



TRAFFIC AND PARKING ASSESSMENT

PLANNING PROPOSAL

TIDESWELL STREET & PARRAMATTA ROAD, ASHFIELD



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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

Development Type: Planning Proposal

Site Address: Tideswell Street & Parramatta Road, Ashfield

Prepared for: HDC Planning

Document reference: 17442.01FA

Status	Issue	Prepared by	Checked by	Date
Draft	A	MM		23 rd August 2017
Draft	B	MM	CM	29 th August 2017
Final	A	MM	CM	16 th October 2017

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TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	State Environmental Planning Policy (Infrastructure) 2007	1
1.2	Site Description.....	1
1.3	Site Context	1
2	EXISTING TRAFFIC AND PARKING CONDITIONS	3
2.1	Road Hierarchy	3
2.2	Existing Traffic Management	4
2.3	Public Transport.....	4
2.4	Future Road and Infrastructure Upgrades	6
2.5	Proposed Scale	6
3	PARKING ASSESSMENT	7
3.1	Council Parking Requirement	7
3.2	SEPP 65 – Parking Requirements.....	8
3.3	Bicycle & Motorcycle Parking Requirements	9
3.4	Servicing & Loading.....	10
3.5	Disabled Parking.....	11
3.6	Car Park Design & Compliance	11
4	TRAFFIC ASSESSMENT	13
4.1	Traffic Generation	13
5	CONCLUSION	15

1 INTRODUCTION

McLaren Traffic Engineering (MTE) was commissioned by *HDC Planning* to prepare a preliminary Traffic and Parking Assessment of the proposed Planning Proposal and land rezoning application at Tideswell Street & Parramatta Road, Ashfield NSW.

This traffic assessment will investigate future vehicular access to the site, public transport accessibility, car parking requirements and outline the traffic impact of the proposed development.

The site is located within the jurisdiction of Inner West Council (previously Ashfield Council) and is subject to their planning controls. Concept plans are provided in **Annexure A** for reference.

1.1 *State Environmental Planning Policy (Infrastructure) 2007*

The proposed development does qualify as a traffic generating development with relevant size and/or capacity under Clause 104 of the SEPP (Infrastructure) 2007. Accordingly, formal referral to the Roads and Maritime Services (RMS) is necessary.

1.2 *Site Description*

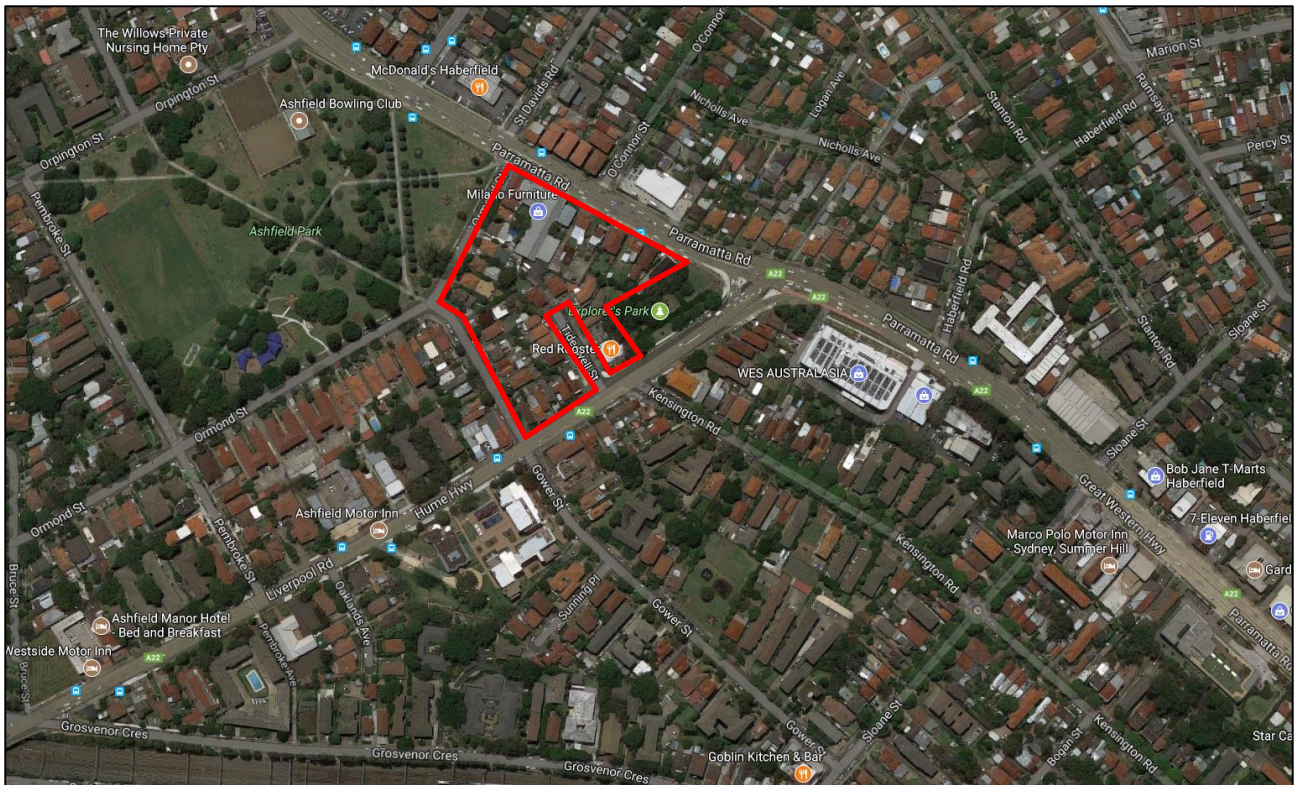
The subject site is currently occupied by low to medium density residential developments, fast food premises and commercial developments at Ormond Street, Parramatta Road, Gower Street and Tideswell Street and the Hume Highway.

The site has an area of approximately 20,004m² and is currently zoned B6 – Enterprise Corridor and R3 – Medium Density Residential under the Inner West Council Ashfield LEP 2017. The site fronts Tideswell Street, Gower Street to the southwest, Ormond Street to the northwest, Parramatta Road to the north and the Hume Highway to the south. The existing land uses on the Block have existing vehicular access from all street frontages.

Generally, the site is surrounded by medium to high density residential dwellings, commercial developments, Ashfield Park located to the northwest and Explorers Park adjacent to the site. Summer Hill Train Station is located to the south of the site and Ashfield Train Station to the west.

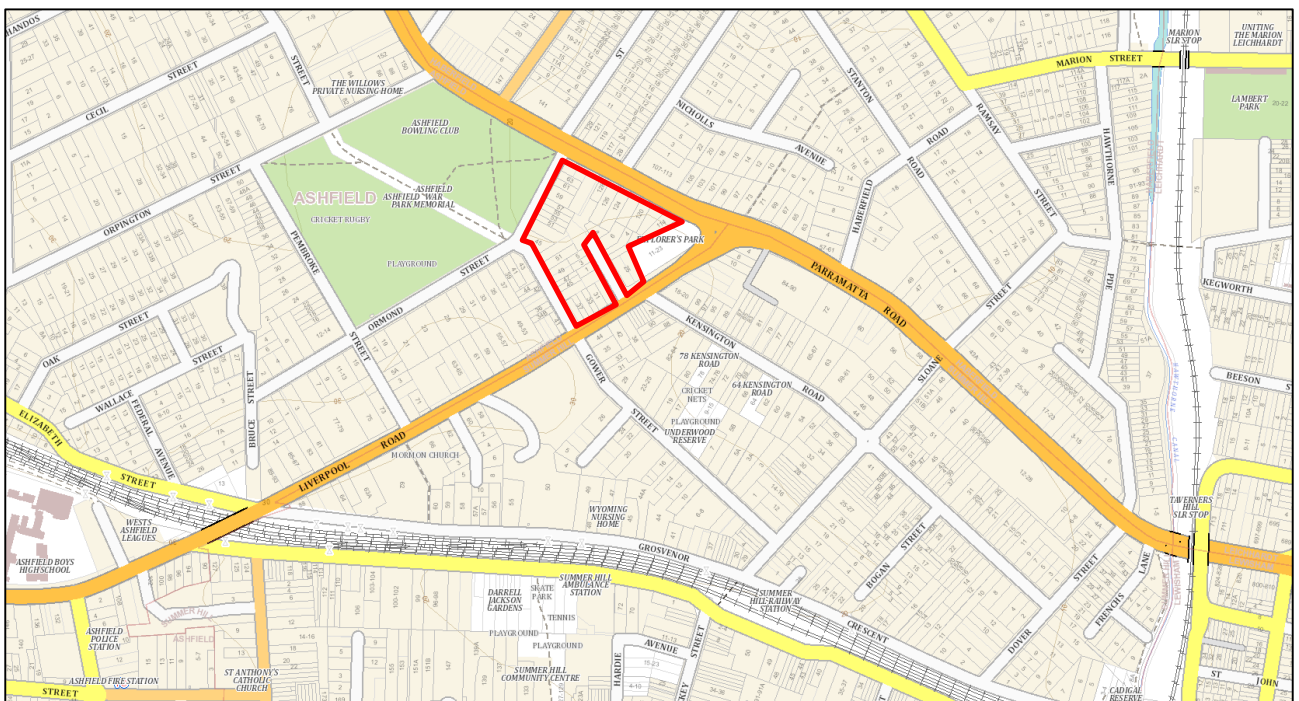
1.3 *Site Context*

The site location is shown on aerial imagery and a map in **Figures 1 & 2** respectively.



— Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



— Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 *Road Hierarchy*

The Hume Highway has the following characteristics within close proximity to the site:

- Classified STATE road (No.2);
- Approximately 12m in width facilitating two traffic flow lanes in both directions including one parking lane on both sides of the road to the south of Tideswell Street. Approximately 17m in width facilitating two traffic lanes in the southwest direction and three traffic lanes in the northeast direction with no kerbside parking via “*No Stopping*” signage;
- Signposted - 60km/h applies;
- “*No Parking*” signage to the northeast of Tideswell Street and unrestricted kerbside parking to the southwest of Tideswell Street with clearways in operation during the AM peak period on the north-eastern approach and south-western approach during the PM peak period.

Parramatta Road has the following characteristics within close proximity to the site:

- Classified STATE Road (No. 5);
- Approximately 17m in width facilitating two traffic flow lanes in the westerly direction and three traffic flow lanes in the easterly direction;
- Signposted - 60km/h applies;
- “*No Stopping*” and “*No Parking*” signage on both sides of the road and clearways in operation during the AM and PM peak periods on both sides of the road.

Tideswell Street has the following characteristics within close proximity to the site:

- Unclassified LOCAL Road;
- Approximately 12m in width facilitating one traffic flow lane in both directions and kerbside parking on both sides of the road;
- No speed limit signposted - 50km/h applies;
- Unrestricted kerbside parking along both sides of the road.

Gower Street has the following characteristics within close proximity to the site:

- Unclassified LOCAL Road;
- Approximately 12m in width facilitating one traffic flow lane in both directions and kerbside parking on both sides of the road;

- Signposted - 50km/h applies;
- Unrestricted kerbside parking along both sides of the road.

Ormond Street has the following characteristics within close proximity to the site:

- Unclassified LOCAL Road;
- Varying width of approximately 9m to the north of Gower Street and 12m to the south of Gower Street facilitating one traffic flow lane in both directions and kerbside parking on both sides of the road;
- Signposted - 50km/h applies;
- Unrestricted kerbside parking along both sides of the road.

2.2 Existing Traffic Management

- Priority controlled intersection of Ormond Street / Gower Street;
- Signalised intersection of Parramatta Road / The Hume Highway;
- Giveway controlled intersection of Tideswell Street / The Hume Highway;
- Signalised intersection of The Hume Highway / Gower Street;
- Priority controlled “*Left Only*” intersection of Ormond Street / Parramatta Road.

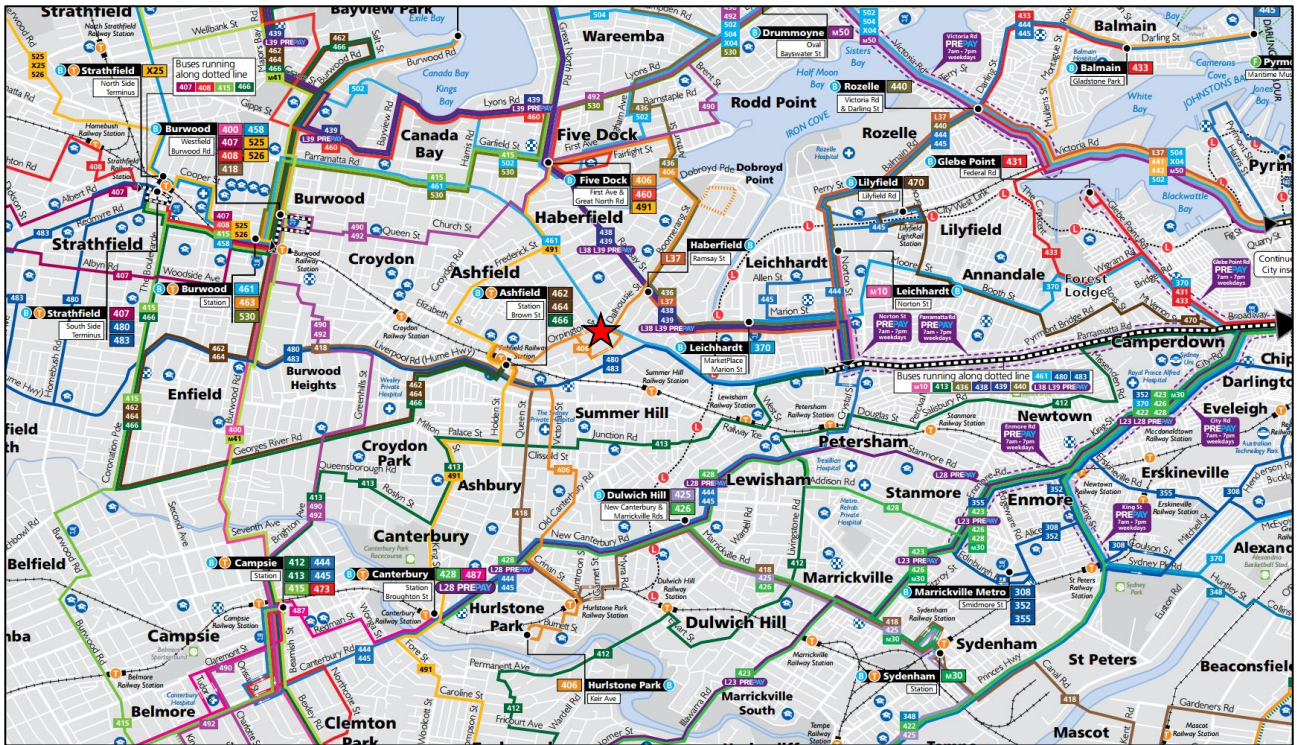
2.3 Public Transport

The subject site has direct access to both bus and rail services within the area.

The subject site has access to existing bus routes 461, 480, 483, N60, N61, N70, N71 and N80 provided by State Transit and Nightride. Existing bus stops are located within 400m walking distance from the site. The bus routes provide access to Burwood Station, Concord, Haberfield, Leichhardt, Annandale, Glebe, Sydney CBD, Dundas, Rydalmere, Rosehill, Clyde, Auburn, Strathfield, Guildford West, Parramatta and Carlingford.

Summer Hill Train Station is located approximately 600m walking distance to the southeast of the site along Grosvenor Crescent providing access to the T1 - North Shore, Northern & Western Line and T2 – Airport, Inner West & South Line. Similarly, Ashfield Train Station is located within 1.1km walking distance from the site providing access to the T1 and T2 train lines. Furthermore, these train stations provide access to Central Station, further enabling resident and visitor’s connection to broader Metropolitan Sydney.

The public transport infrastructure relative to the sites location is shown in **Figure 3** below.



★ Site Location

FIGURE 3: PUBLIC TRANSPORT MAP

2.4 Future Road and Infrastructure Upgrades

According to Inner West Council's DA tracker, there are no significant developments proposed in the future within close proximity to the subject development that will have an influence on the surrounding road network or on-street parking demand.

2.5 Proposed Scale

The planning proposal is a part of the State Government Vision to provide 27,000 new homes and 50,000 new jobs in the next 30 years and seeks an amendment to the current Land Use Zoning, Height and Floor Space Ratio controls that exist for the site.

Currently, the site is zoned B6 – Enterprise Corridor and R3 - Medium Density Residential under Ashfield Local Environmental Plan (LEP) 2013 with a permissible Floor Space Ratio of 0.7:1 and 2:1 for the R3 and B6 zoning respectively. The northern boundary of the proposal has a maximum permissible building height of 15m (B6) while the southern end has a maximum permissible height of 12.5m (R3).

The planning proposal seeks to increase both the building height and FSR controls that currently exist across the site. The FSR is sought to be increased to roughly 2.3:1.

For the purpose of this planning proposal the following scale has been assumed for the purpose of the development assessment under the FSR of 2.3:1.

- 515 residential units;
 - 176 x 1-bedroom unit;
 - 287 x 2-bedroom unit;
 - 52 x 3-bedroom unit.
- 2,880m² non-residential GFA

The above proposed scale of the development will be split into three stages with three basement car parks. All vehicular access into the basement car parks will be via Tideswell Street, Ormond Street and Gower Street for Stage 1, 2 and 3 respectively.

3 **PARKING ASSESSMENT**

3.1 **Council Parking Requirement**

Reference is made to the *Inner West Council Comprehensive Development Control Plan 2016 Section 2A: Parking* which lists the following objectives with respect to parking:

To ensure the provision of off-street parking satisfies the needs of occupants, residents and visitors, including people with disabilities.

To minimise loss of on street parking

To manage traffic safely and efficiently, and in particular, avoid conflicts between pedestrians and vehicles

To ensure provision is made for loading and unloading facilities separated from resident and visitor parking in order to eliminate any conflicts

To encourage sustainable transport such as bicycles, motorcycles and walking

To consider the capacity of local roads and intersections

Council's DCP specifies car parking rates for various land uses that must be provided in accordance with development proposals. Council's parking requirements for the planning proposal land uses are outlined below:

Residential Flat buildings in B1 –Neighbourhood Centre Zone, B2 Local Centre Zone and B4 – Mixed Use Zone

Minimum of 1 space for all dwellings

Parking for visitors at the rate of 1 space for every 4 dwellings including serviced apartments plus 1 car wash bay; or

In accordance with the Apartment Design Guide (whichever is lesser)

After calculating the total required number of car parking spaces (including car parking spaces required for people with disabilities and bicycle and motorcycle parking spaces) – if the result is not a whole number, it will need to be rounded UP to the next whole number for fractions that are 0.5 or greater or the figure is to be rounded DOWN to the next whole number for fractions that are less than 0.5.

Based upon the above car parking requirements, the proposed development would require the following car parking provisions as shown in **Table 1** below.

TABLE 1: COUNCIL'S DCP PARKING REQUIREMENT

Land Use	Scale	Rate	Parking Required
Residential	515	1 space per dwelling	515 + CWB
Residential Visitor	515	1 space per 4 dwellings	128.75
Total	-	-	643.75 (644)

As shown above the proposed development would require **644** residential car parking spaces based upon the DCP car parking requirements. The car parking provision for the non-residential and residential component of the site can be detailed and further assessed during D.A stage. The parking requirement in **Table 1** above is for indicative purposes only.

In addition to the above, reference should also be made to the State Environmental Planning Policy 65 (SEPP 65) – Design Quality of Residential Apartment Development which requires proposed developments to comply with the Apartment Design Guide (ADG). The parking requirements based upon the ADG are outlined in the following subsection.

3.2 SEPP 65 – Parking Requirements

Referring to the ADG, Objective 3J-1 requires the following design criteria:

For development in the following locations:

- *On sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area*

The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less.

The car parking rates within the RMS “Guide to Traffic Generating Developments” 2002 are as follows:

Section 5.4.3 – High density residential flat buildings

Metropolitan Sub-Regional Centres

0.6 spaces per 1-bedroom unit

0.9 spaces per 2-bedroom unit

1.4 spaces per 3-bedroom unit

1 space per 5 units (visitor parking)

The site is located within 800m of Summer Hill Station and as such the RMS car parking rates outlined above apply for the residential component of the development. **Table 2** below summarises the RMS car parking requirements.

TABLE 2: RMS PARKING REQUIREMENT

Land Use	Type	Scale	Rate	Parking Required
Residential	1 bedroom	176	0.6 spaces per dwelling	105.6
	2 bedroom	287	0.9 spaces per dwelling	258.3
	3 bedroom	52	1.4 spaces per dwelling	72.8
Residential Visitor	-	513	1 space per 5 dwellings	102.6
Sub-total	-	-	-	539.3 (540)

As shown above the indicated unit split results in approximately **540** parking spaces based upon the RMS Guide.

It is envisaged that all residential and non-residential car parking will be provided within each Stages basement car park. It should be noted that the number of car parking spaces required for the planning proposal are subject to change based upon detailed design. The car parking requirement and provision of the proposed development can be detailed and further assessed during D.A stage.

Given the scale of the residential portion of the development and the required number of residential visitor spaces, consideration could be made to reduce the overall parking requirement for the retail portions of the developments by a shared parking arrangement between the retail visitors and residential visitors. It should be noted, that the peak parking demand for residential visitors typically occurs on a Friday or Saturday night after 6pm, hence after commercial and retail business hours.

3.3 Bicycle & Motorcycle Parking Requirements

Council's DCP outlines the following bicycle and motorcycle parking requirements for the proposals land uses:

Bicycle Parking Requirement

Flats

1 per 10 flats in an accessible communal area if no lockable garage provided for occupants

1 per 10 flats in an accessible communal area for visitors

Motorcycle Parking Requirement

Motorcycle parking spaces 2.5m x 1.3m are required in addition to those for bicycles and are to be provided for sites containing 25 or more car parking spaces at the rate of 1 space per 25 car parking spaces in a communal area accessible to residents / staff / visitors or other users of the parking facility

Based on 515 units, **52** residential bicycle parking spaces and **52** residential visitor bicycle parking spaces would suffice in order to achieve the objectives of the DCP. The bicycle requirements for the non-residential portion of the development can be assessed at the DA stage.

Based upon the car parking requirements outlined in **Section 3.1 & 3.2**, the site would require the provision of **26** motorcycle parking spaces based upon the provision of **644** car parking spaces (Council's DCP) or **22** motorcycle spaces based upon the RMS parking requirements. The motorcycle requirements for the non-residential portion of the development can be assessed at the DA stage.

3.4 Servicing & Loading

Reference is made to the *Council's Development Control Plan Section 2: Part C – Waste Management Design General Provisions* which outlines the following requirements for residential waste collection.

Residential

- i) All residential developments must be designed to accommodate standard Council waste and recycling services and collection vehicles (see Guide 1: Inner West Council Standard Services).*

Council's standard waste collection service has dimensions of 9.4m length by 3.8m height. The loading bays for residential waste collection (if any are proposed) should be designed to accommodate this vehicle for both circulation areas and headroom requirements unless specified by Council.

Council's DCP outlines the following in relation to non-residential loading facilities:

Loading and unloading facilities on property needs to be provided for all business, commercial, industrial, office, retail and storage uses and any other use where regular deliveries of goods are made to or from the site

Based upon the above requirements, all non-residential tenancies will require a loading / unloading facility based upon the operational use of the site. The number of retail tenancies are currently unknown and can be detailed during the DA stage. Furthermore, consideration could be made to providing a combined loading / unloading facilities for the non-residential components which could operate under a Plan of Management. It is envisaged that the site could accommodate up to a 12.5m length Heavy Rigid Vehicle given its proximity to the state road network.

All service vehicle access for the residential and non-residential developments is expected to be provided within each basement car park via the proposed entry and egress driveways from Tideswell Street, Gower Street and Ormond Street which can be detailed during the DA stage.

Furthermore, consideration should be made to provide loading bays on the ground floor of the development for residential and non-residential waste collection and deliveries. The provision of service vehicles within a basement car park requires additional driveway width, headroom (up to 4.5m clear for 12.5m length Heavy Rigid Vehicles), loading bays and circulation areas to facilitate safe and efficient access and egress. In addition, consideration could be made to providing a kerbside dedicated loading zone within Tideswell Street/ Gower Street or Ormond Street for the provision of deliveries / waste collection for both residential and non-residential developments subject to Council approval.

3.5 Disabled Parking

Council's DCP outlines a rate of 1 accessible car parking space to be provided for each accessible and adaptable residential unit. Furthermore, Council's DCP requires a minimum ten (10) percent of dwellings on the site (rounded to the nearest whole number) shall also be capable of being adaptable housing. This results in a disabled car parking provision of 52 for the residential component of the site. The provision of adaptable spaces for the residential component can be detailed at the DA stage.

The provision of disabled parking for non-residential parking spaces will be based upon the BCA requirements and can be detailed during the DA stage for each land use.

3.6 Car Park Design & Compliance

Car parking areas shall be designed in accordance with AS2890.1:2004, AS2890.2:2004, AS2890.3:2015 and AS2890.6:2009 where applicable. The notable design criteria of these three standards are as follows:

- Residential tenant car parking spaces shall measure a minimum of 2.4m in width by 5.4m in length;
- Residential visitor car parking spaces shall measure a minimum of 2.5m in width by 5.4m in length;
- Aisle widths for User Class1/1A shall be a minimum of 5.8m;
- A 1.0m aisle extension is required for blind aisles;
- An additional 300mm clearance on top of the base parking dimension is required to obstructions and walls;
- Disabled parking spaces shall measure 2.4m wide by 5.4m in length, with an adjacent shared zone of the same dimension;
- Headroom for passenger cars shall be minimum 2.2m in all locations, increasing to 2.5m above disabled parking spaces and shared zones;
- Driveway locations offset at least 6m from priority / Giveaway controlled intersections;

Loading areas and bays shall be designed in accordance with AS2890.2:2002. Notably, the following design criteria should be met:

- Minimum Loading Bay Widths:
 - Small Rigid Vehicle (6.4m length) – 6.4m x 3.5m;
 - Medium Rigid Vehicle (8.8m length) – 8.8m x 3.5m;
 - Heavy Rigid Vehicle (12.5m length) – 12.5 x 3.5m.
- Loading Area Grade:
 - No greater than 4% in any direction;
- Access Ramps to Loading Area:
 - SRV – Maximum grade of 15.4% with grade changes of 8.3% over 4m;
 - MRV / HRV – Maximum grade of 15.4% with grade changes of 6.25% over 7m.
- Headroom Requirements:
 - SRV – 3.5m above loading and all areas within the vehicular path of travel;

- MRV / HRV– 4.5m above loading and all areas within the vehicular path of travel.

Swept path testing has been undertaken for a 12.5m length Heavy Rigid Vehicle (HRV) within the nearby road network, namely along The Hume Highway / Gower Street / Tideswell Street and Ormond Street to ensure access can be provided to the site for the expected largest service vehicle and is reproduced in **Annexure B** for reference. A detailed review of the access and basement car parking layout will be undertaken during the DA stage.

The results of the swept paths allow a 12.5m length HRV vehicular access to each proposed driveway location as per the following:

- Stage 1 – Left in / left out from Tideswell Street;
- Stage 2 – Right in from Gower Street / right out onto Ormond Street;
- Stage 3 – Right in from Gower Street / left out onto The Hume Highway or right out onto Parramatta Road.

It should be noted that right turn out of the site onto Parramatta Road should not be permitted directly from the site.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

The traffic assessment of the development options has been conducted in accordance with the RMS *Guide to Traffic Generating Developments* (October 2002) and the RMS Technical Direction 2013/04a published in August 2013.

4.1 *Traffic Generation*

As outlined above, reference is made to the RMS Guide to Traffic Generating Developments and the RMS Technical Direction 2013/04a published in August 2013. The RMS Guide provides guidance on traffic generation rates for various land use developments and other matters relating to traffic and parking.

The following trip generation rates have been adopted for the scale of the planning proposal based upon the RMS Guide and recent updated supplements:

Residential – High Density Residential
Morning peak hour - 0.19 trips per dwelling
Evening peak hour - 0.15 trips per dwelling

The traffic generation for the indicative yield of 515 units is summarised in **Table 3** below.

TABLE 3: ESTIMATED TRAFFIC GENERATION

Land Use	Scale	Rate		Traffic Generation	
		AM	PM	AM	PM
Residential	515	0.19 per dwelling	0.15 per dwelling	98 (19 in, 79 out)	77 (62 in, 15 out)

As shown above the residential development yield is expected to generate **98** and **77** vehicle movements during both the AM (19 in, 79 out) and PM (62 in, 15 out) peak period. It should be noted that this does not include the traffic generation associated with the non-residential component which can be detailed during the DA stage when further information is available. Furthermore, the impact of the traffic generation for the yield of the planning proposal will be assessed during the DA stage, when more detailed information is provided in relation to the proposed scale of the development.

Additionally, consideration must be given to the existing land uses on-site and the net impact of the proposal, such that the estimated traffic generation can be discounted from the existing uses of the site. The assessment during D.A would identify the net impact of the proposal in comparison to the existing land uses.

5 PRELIMINARY ROAD DESIGN CONSIDERATIONS

As part of the proposed development consideration should be made to providing pedestrians and vehicular access into and out of the site in the most safe and convenient way. The site is located along two (2) state roads and as such consideration should be made to the existing traffic generation along the nearby state and local roads and the impact of the traffic generated from the proposed development.

The site is expected to provide three (3) basement car parking areas, it is currently unknown if the basement car park arrangement will provide circulation of vehicles between the three basements areas. The impact of the proposed development, namely the traffic generation impact upon the local roads will be completed during the DA stage. As a preliminary assessment the following considerations should be made to provide vehicles and pedestrians a safe and convenient environment:

- Widening of the carriageway width by 3m along Ormond Street from the intersection Gower Street to Parramatta Road to facilitate heavy vehicles and improve two-way passing efficiency with the provision of kerbside parking on both sides of the road.
- Upgrade of the intersection of Ormond street / Gower Street to a roundabout intersection to provide pedestrians safe access to nearby bus stops and Ashfield Park. Furthermore, the provision of a roundabout will allow safe U-turn manoeuvres. The upgrade of the intersection to a roundabout is subject to the assessment of the existing traffic flows in combination to the proposed traffic flows from the proposed development.
- Restriction of Tideswell Street to a left in / left out arrangement with the provision of a concrete median within the Hume Highway. The provision of this is subject to traffic flows under the future development. To retain the existing intersection of Tideswell Street and The Hume Highway the basement car park for Stage 1 will need to facilitate a low level of traffic generation during the AM and PM peak periods.
- Widening of the Hume Highway at the intersection of Gower Street / Hume Highway to provide a dedicated right turn lane into Gower Street with amendments to the signalised intersection phasing.
- No direct vehicular access shall be permitted along the Parramatta Road frontage.

The above preliminary considerations are subject to future assessment of the existing traffic flows in combination with the estimated traffic generation outlined in **Table 3**.

6 CONCLUSION

In view of the foregoing, the subject planning proposal is supported on the grounds of traffic and parking. More detailed design and traffic impact assessment will be required at the DA stage, though important traffic and parking features in support of the proposal include:

- Council's DCP requires the provision of **644** residential spaces while the RMS Guide outlines a residential parking requirement of **540**. It is envisaged that all residential and non-residential car parking will be provided within each Stages basement car park. It should be noted that the number of car parking spaces required for the planning proposal are subject to change based upon detailed design. The car parking requirement and provision for the proposed development can be detailed and further assessed during D.A stage.
- As shown above the residential development yield is expected to generate **98** and **77** vehicle movements during both the AM (19 in, 79 out) and PM (62 in, 15 out) peak period. It should be noted that this does not include the traffic generation associated with the non-residential component which can be detailed during the DA stage when further information is available. Furthermore, the impact of the traffic generation for the yield of the planning proposal will be assessed during the DA stage, when more detailed information is provided in relation to the proposed scale of the development. Additionally, consideration must be given to the existing land uses on-site and the net impact of the proposal, such that the estimated traffic generation can be discounted from the existing use of the site. The assessment during D.A would identify the net impact of the proposal in comparison to the existing land uses and the nearby road network.
- Car parking areas shall be designed in accordance with AS2890.1:2004, AS2890.2:2004 and AS2890.6:2009 where applicable. A detailed review of the access and basement car parking layout will be undertaken during the DA stage.
- Based upon 515 units, **52** residential bicycle parking spaces and **52** residential bicycle visitor parking spaces would suffice in order to achieve the objectives of the DCP.
- Based upon the car parking requirements outlined in **Section 3.1 & 3.2**, the site would require the provision of **26** motorcycle parking spaces based upon the provision of **644** car parking spaces (Council's DCP) or **22** motorcycle spaces based upon the RMS parking requirements. The motorcycle requirements for the non-residential portion of the development can be assessed at the DA stage.
- Council requires all non-residential tenancies that operationally require loading / unloading services to be provided with a loading bay. It is envisaged that all loading / unloading for residential / commercial developments will be undertaken from the basement car park. Furthermore, consideration could be made to provide a combined loading / unloading facilities for the non-residential components which could operate under a Plan of Management. Swept path testing has been undertaken for a 12.5m length Heavy Rigid Vehicle which is the expected largest vehicle that will be required to travel to the site and are reproduced in **Annexure B** for reference.

- Consideration should be made to provide loading bays on the ground floor of the development for either residential or non-residential waste collection and deliveries. The provision of service vehicles within a basement car park requires additional driveway width, headroom (up to 4.5m clear for 12.5m length Heavy Rigid Vehicles) loading bays and circulation areas to facilitate safe and efficient access and egress. Furthermore, consideration could be made to provide a kerbside dedicated loading zones within Tideswell Street/ Gower Street or Ormond Street for the provision of deliveries / waste collection for both residential and non-residential developments subject to Council approval.

ANNEXURE A: SITE PLAN
(SHEET 1 OF 2)



ANNEXURE A: SITE PLAN

(SHEET 2 OF 2)

TYPICAL BASEMENT PLAN



Ormond St Parramatta Rd. Ashfield



1:1000 @ A3

NOTE: ARCHITECTURAL PROPOSAL IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY

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ANNEXURE B: SWEEP PATHS
(Sheet 1 of 4)



HRV Right Turn into Gower Street from the Hume Highway
Tested @ 5km/h
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance



HRV Left Turn out of Gower Street onto The Hume Highway
Tested @ 5km/h
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance

ANNEXURE B: SWEEP PATHS
(Sheet 2 of 4)



HRV Left Turn into Tideswell Street
Tested @ 5km/h
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance



HRV Left Turn out of Tideswell Street
Tested @ 5km/h
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance

ANNEXURE B: SWEEP PATHS
(Sheet 3 of 4)



HRV Left Turn out of Ormond Street onto Parramatta Road
Tested @ 5km/h
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance



HRV Left Turn into Ormond Street
Tested @ 5km/h
Unsuccessful – Vehicle body mounts median strip. Recommended road widening

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance

ANNEXURE B: SWEEP PATHS
(Sheet 4 of 4)



HRV right turn from Gower Street onto Ormond Street

Tested 5 km/h

Successful – Road widening recommended.

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance



HRV left turn from Ormond Street onto Gower Street

Tested 5 km/h

Unsuccessful – Road widening recommended and required.

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm clearance