Applicant's Car Parking Analysis



Reference: 17.231r05v03

traffix traffic & transport planners

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5 November 2018

APP Corporation Pty Ltd Level 7, 116 Miller Street North Sydney NSW 2060

Attention: Satya Mandalika, Project Manager

Re: ALDI Minchinbury Distribution Centre – 1 Sargents Road, Minchinbury **Amendments to Development Application**

Dear Satya,

TRAFFIX has been commissioned by APP Corporation Pty Ltd on behalf of ALDI Foods Pty Ltd to assess the parking requirements and impacts of amendments to a redevelopment of the existing ALDI Minchinbury Distribution Centre, located on 1 Sargents Road, Minchinbury.

The redevelopment will involve an extension to the existing ALDI warehouse / office, general reconfiguration of the loading dock arrangements, formalising a truck marshalling / staging area opposite the northern docks and construction of an additional car parking deck above the existing atgrade ALDI staff car park.

It is noted that TRAFFIX has previously undertaken a Traffic Impact Assessment (17.231r01v04, dated 5 July 2017) for a previously proposed development application regarding the ALDI Minchinbury Distribution Centre, being previously a net increase of 10,957m² Gross Floor Area (GFA).

Background and Operation

The ALDI Distribution Centre in Minchinbury was initially opened approximately 19 years ago and was the first ALDI warehouse in NSW. Various interim measures and internal modifications have since been implemented over the years to increase its holding capacity and facilitate operational requirements. As such, the current ALDI Minchinbury Distribution Centre has reached its current capacity and further expansion is required to the warehouse and ancillary offices in order to accommodate an increased capacity beyond 2024.

The ALDI Distribution Centre currently has a total building area of 51,749m² comprising of 39,658m² of warehouse floor space and 12,091m² of office floor space. In addition, it currently accommodates 15 docks for cold handling, 44 docks for the ambient warehouse and 674 car parking spaces for staff and visitors. Its primary function is to store the general supermarket goods which are then transported to ALDI Stores across the northern region of NSW. In addition, reference should be made to the existing car parking plans which are presented at a reduced scale in Attachment 1.

It can currently accommodate 110 staff, with the site office operating 7 days a week from 5:00am to 12:00am, whereas the warehouse is under a continuous 24/7 operation.



Site and Location

The ALDI Minchinbury Distribution Centre is located at 1 Sargents Road, Minchinbury and is approximately 38 kilometres northwest of Sydney CBD. More specifically, the main building is located on the south-west corner of the Archbold Road and Sargents Road intersection.

The subject site has a total site area of approximately 9 hectares. The main distribution centre and ancillary offices provide light vehicle access midway along the northern frontage onto Sargents Road. Heavy vehicle access is provided at the north-west corner of the site via a separate driveway. In addition, there is an at-grade staff car park located at the northwest corner of the Archbold Road and Sargents Road intersection with access via Sterling Road. The development currently accommodates a total car parking provision of 674 spaces.

The main distribution centre is irregular in configuration and has a northern frontage to Sargents Road and an eastern boundary to Archbold Road of approximately 253 metres and 294 metres, respectively. The southern boundary to the Western Motorway is approximately 228 metres and the western boundary is shared with a neighbouring industrial property of approximately 386 metres. The at-grade staff car park is also irregular in configuration with a northern boundary to a neighbouring industrial property of approximately 182 metres. It has frontages to Archbold Road in the east, Sargents Road in the south and Sterling Road in the west of approximately 62 metres, 164 metres and 62 metres, respectively.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**.



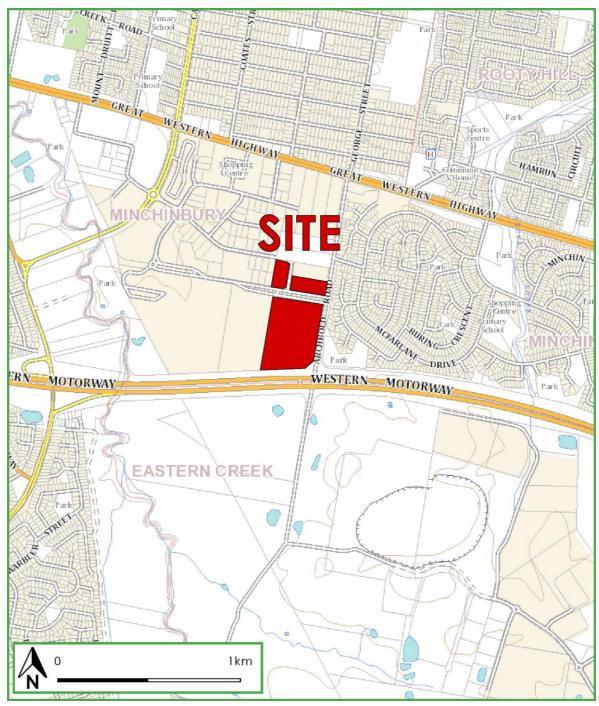


Figure 1 – Location Plan





Figure 2 – Site Plan



Description of Amended Development

A full description of the proposed development can be found in the Statement of Environmental Effects, prepared separately. In summary, the redevelopment for which approval is now sought comprises of the following components:

- Warehouse construction comprising of:
 - Extension of the existing warehouse by 4,236m² GFA,
 - Extension of the mezzanine storage level by 1,769m² GFA,
 - Increasing the amount of cold handling docks by four (4) docks,
 - Reducing the amount of ambient warehouse docks by 16 docks.
- Ancillary office construction comprising of:
 - Construction of a three (3) storey office building of 2,360m² GFA,
 - Construction of an ancillary staff café and kitchen of 422m² GFA.
- The addition of 200 car parking spaces totaling 874 spaces, comprising of:
 - Removal of 10 car parking spaces at the at-grade staff car park,
 - Addition of five (5) accessible car parking spaces at the at-grade staff car park,
 - Provision of an additional car parking deck above the existing at-grade staff car park to accommodate an additional 167 car parking spaces,
 - Removal of 40 car parking spaces at the western hardstand car park,
 - Removal of five (5) car parking spaces at the refuse area car park,
 - Provision of an additional 83 car parking spaces at the forecourt car park.

In summary, the proposed development has a total net increase of 8,787m² GFA including 6,005m² GFA for warehouse use and 2,782m² GFA for ancillary use. Reference should be made to the proposed car parking plans which are presented at a reduced scale in **Attachment 2**.

Parking Requirements

Council Parking Requirements

The subject development is located within the Blacktown City Council's Local Government Area. The Blacktown City Development Control Plan 2015 (DCP) applies to the subject site which states the parking rate and provision for a Distribution Centre based on GFA. This is summarised below in **Table 1** for the proposed net increase in GFA for the ALDI Distribution Centre:

Table 1 - DCP Minimum Net Parking Rates and Provisions

Туре	Net Area GFA (m²)	Minimum DCP Parking Rate	Parking Provision*
Warehouse	6,005	1 space per 75m² GFA	80
Office	2,782	1 space per 40m² GFA	70
Totals	8,787		150

^{*} Rounded to the nearest whole number.

It can be seen from Table 1 that the development is optimally required to provide a minimum of 150 car parking spaces for the net increase in GFA of the warehouse and ancillary office components. In response, the development has proposed the provision of an additional 200 car parking spaces.



This provision comprises of an additional 38 car parking spaces at the main distribution centre and an additional 162 car parking spaces at the at-grade staff car park.

The total provision of an additional 200 car parking spaces exceeds (superior to) that of the minimum requirement and is therefore compliant with the DCP.

Accessible Spaces

The Blacktown City DCP 2015 states that the minimum accessible spaces shall be in accordance with the Building Code of Australia AS1428 (BCA). As such, the BCA states that accessible parking for a distribution centre should be provided at the following rate:

1 per 100 spaces or part thereof.

Application of this rate to the additional 200 car parking spaces proposed results in the minimum provision of two (2) accessible parking spaces. In response, the development will provide an additional five (5) accessible parking spaces. Therefore complying with the requirements of Council's DCP and the BCA.

These accessible parking spaces are to be designed in accordance with AS2890.6 (2009), being a minimum width of 2.4 metres, a length of 5.4 metres, and an adjacent shared zone with the same dimensions.

Servicing

The proposed redevelopment can accommodate a total of 47 loading docks and 16 truck marshalling bays. This provision is summarised as follows:

- Ambient Warehouse (goods in and goods out) comprising of:
 - Seven (7) dedicated loading docks for B-double vehicles (26.0m) located on the north-western side of the ambient warehouse,
 - 21 loading docks for articulated vehicles (19.0m) located on the western side of the ambient warehouse.
- Cold Handling (cool-house docks) comprising of:
 - 19 loading docks for articulated vehicles (19.0m) located on the western side of the cold handling component of the warehouse.
- Truck Marshalling area comprising of:
 - 16 truck bays located along the western site boundary of the site.

The above provision of docks and truck bays is sufficient to accommodate the ALDI Distribution Centre's operational requirements. It is noted that the distribution centre operates under a dock management and delivery booking system to ensure that all truck arrivals are adequately accommodated on-site.

A swept path analysis has been undertaken to demonstrate the movements of the maximum size permitted vehicle for each dock and truck marshalling area, in accordance with AS2890.2 (2002). This analysis demonstrates satisfactory entry and egress of vehicles and is provided in **Attachment 3**.



Traffic Impacts

As previously mentioned, TRAFFIX has conducted a Traffic Impact Assessment (17.231r01v04) on the previously proposed development in accordance with the *RMS Guide to Traffic Generating Developments 2002*. The RMS Guide recommends that surveys of existing developments similar to the proposal should be undertaken to estimate the future traffic generation potential of a development.

In this regard, TRAFFIX had undertaken a detailed vehicle movement counts at the existing ALDI Minchinbury Distribution Centre on Wednesday 5th of July 2017 between 6:30am to 8:30pm in order to derive a site specific trip generation rate. This site specific trip generation is summarised below in **Table 2**:

Table 2 - Peak Hour Trip Generation Rate for ALDI Distribution Centre

	Inbound		Outbound		
Peak Period	Light Vehicle	Heavy Vehicle	Light Vehicle	Heavy Vehicle	
AM	0.48 vehicle per	0.08 truck per	0.08 vehicle per	0.06 truck per	
	100m ²	100m ²	100m ²	100m ²	
PM	0.06 vehicle per	0.39 truck per	0.02 vehicle per	0.02 truck per	
	100m ²	100m ²	100m ²	100m ²	

Application of the above rates to the net increase of the amended 8,787m² GFA equates to a potential traffic generation of 61 vehicle trips during the AM peak period and 43 vehicle trips during the PM peak period. This is summarised below in **Table 3**:

Table 3 – Net Traffic Movements for ALDI Distribution Centre

	Inbound		Outbound	
Peak Period	Light Vehicle	Heavy Vehicle	Light Vehicle	Heavy Vehicle
АМ	42	7	7	5
PM	5	34	2	2

In reference with the Traffic Impact Assessment (17.231r01v04) prepared by TRAFFIX, further analysis was undertaken regarding the trip distribution and intersection performance within the locality of the site. This analysis included a SIDRA assessment, with the results summarised below:

- All intersections will continue to operate a level of service A during both the AM and PM peak periods.
- All intersections will have minimal queues and delays.

This previous assessment was made in regards to the previous traffic generation, which in turn was based on the previous net GFA of 10,957m². Application of the amended and decreased GFA of 8,787m² would result in a reduced traffic generation, thus resulting in a continued level of service A intersection performance during the AM and PM peak periods. As such, the proposed amended development of the site is expected to result in no negative implications to the surrounding road network.



Access and Internal Design

Access

The amended proposal will retain all existing access arrangements that service the site. Therefore, no further analysis required.

Car Parking Internal Design

All the existing ALDI Minchinbury Distribution Centre car parking areas are to be retained as per existing, except 40 car parking spaces at the western hardstand, five (5) car spaces at the refuse area car park and 10 car spaces at the at-grade staff car park. Nevertheless, all future and reconfigured off-street car parking facilities have been designed in accordance with AS2890.1 (2004) and AS2890.6 (2009), with the following noteworthy:

- The additional provision of 200 car parking spaces have been designed with a minimum width of 2.4m and a length of 5.4m as required under AS 2890.1 for User Class 1A.
- The five (5) additional accessible parking spaces have been designed with a minimum width
 of 2.4m, a length of 5.4m, and an adjacent shared zone with the same dimensions.
- All car parking spaces adjacent to obstructions larger than 150mm have been provided an additional 300mm clearance.
- Dead-end aisles have been provided with a 1.0m aisle extension beyond the last car parking space.
- The internal circulation ramp complies with the following design parameters:
 - Ramp transitions have been provided where the change of grade exceeds 12.5%.
 - Ramp transitions will occur over a minimum length of 2m, at a grade of less than 12.5%.
 - The maximum vehicular ramp gradient of 1 in 5 (20%).
- A minimum clear head height of 2.2m has been provided for light vehicle areas.
- A minimum clear head height of 2.5m to be provided directly above all accessible car parking spaces.
- All columns and obstructions are located outside the parking space design envelopes.

Commercial Vehicle Areas

In addition to the above, the amended proposal has provisions for the modification of the commercial vehicle areas with the following characteristics:

- Seven (7) docks for the ambient warehouse have been designed to accommodate a maximum size vehicle of a B-double vehicle (26.0m).
- 21 docks for the ambient warehouse have been designed to accommodate a maximum size vehicle of an articulated vehicle (19.0m).
- 19 docks for the cold handling warehouse have been designed to accommodate a maximum size vehicle of an articulated vehicle (19.0m).



- 16 truck bays for the truck marshalling area have been designed to accommodate a maximum size vehicle of an articulated vehicle (19.0m).
- A minimum clear head height of 4.5m is to be provided for all commercial vehicle trafficable areas and within loading docks.
- Swept path analysis has been undertaken for all docks under AS2890.2 (2002) and confirms satisfactory entry / egress of each dock. This analysis has been provided in Attachment 3.

In summary, the internal configuration of the on-site parking and commercial vehicle areas have been designed in accordance with AS2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009). It is however envisaged that a condition of consent would be imposed requiring compliance with these standards. As such, any minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

Conclusion

TRAFFIX has given consideration to the amended development application to that of the previous application and finds the development supportable on traffic engineering grounds based on the following reasons:

- The amended proposal includes the provision of an additional 200 car parking spaces that is compliant and more consistent with the minimum requirements of the Blacktown City DCP;
- The amended design is considered to be more efficient as it consolidates the commercial vehicle movements to the western side of the warehouse building. In addition, this design accommodates an increased number of docks from 42 to 47 docks and an increased number of truck bays from 15 to 16 (from previous proposal). As such, the design is more efficient and optimised to accommodate the operational requirements of the distribution centre; and
- As mentioned, the net GFA is reduced to that of the previous proposal. As a result, the traffic generation associated with the amended proposal would constitute in a decrease in net traffic generation from the previous proposal. As such, based on the previous SIDRA Intersection modelling assessment, the amended proposal (reduction in GFA) will continue to operate at a level of service A with minimal queues and delays.

On the basis of the above, the amended proposal for ALDI Minchinbury Distribution Centre at 1 Sargents Road, Minchinbury in our view is considered supportable.

Thank you for referring this matter for our consideration and, in the meantime, please contact us should you have any queries.

Traffix

Vince Doan
Senior Engineer

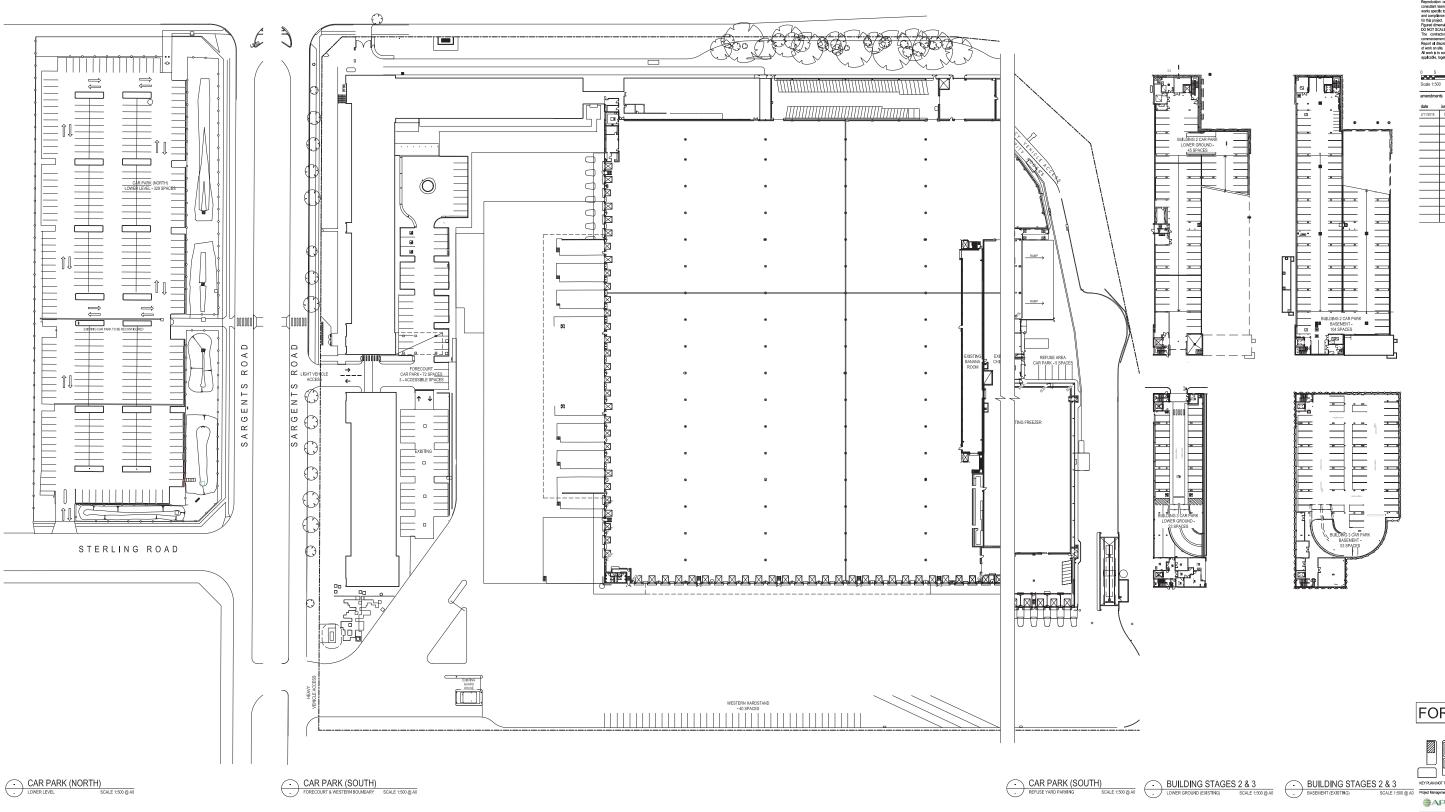
Encl: Attachment 1 – Existing Car Parking Plans

Attachment 2 - Proposed Car Parking Plans

Attachment 3 - Swept Path Analysis

Attachment 1

Existing Car Parking Plans

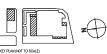


CAR PARK NUMBERS: 1 SARGENTS ROAD				
EXISTIN				
FORECOURT CAR PARK	72			
ACCESSIBLE SPACES - FORECOURT	3			
WESTERN HARDSTAND	40			
REFUSE AREA	5			
BASEMENT OFFICE BUILDING 1	149			
BASEMENT OFFICE BUILDING 2	76			
TOTAL CAR PARK SPACES	345			

CAR PARK NUMBERS: 2 SARGENTS ROAD			
	EXISTING		
EXTERNAL CAR PARK - GROUND	329		
ACCESSIBLE SPACES	0		
EXTERNAL CAR PARK - FIRST LEVEL	0		
TOTAL CAR PARK SPACES	329		

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FOR APPROVAL



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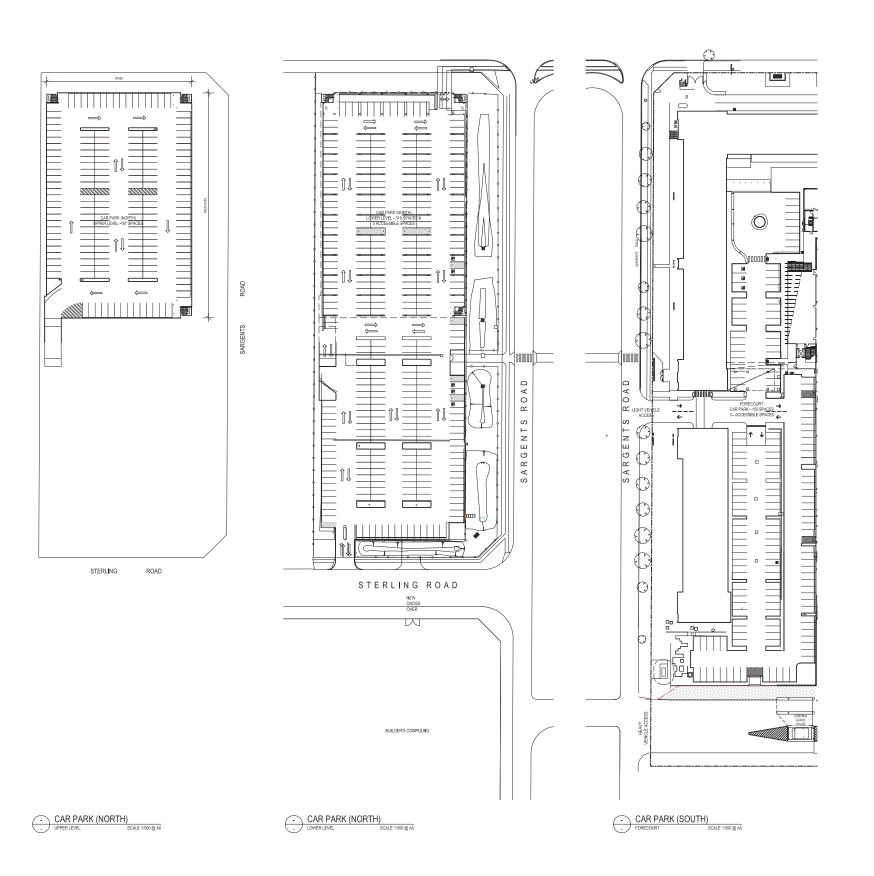
DISTRIBUTION CENTRE REDEVELOPMENT MINCHINBURY NSW

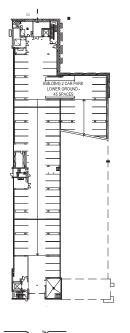
sheet title SITE PLAN -EXISTING CAR PARKING

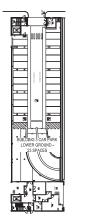
2/11/2018 job no. scale @ A0 1:500 dwg no. stage CONCEPT revision BA170027 DA-1002

Attachment 2

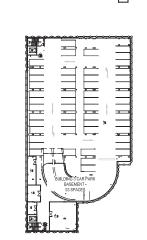
Proposed Car Parking Plans







BUILDING STAGES 2 & 3



BUILDING STAGES 2 & 3

BASEMENT (EXISTING) SCALE 1:500 @ A0

ZSS

CAR PARK NUMBERS: 1 SARGENTS ROAD			
	EXISTING	PROPOSED	
FORECOURT CAR PARK	72	155	
ACCESSIBLE SPACES - FORECOURT	3	3	
WESTERN HARDSTAND	40	0	
REFUSE AREA	5	0	
BASEMENT OFFICE BUILDING 1	149	149	
BASEMENT OFFICE BUILDING 2	76	76	
TOTAL CAR PARK SPACES	345	383	

CAR PARK NUMBERS: 2 SARGENTS ROAD				
EXISTING PROPOSED				
EXTERNAL CAR PARK - GROUND	329	319		
ACCESSIBLE SPACES	0	5		
EXTERNAL CAR PARK - FIRST LEVEL	0	167		
TOTAL CAR PARK SPACES 329 491				



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project details DISTRIBUTION CENTRE REDEVELOPMENT MINCHINBURY NSW

sheet title SITE PLAN -PROPOSED & EXISTING CAR PARKING

BA170027 DA-1103

scale @ A0 1:500 dwg no. stage CONCEPT revision

Attachment 3

Swept Path Analysis

