

Traffic Impact Assessment

Brookvale Oval Redevelopment

Prepared for Manly Warringah Sea Eagles / 21 October 2019

191326 TAAA

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Revision Register

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1.0 Introduction

1.1 Background

Taylor Thomson Whitting (TTW) has been commissioned by Manly Warringah Sea Eagles (MWSE) to provide traffic engineering services suitable for a Development Application for the Brookvale Oval Redevelopment. The redevelopment intends to provide upgraded facilities for training and staff, as well as better amenity for patrons with improved seating arrangements.

1.2 Scope

This Traffic Impact Assessment (TIA) has been developed to assess and address the traffic and transport impacts of the proposed development. This report covers the following areas:

- Site access
- Traffic generation
- Car parking
- Public and active transport
- Service Vehicles and loading

2.0 Existing Conditions

2.1 The Site

2.1.1 Site Location

Brookvale Oval is located on Pittwater Road within the Northern Beaches Council Local Government Area. The site is bounded by Federal Parade to the north, Pine Avenue to the east, Alfred Road to the west and Pittwater Road to the south. The site currently contains an at grade car park located in the south-west of the site which is accessed by Alfred Road.



Figure 2.1: Site Location

Base map source: Nearmap

2.2 Road Network

Pittwater Road is a state road located adjacent to the southern boundary of the site and serves as a major through route for the Northern Beaches. In the vicinity of the site there are largely two through travelling lanes in each direction, with a bus lane eastbound and various turning lane introduced at intersections. During peak hours two-way traffic volumes within the vicinity of the site are in the order of 2,500 vehicles.

Alfred Road is a local road located to the west of the site. In the vicinity of the site there is one travelling lane in each direction with parallel parking located on the west kerbside and angled parking on the east kerbside. Alfred Road connects to Pittwater Road through a signalised intersection and provides some vehicular access to St Augustine's College.

Pine Avenue is a local road located to the east of site with a travelling lane in each direction. Parallel parking is located on the east kerbside and angled parking on the west kerbside. Pine Avenue connects to Pittwater

Road via a signalised intersection.

2.3 Car Parking

2.3.1 Off Street Parking

There is an existing at grade car park accessed by Alfred Road. This car park is not formally line-marked and consists of unsealed gravel, it provides 45 car parking spaces.

Bicycle parking is available at the northern Alfred Road entrance to the oval in the form of two bicycle rails at the north-west of the site.

2.3.2 On Street Parking

Within the vicinity of the oval there is largely unrestricted on street parking. Some restricted parking is located as shown in Figure 2.2.

Accessible parking is available in the form of on street parking adjacent to the site on Alfred Road and Pine Avenue.



Figure 2.2: On Street Parking Capacity and Restrictions

2.3.3 Game Day Operation

During Game Day, patrons typically park within the surrounding on street parking and within three private car parks that are bring operated by Manly Warringah Sea Eagles (MWSE) as follows (refer to Figure 2.3):

- Ken Arthurson (accessed from Alfred Road) at the south-east of the site.
- Pine Avenue Grass Reserve (accessed from Pine Avenue) at the east of the site.
- St Augustine's School (accessed from Gulliver Street) located off site to the west.

A parking survey was conducted during Saturday the 31st of August during a National Rugby League match at the Oval. On street parking capacity during this period reached 90% or greater in most surrounding streets indicating that spectators utilise on street parking to access the Oval.



Figure 2.3: Game Day Parking Locations



Figure 2.4: On Street Parking Occupancy During Match Times

2.4 Public Transport

Brookvale Oval is serviced by public bus services that travel along Pittwater Road and Warringah Road. Figure 2.5 illustrates these local bus routes.

The nearest bus stops are located on both sides of Pittwater Road, near the southern entry to the site. Additional bus stops are located to the north of the site on both sides of Warringah Road (approximately 500m away). Table 2.1 details the public bus frequency during peak periods.

Express limited stop bus services to and from the Sydney CBD are provided at Warringah Mall which is located 12 minutes' walk away from the site. This includes the B Line and L90 bus routes. The B Line bus services provide high frequency services during peak with high capacity double decker bus vehicles.



Figure 2.5: Local bus routes

Image source: Transport NSW Bus Network Map

Route	Destinations	Approximate Frequency		
193	Warringah Mall to Austlink via Frenchs Forest	Every 30 minutes		
280	Chatswood to Warringah Mall	Every 15 minutes		
132	Warringah Mall to Manly via North Balgowlah*	Every 20 minutes		
146	Wheeler Heights to Manly* Every 60			
151	City QVB to Mona Vale*	Every 3 hour		
158	Cromer to Manly*	Once per day		
169	Manly to City Wynyard via Narraweena*	Every 30 minutes		
178	City Wynyard to Cromer Heights*	Every 30 minutes		
180	180 City Wynyard to Collaroy Plateau* Even			
185	5 Warringah Mall to Mona Vale via Warriewood* Every 30 min			
199	Palm Beach to Manly*	Every 15 minutes		
188	City QVB to Avalon Beach*	Every 30 minutes		
E78	City Wynyard to Cromer Heights (Express Service) * Every 20 m			
E79	City Wynyard to Wheeler Heights (Express Service) *	Every 20 minutes		
E69	E69 Manly to City Wynyard via Narraweena (Express Service) * Every			

Table 2.1: Public Bus Trip Frequency during Peak Periods
Data source: Transport for NSW

* PrePay- Only

2.5 Active Transport

2.5.1 Pedestrian Facilities

Footpaths are generally located on all kerbsides of the local roads within the vicinity of the site. Signalised pedestrian crossings at the intersection of Pittwater Road with Pine Avenue are provided. Unsignalised pedestrian crossings are also provided along Alfred Road to service St Augustine's School and the Oval.

The bus stops at both sides of Pittwater Road next to the site are equipped with seats.

2.5.2 Cycling Facilities

There are some formalised cycling facilities near to the site. A formal shared path is provided to the south of the Oval adjacent to Pittwater Road that leads to the north of the Oval site. Bicycle parking is provided on the Alfred Road entrance to the Oval. As part of the Northern Beaches Bike Plan, future Council plans propose to link the Brookvale Oval site to formal off road bicycle paths located to the south on Pittwater Road. Figure 2.6 provides an extract of the RMS Cycleways map and Figure 2.7 provides the Northern Beaches Bike Plan surrounding the site and local area.



Figure 2.6: Local cycling facilities

Image source: RMS Cycleway Finder (accessed: 26th September 2019)



Figure 2.7: Northern Beaches Bike Plan

Image source: Northern Beaches Council (accessed: 26th September 2019)

2.6 Travel Characteristics

2.6.1 Journey to Work

Journey to Work (JTW) data provides an estimate of employee travel modes into and out of the local areas defined by Travel Zones (TZ). The site is located within TZ 2143 "Brookvale" as shown in Figure 2.8. Travel mode share to the site indicates that 68% of workers within the TZ travel as car drivers, with 15% travelling on the bus network and 8% as car passengers.



Figure 2.8: Travel Zone 2143 Extents

Table 2.2¹ shows an assessment of travel mode share in the surrounding area. 'Mode15' categorisation of travel modes (as listed in the left column) is used for a clearer and simpler assessment of key travel modes through allocation of a primary mode when multiple modes have been used in one trip. A summary of key mode categories is also provided in Table 2.3.

¹ Mode share table excludes responses for "worked at home", "did not go to work", and "mode not stated", and excludes categories with zero responses.

Travel mode (JTW Mode15)	Mode share (%)		
Train	2.3%		
Bus	15.0%		
Ferry	0.3%		
Тахі	0.0%		
Car Driver	68.3%		
Car Passenger	7.7%		
Truck	0.0%		
Motorbike	1.1%		
Bicycle	0.3%		
Other Mode	0.0%		
Walked Only	5.0%		
Total	<u>100.0%</u>		

Table 2.2: Journey to Work dataSource: JTW Table 15: DTZ by Mode 235

Table 2.3: Journey to Work summary

Mode Summary ²	Mode Share (%)
Private Vehicle (car, taxi, truck, motorbike)	77.0%
Public Transport (train, bus, ferry)	17.7%
Active Transport (bicycle, walking)	5.3%
Total	<u>100.0%</u>

2.6.2 Travel Mode Survey

Staff

An online survey was distributed to staff at the existing Brookvale Oval and Manly Warringah Sea Eagles offices in Narrabeen. A total of 6 and 25 responses were received from current staff at Brookvale Oval and the Narrabeen site respectively. The results indicated that 83% of staff at Brookvale Oval and 100% of staff at the Narrabeen site currently travel as a car driver. The second most common mode of transport was via motorcycle.

² Mode summary table excludes "other mode" as unidentified data.

Spectators

An intercept survey was conducted of spectators to a match at the Oval on Saturday the 31st of August 2019. The results of this travel mode indicated that the most common travel modes were car (57%) and bus (16%), refer to Figure 2.9 for the travel mode split. This is likely due to the site's location adjacent to Pittwater Road which serves as a major bus route through the Northern Beaches (refer to Section 2.4).



Figure 2.9: Spectator Travel Mode Split

3.0 Proposed Development

The project includes the redevelopment of the existing Brookvale Oval to provide a Centre of Excellence and an upgraded 3,000 seat covered grandstand for the Manly Warringah Sea Eagles NRL Club. The development will provide up-graded facilities for the oval; consolidate training, rehabilitation and administration facilities; and provide better amenity for patrons. The development also includes provision of a community room to serve as a flexible education space to be accessed by community groups outside of business hours. Upon completion the site is anticipated to accommodate in the order of 36 players and 50 staff during typical non-game days. The proposed development includes formalisation of existing car park comprising 45 spaces and proposed additional 15 car parking spaces. The overall parking provision would be 60 car spaces.



Figure 3.1: Site Plan prepared by Hassell

3.1 Site Access

Site access will be as per the existing conditions, with the on site car park accessed by the existing Alfred Road driveway to the south-east of the site opposite Gulliver Street.

Loading and service vehicles will access the oval from Alfred Road opposite Federal Parade as per the existing scenario. Due to constraints of existing trees on site and location of the existing waste facility, this access point must be maintained. Timing of these service vehicle movements will be outside of school peak pick up and drop off times.

During a non-game day, loading vehicles including food trucks up to 6.4m will access the site through the

northern concourse area of the grandstand. These service vehicles will enter and exit the site in a forward direction. Bariatric ambulance vehicles will also be able to access this northern concourse area. A turning path analysis of this area has been conducted and is affixed in Appendix A.

3.2 Parking Assessment

3.2.1 Council Requirements

While the site is located within the Northern Beaches Council, in lieu of a Council wide Development Control Plan (DCP) the former Warringah Council's DCP applies to the site. This DCP stipulates that off street parking requirements need to take into account the:

- Hours of operation of the development;
- Availability of alternative car parking; and
- Availability of public transport.

As there is no specific parking requirement within the DCP for this type of use, a site specific parking demand has been conducted to determine requirements.

3.2.2 Parking Demand

The on site parking demand estimate has been determined based on the available travel mode information as discussed in Section 2.6.

Non Game Day

While the existing staff at the Narrabeen facility experience a high level of car usage, the availability of public transport to this site is limited with the nearest bus stop located over 30 minutes' walk away and there are limited active travel facilities within the vicinity.

As part of the Narrabeen facility staff survey, staff were asked to indicate what their likely mode of travel would be to the Brookvale Oval site once relocated. The results of this survey indicated that 76% of staff would drive to the site, with other modes of transport being 12% walking, 8% riding a bicycle and 4% riding a motorcycle.

While the car driving rate indicated in the staff survey is approximately in line with Journey to Work data which indicates 68% of workers in the area travel as car drivers, JTW indicates that 15% of workers travel via public transport to the area. It is likely that once staff become familiar with the public transport networks adjacent to the site, they will begin to travel via public transport at rates more in line with the JTW data. It can be assumed that the travel mode split to public transport will then adjust to more closely align with the JTW data.

It is expected that the site will experience a higher rate of active travel modes than the JTW data due to the provision of facilities such as changerooms, showers and the bicycle parking currently available on the site, which can be used as end of trip facilities by the staff members and players. This is supported by the results of the staff survey indicated 20% will travel by active transport modes.

As a result of the above, an anticipated mode share split can be assumed as shown in Table 3.1. This anticipated travel mode split is more aligned with the JTW data for the site.

During typical non-game day use it is anticipated that 50 staff and 36 players will be using the facility. With the peak occupancy of the site and the anticipated private vehicle use of 66% as shown in Table 3.1, it can be assumed that a peak parking demand of 57 parking spaces will be generated by the site. Based on the MWSE training field requirements as attached in Appendix B, it is noted that on average, the players are likely to stay on the site for up to four hours in a day. The peak parking demand is therefore expected to occur while the players are on site concurrently with staff. However, generally during the day typical parking demand is expected to be reduced as these players arrive and depart.

Travel Mode	Future Mode Split Indicated by Staff Survey	Journey to Work Mode Split	Anticipated Mode Split	
Car Driver	76.0%	68.3%	66%	
Car Passenger	0.0%	7.7%	0%	
Bus	0.0%	15.0%	10%	
Ferry	0.0%	0.3%	0%	
Train	0.0%	2.3%	0%	
Motorcycle	4.0%	1.1%	4%	
Bicycle	8.0%	0.3%	8%	
Taxi	0.0%	0.0%	0%	
Walk	12.0%	5.0%	12%	

During evening hours, it is expected that up to 40 community members may use the facilities. It is anticipated that peak parking demands at this time would be up to 52 spaces due to the following:

- It is anticipated that peak use of the community facilities will occur in the afternoon and evening following standard working hours.
- The staff travel mode survey indicated that by 5:00 pm 56% of staff had departed work at the current Narrabeen site (arrival and departure times are further discussed in Section 3.3.1), applying this departure rate there would be approximately 38 staff and players on site after standard working hours.
- Accounting for the maximum expected 40 community members there would, therefore, be 78 occupants within the proposed development at the peak evening time.
- Adopting the anticipated car driving mode split of 66% there would, therefore, be up to 52 vehicles requiring parking at this time.

Game Day

In the existing scenario, visitors coming to the oval on a game day largely use on street parking in the surrounding streets and towards the industrial area in East Brookvale as well as off street parking discussed in Section 2.3.3. As this is an occasional use for the site and represents an extreme peak demand, it is anticipated that on street parking will continue to cater for this use in line with the survey outcomes. It is noted that there will be no increase in spectators to the site as the development proposes only to improve amenity of spectators, not provide greater seating capacity.

As there will be no increase in spectators on site, no increase in parking demand during game times is anticipated. An existing Plan of Management is in place that addresses the traffic arrangements around the

site during potential peak capacity, these game day management measures are therefore still relevant to the proposed development.

3.2.3 Parking Provision

A total of 60 on site parking spaces will be provided on the site during normal operation. These spaces will comprise of the existing 45 spaces on site and an extension of this carpark to the north for an additional 15 spaces to account for the demand.

The car park will be managed through signage during operation to ensure spaces are available for staff at the site during working hours and not used by the general public. Parking provided will be designed in accordance with Australian Standards 2890.1 Off Street Parking Facilities.

3.3 Traffic Assessment

3.3.1 Non Game Day

The staff survey conducted on the existing staff at the Narrabeen facility indicated that staff arrive between 5:15am to 9:30am and depart between 12:30pm and 7:00pm. The peak hours occur between 7:30am to 8:30am and 5:30pm to 6:30pm when 39% of staff arrive and 35% of staff depart respectively.

The spread of arrival and departure times and the anticipated number of car drivers (refer to Section 3.2.2), indicates that there would be 22 and 20 vehicles generated during the morning and afternoon peak hours by staff and players. Given the volume of traffic currently on Pittwater Road is in the order of 2,500 vehicles per peak hour, it is not anticipated that the site will have a significant impact on the surrounding road network.



Figure 3.2: Narrabeen Facility Staff Arrival and Departure Patterns

3.3.2 Game Day

It is noted that there will be no increase in spectators as a result of the development and therefore no increase in vehicle trips is expected during game days. Traffic generation on a typical game day represents an occasional peak volume which generally occurs outside of peak hours of the surrounding network.

4.0 Conclusion

This report has assessed the traffic and transport impacts of the proposed Brookvale Oval Redevelopment. The redevelopment proposes to improve spectator amenity at the site and provide improved training and administration facilities.

The trip generation of the development has been calculated at an increase of 22 vehicles in the morning peak and 20 vehicles in the afternoon peak. As this is a relatively minor increase in vehicles, it is anticipated that the development will have limited impact on the surrounding road network. Vehicle impact is also likely to be decreased due to the site supporting sustainable travel through facilities which can be used as end of trip facilities.

The parking demands have been calculated based on existing Journey to Work data conducted within the area and staff surveys that have been distributed to existing Manly Warringah Sea Eagles staff at the Narrabeen facility. It is anticipated that peak parking demand will reach up to 57 spaces during normal operation. This parking demand is proposed to be met by the 45 space existing car park and a 15 space extension on this car park, resulting in 60 car parking spaces on site in total.

The proposed grandstand will replace the existing seating and standing arrangement resulting in no increase in spectator capacity at the site. As a result, there will be no increase in trip generation and parking demand generated by the site during game times.

Overall the proposed development is considered suitable with regards to traffic and transport provision and impacts and can be recommended for approval on these grounds.

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Appendix A

Turning Path Analysis



P3 PRELIMINARY P2 PRELIMINARY



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BROOKVALE OVAL REDEVELOPMENT



Appendix B

MWSE Training Field Requirements

Description	Period	Days Required/week	Hours required/day	Hours/week	Combined hours	Purpose
	7 weeks	4	2	8		Full squad
		6	2	12		rehab (running)
Pre Season (early Nov - Mid Dec)		1	2	2		defence skills
		2	1	2		kicking
		1	1	1		goal kicking
		-	-	-		Full squad
		-	-	-		rehab (running)
Xmas Break (2 weeks)	2 weeks	-	-	-	-	defence skills
		-	-	-		kicking
		-	-	-		goal kicking
		4	2	8		Full squad
		6	2	12		rehab (running)
Pre Season (early Jan - Mid Feb)	6 weeks	1	2	2		defence skills
		2	1	2		kicking
		1	1	1		goal kicking
	3 weeks	3	2	6		Full squad
		6	2	12	72	rehab (running)
Trial matches (Mid Feb - Early March)		1	2	2		defence skills
		1	1	1		kicking
		1	1	1		goal kicking
		1	2	2		captains run
		3	2	6		Full squad
	28 weeks	6	2	12	616	rehab (running)
Normal Season (Mid March - Mid Sept)		1	2	2		defence skills
		1	1	1		kicking
		1	1	1		goal kicking
		-		-		Full squad
	6 weeks	2	2	4		rehab (running)
End of season break (Mid Sept - End Oct)		-	-	-	24	defence skills
		-	-	-		kicking
		-	-	-		goal kicking
Total	52 weeks				1,037	

Manly Warringah Sea Eagles - Training field requirements

NB: Excludes:

Game day requirements (i.e. play between 10 - 12 home games between mid March and early Sept each year)

Captains runs for both home games and those games not played interstate (2 hrs x 22 matches - day before game day)