their land within the development site will be a precondition to development commencing.

To avoid damage to services, extensive pothole and sensing identification of services will be undertaken in conjunction with services details provided by the various public utility authorities.

8 CRANES

8.1 CRANES

All construction materials and deliveries will be unloaded in designated areas that will be located along Rosenthal Avenue. The use of temporary on-site tower cranes will enable these deliveries to be safely moved into position.

It is foreshadowed that up to 2 construction cranes may be used during the construction phases of this development.

These cranes will primarily provide service to the following on-site activities:

- Formwork delivery;
- Reinforcement steel;
- Concrete placement;
- Precast panel and brick / blockwork delivery;
- Cladding and other miscellaneous lifting or placing activities

Mobile cranes may be used for initial on-site activities to supplement the tower crane as necessary.

Permits will be obtained from relevant authorities prior to use.

8.2 CONSTRUCTION LOADING ZONES

There is insufficient space on-site for the setting down and picking up of all goods and materials being taken to or from the construction site, having regard to the desire to maximize availability of public parking on site during construction.

A construction Loading Zone is therefore proposed along Rosenthal Ave adjacent to the relevant phase of construction.

8.3 PERMITS

Permits will be obtained from relevant authorities prior to use.

9 SAFETY AMENITY AND SITE SECURITY

All site staff, contractors and visitors to the site will be required to undertake a site specific induction course prior to working on the site.

All public complaints will be directed to a nominated Site Manager whose name and number will be displayed on-site.

No workers will be permitted to enter the site if they are under the influence of drugs or alcohol.

It will be the responsibility of the builder to obtain Safe Work Method Statements (SWMS) from all contractors, which must also include safety manuals / policies from each company.

All contractors will be required to comply with site-specific safety management plan(s).

Regular 'Tool Box' meetings will be held on-site with the trades including the formation of a special on-site safety committee, which will inspect the project on a regular basis.

The site will be enclosed by a suitable construction / security fence with lockable gates.

10 SITE ACCOMMODATION

In Stage 2, site office and amenities will be initially housed in designated areas within the northern end of the car park until such time as the basement structure is completed to a stage where sheds and amenities can be internally accommodated. Alternately subject to necessary approvals, they may be located within Rosenthal Avenue.

11 WORK HOURS

In accordance with the relevant requirements of Lane Cove Council, the hours of on-site construction will be as follows:

a) Between 7:00 am and 5.30 pm, Mondays to Fridays;

b) Between 8:00 am and 12:00 noon, Saturdays;
c) No work to be undertaken on Sundays and Public Holidays;
d) Internal building work may be carried out at any time outside these hours, subject to noise emissions from the building or works not being audible at any adjoining boundary.
e) Or as otherwise that may be approved by Council or relevant Government Authority

Notwithstanding a) above, approval is requested for extended hours on critical concrete pours given the large plates involved for post tensions slabs.

It is also foreshadowed that some works relating to public authority infrastructure may involve night work.

12 TRAFFIC MANAGEMENT

General

a) Site Vehicles
   (i) Site vehicles enter and exit in a forward facing direction.
   (ii) All drivers will be made aware of the approved routes prior to commencing work at the site as part of the site induction.
   (iii) Vehicles will be scheduled in such a manner as to not require queuing on the road network surrounding the site.
   (iv) Site vehicles to use caution and give way to other road users when leaving the site

b) b) Road Occupancy
   (i) Approval from council and/or RMS when required will be sought prior to any works requiring road occupancy.
   (ii) All Traffic Control Plans (TCPs) associated with this CTMP will comply with relevant Australian Standards and RMS Traffic Control at Worksites Manual.
   (iii) Advanced warning signage installed along Birdwood Ave (westbound only) and in Rosenthal Ave (northbound only) to notify truck movements to approaching traffic.

c) Public Transport

   Surrounding public transport movements using Rosenthal Ave are unaffected by this project.

d) Surrounding Roads
   (i) Heavy vehicles are to use approved routes only for access to and from the site.
   (ii) High frequency construction traffic to Longueville Road / Epping Road be scheduled outside of AM peak to minimize impact on the operation of the signalized intersection.

(iii) Truck queuing on surrounding streets is not permitted.

e) Site Entry & Exit Routes

(i) Site Entry and exit for stages 2 and 4 will be to and from Rosenthal Ave.

(ii) Excavation trucks leaving the site will use Rosenthal Ave, Birdwood Ave, Longueville Road northbound and either Longueville Road eastbound or Epping Road westbound.

(iii) Trucks arriving to the site will approach via Birdwood Ave using either Epping Road or Longueville Road west and southbound.

f) Pedestrians

(i) Boundary fence will be erected around stages 2 and 4 to limit pedestrian access to site.

(ii) Works within public road will require pedestrian management to be incorporated into the TCPs.

(iii) Birdwood Ave will need to be managed to provide a safe pedestrian route during Stage 2 works.

13 NEIGHBOURS

Neighbours to the car park site include residential, retail, commercial, religious and service outlets.

It is paramount that the safety and existing amenity of neighbouring properties is not compromised during the construction activity.

It is also of high importance that all neighbours are kept informed of progress including advance notification of any critical concrete pours or any night works.

Crane over sailing rights will be negotiated with affected neighbours.

Access to premises off Birdwood Lane and Rosenthal Lane will be maintained wherever possible during construction.

14 RELATED MANAGEMENT PLANS

Each Development Application for subsequent stages of this development will be accompanied by more comprehensive construction and traffic, stormwater, waste management, environmental control, pedestrian and public safety management plans relevant to the respective application

ATTACHMENT 1 - PROPOSED STAGING PLAN