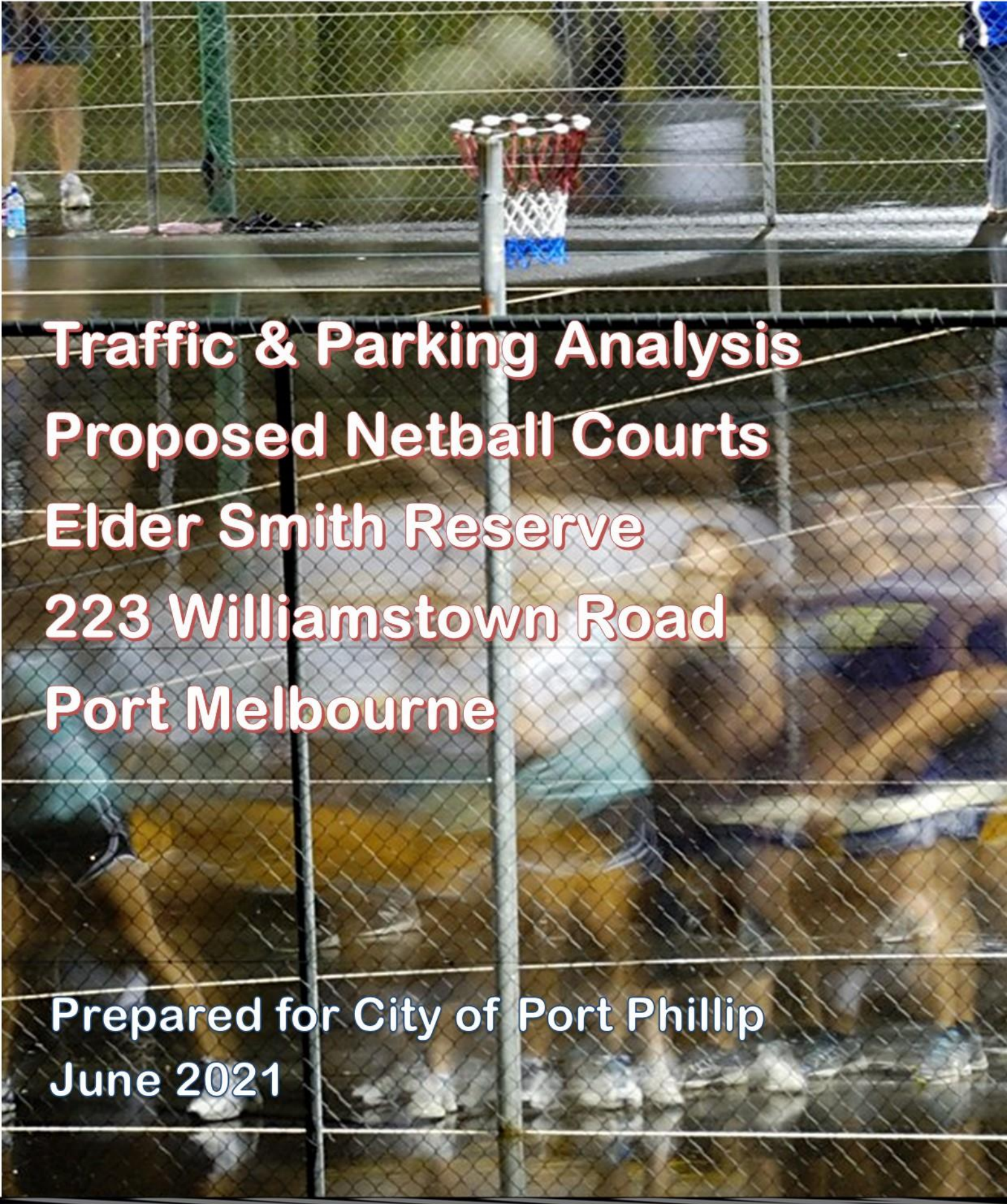


Traffic & Parking Analysis
Proposed Netball Courts
Elder Smith Reserve
223 Williamstown Road
Port Melbourne

Prepared for City of Port Phillip
June 2021

movendo
engineering / science / technology / research

PO Box 540, South Melbourne 3205

tel 0433 058 833 ABN 15162173551

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1 INTRODUCTION

1.1 OVERVIEW

The City of Port Phillip is currently exploring opportunities to develop Elder Smith Reserve (located at 223 Williamstown Road in Port Melbourne) to house new netball courts and a sport pavilion. A 26-space carpark is also proposed, as part of the development, to assist with the parking demand associated with netball. This "Traffic and Parking Analysis" Study informs the Council's feasibility planning process.

A preliminary potential layout has been prepared, as shown in Figure 1.

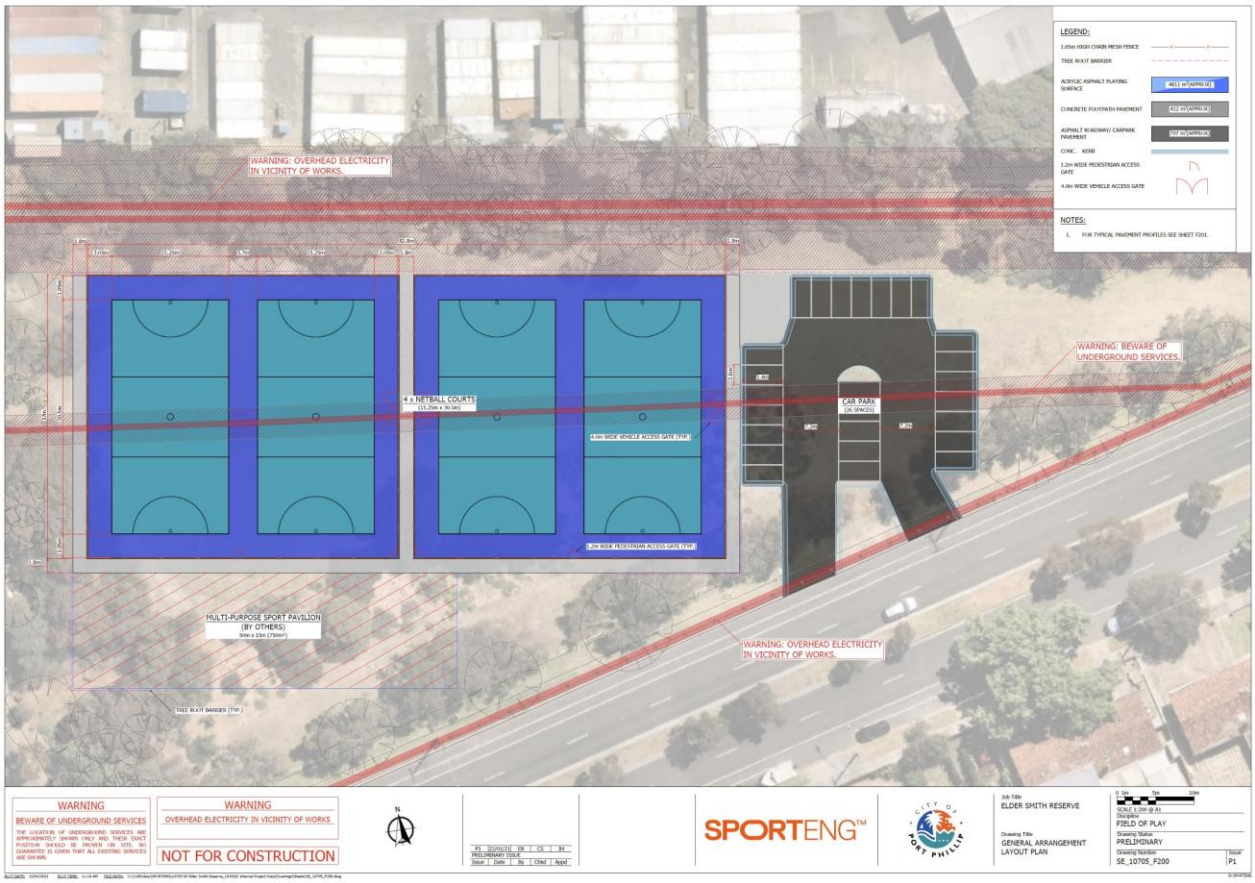


Figure 1: Preliminary Conceptual Netball Courts Layout – Elder Smith Reserve

1.2 STUDY OBJECTIVES

The study aims to establish an accurate baseline of current parking and traffic demands in the area surrounding Elder Smith Reserve and establish realistic future parking and traffic demand parameters for the netball courts development and review the appropriateness of access arrangements in the area. In doing so, consideration of the following issues is required:

- Determination of the adequacy in the quantity of parking available (taking into consideration both the proposed on-site carpark, as well as on-street parking on Williamstown Road);
- Examination of likely traffic volume and access routes when Netball practice and/or competition is held at the reserve; and
- What form of traffic access is required from Williamston Road into/out-of Elder Smith Reserve.

To this end, both carparking and traffic data collection was undertaken on both a weekday and a weekend day – to coincide with the likely busiest periods when future Netball training and competition would take place.

In addition, to enable realistic forecasting of future traffic and parking demands at Elder Smith Reserve, important insights into travel behaviour were used from three recent studies undertaken by Movendo Pty Ltd titled:

- "Traffic and Parking Analysis – Park Facilities Upgrade, RF Julier Reserve, Port Melbourne", dated 5 March 2020 (the "RF Julier Reserve study"). This study was prepared for the City of Port Phillip.
- Two studies prepared for Development Victoria: "State Netball and Hockey Centre Traffic & Parking Surveys", dated August 2017; and the "State Netball and Hockey Centre Traffic & Parking Analysis", dated December 2017 (the "State Netball Centre studies").

Each of the studies considered parking and traffic demands in association with the use of Netball courts. The RF Julier Reserve study examined demands associated with Netball training, whereas the State Netball Centre study focussed on Netball competition. The relevance of each of these studies and the specific data that has been used is discussed in the next chapter.

1.3 STUDY AREA

Figure 1 shows the location of Elder Smith Reserve and the surrounding street context – which forms the study area. The figure also highlights the proximity of RF Julier Reserve (the site of existing Netball courts).

The study area, for the purposes of undertaking parking surveys, is the north side of Williamstown Road from Todd Road (approximately 200 metres west of Elder Smith Reserve) to Smith Street (approximately 240 metres to the east of Elder Smith Reserve). The extent of the parking survey area represents an approximate 2-3 minute walk both east and west of Elder Smith Reserve.



Figure 2: Study Area

1.4 SENSITIVITY TESTING

The parking and traffic analysis presented in this report is based on the behaviour of Netball players captured in the recent RF Julier Reserve study (for training) and the State Netball Centre studies (for competition). These two study sets represent opposite ends of possible travel behaviour choices.

The RF Julier Reserve study uncovered travel behaviour that was reflective of very low car usage and dependency. This is not surprising, as the two courts at that location are clearly attracting most of their patronage from a local catchment. The surrounding residential catchment offers safe, convenient and valid alternatives to walk, cycle and use scooters for travel to/from the Netball courts. In contrast, Netball players attending the SNHC for competition were found to rely almost exclusively on car access – with near 100% car dependency

Within this context, it is acknowledged that the proposed new Netball courts at Elder Smith Reserve may attract patronage from a far wider catchment (particularly when used for competition) and thus attract more car usage than that experience at RF Julier Reserve. Furthermore, even players that attend intra-week training sessions (who may previously have walked/cycled to nearby RF Julier Reserve) may elect to be driven, given the real / perceived hazard of crossing Williamstown Road to reach Elder Smith Reserve.

Accordingly, this report uses the travel behaviour traits from the RF Julier Reserve and State Netball Centre studies as a starting point and provides a range of potential future travel behaviour scenarios for Elder Smith Reserve. Thus, there are increasing degrees of car dependency considered for training (higher than RF Julier Reserve). There are also decreasing degrees of car dependency used for competition (a 'realistic scenario' which is lower than SNHC and a 'worst-case' scenario that assumes 100% car dependency as per SNHC). This sensitivity testing provides a more thorough and broad range of possible impacts to help understand the likely implications in terms of parking demand and traffic movements at Elder Smith Reserve.

1.5 KEY FINDINGS

1.5.1 PARKING

The assessment presented in this report generally assumes that attendees at the proposed Netball courts at Elder Smith Reserve are likely to exhibit travel behaviour choices that lie somewhere in between the RF Julier Reserve and SNHC case studies – perhaps not showing the same low car dependency as RF Julier Reserve but also highly unlikely to be as car dependent as SNHC (which draws metropolitan wide and statewide attendances). Notwithstanding the above, worst-case scenarios have been examined involving 100% car use by attendees during competition with full overlap of parking demand associated with two games on each of the four courts.

The findings from the survey program and subsequent analysis suggest that the combined supply of proposed on-site parking and existing on-street parking will adequately cater for the parking demands likely to be generated by the proposed Netball courts at Elder Smith Reserve. Twentysix parking spaces will be provided on-site – which easily satisfies the likely requirement during training and for most of the parking demand generated during competition (under a 'realistic scenario' where 66% of attendees drive to Elder Smith Reserve). At the future peak competition time, spare on-street parking capacity exists, primarily on the north side of Williamstown Road, to accommodate vehicles who may not be able to secure on-site parking. However, under an unlikely worst-case scenario (where 100% of attendees drive to Elder Smith Reserve and Netball competition coincides with a busy day at the adjacent Edwin Flack Melbourne Grammar Sports Fields) there may be an occasional need to use spare parking spaces located on the south side of Williamstown Road including, in rare extreme circumstances, some parking spaces adjacent to residential frontages.

During training, the parking demand will likely lie in the range of 14 parking spaces (reflective of RF Julier Reserve travel behaviour) and 28 spaces (reflective of a scenario where twice as many Netball players are driven to training and vehicles park for the duration of training). This parking demand range can be easily met by the availability of 89 parking spaces at the busiest time for Netball training (comprising the proposed on-site supply of 26 spaces plus the presence of 63 unoccupied on-street parking spaces).

In contrast, the parking demand during competition will likely lie in the range of 48 parking spaces (partly reflective of SNHC travel behaviour – but with no overlap of parking demand for games held on a single court) and 120 spaces (the worst-case scenario reflective of SNHC travel behaviour with 100% driving – and with full overlap of parking demand for two successive games on a single court). The 'game overlap' criterium provides the ideal measure of highest concurrent parking demand, as it assumes that one full set of games is underway while attendees at the preceding set of games has not had sufficient to depart the Elder Smith Reserve. The lower end of the parking demand range (48 spaces) can be easily met by the availability of 74 parking spaces at the busiest time for Netball competition (comprising the proposed on-site supply of 26 spaces plus the presence of 48 unoccupied on-street parking spaces). However, under the absolute worst-case parking demand scenario when 120 spaces may be required (namely the unrealistic situation where 100% of players/spectators/officials/staff drive to the Netball Courts and there is also a full overlap of parking demand associated with two Netball games on each of the four courts) there would be insufficient parking available along the non-residential frontages of Williamstown Road. This would require some vehicles to park across residential frontages on the south side of Williamstown Road or to use parking along non-residential frontages on other side streets, such as Prohasky Street and Smith Street.

The parking demand analysis is summarised in Table 1. The table presents the forecast demand and the available supply. The supply represents the combined on-site and on-street parking availability at the busiest times for training (4-5pm weekday) and for competition (12noon-1pm Saturday) respectively.

Table 1: Parking Demand Analysis for Netball Training & Competition (Forecast Demand & Available Supply on Weekday Evening & Saturday)

Period	Parking Demand (Likely Range of Spaces Required)	Parking Supply (Availability at Busiest Time)
Netball Training (weekday evening)	14 to 28 parking spaces	89 parking spaces (available between 4-5pm)
Netball competition (Saturday)	48 to 120 parking spaces	74 parking spaces (available between 12noon-1pm)

Note: Parking Supply includes 25 spaces adjacent to open space on the corner of Howe Pde and Williamstown Rd

1.5.2 TRAFFIC

The number of vehicle trips generated by the proposed Netball courts development at Elder Smith Reserve is forecast to be comparatively low and will have no material impact on the operation of Williamstown Road. The access point to the proposed on-site parking will operate satisfactorily either as a fully-directional access point (with both left and right turn movements permitted) or as a left-in / left-out operation (as per current conditions on Williamstown Road). Adequate U-turn opportunities exist both west and east of Elder Smith Reserve to support a left-in / left-out access arrangement.

2 REFERENCE STUDIES AT RF JULIER RESERVE (TRAINING) & SNHC ROYAL PARK (COMPETITION)

Three recent studies (for RF Julier Reserve and the SNHC) have been used to help inform the likely impact associated with the Netball courts proposal at Elder Smith Reserve, as indicated in the introduction. Combined, these three studies provide realistic profiles of conditions that are likely to be experienced during Netball Training and Competition times. The key findings from the studies are presented below.

2.1 MODE OF TRAVEL – RF JULIER RESERVE

RF Julier Reserve is located approximately 400 metres from Elder Smith Reserve, and it houses two netball courts that are used for training on several weekday evenings. The March 2020 RF Julier Reserve study examined multiple aspects in relation to attendance at the two netball courts, including parking and traffic generation characteristics during training. These have been used as a starting point for the Elder Smith Reserve study – given the proximity and likely similarities of Netball players that will attend Elder Smith Reserve for training. The surveys for the RF Julier Reserve study were undertaken over 3 separate days. The duration of training varied between 1 hour on Tuesday, 4 hours on Wednesday and 3 hours on Thursday. The surveys established that the majority of players attending Netball training arrive on foot, by bicycle or using scooters. Specifically, on each day around two-thirds of girls attending training arrived by active travel (walk, cycle and scooter). The remainder arrived by cars (with parents/carers either stopping a few minutes to drop-off or parking in surrounding streets). The surveys also revealed that maximum attendance was 52 girls for the two Netball courts and around 70% of players arrived in the first hour of training. The busiest traffic generation rate was found to be 0.23 vehicles per player per hour.

Figure 3 summarises the mode choices of those attending Netball training.

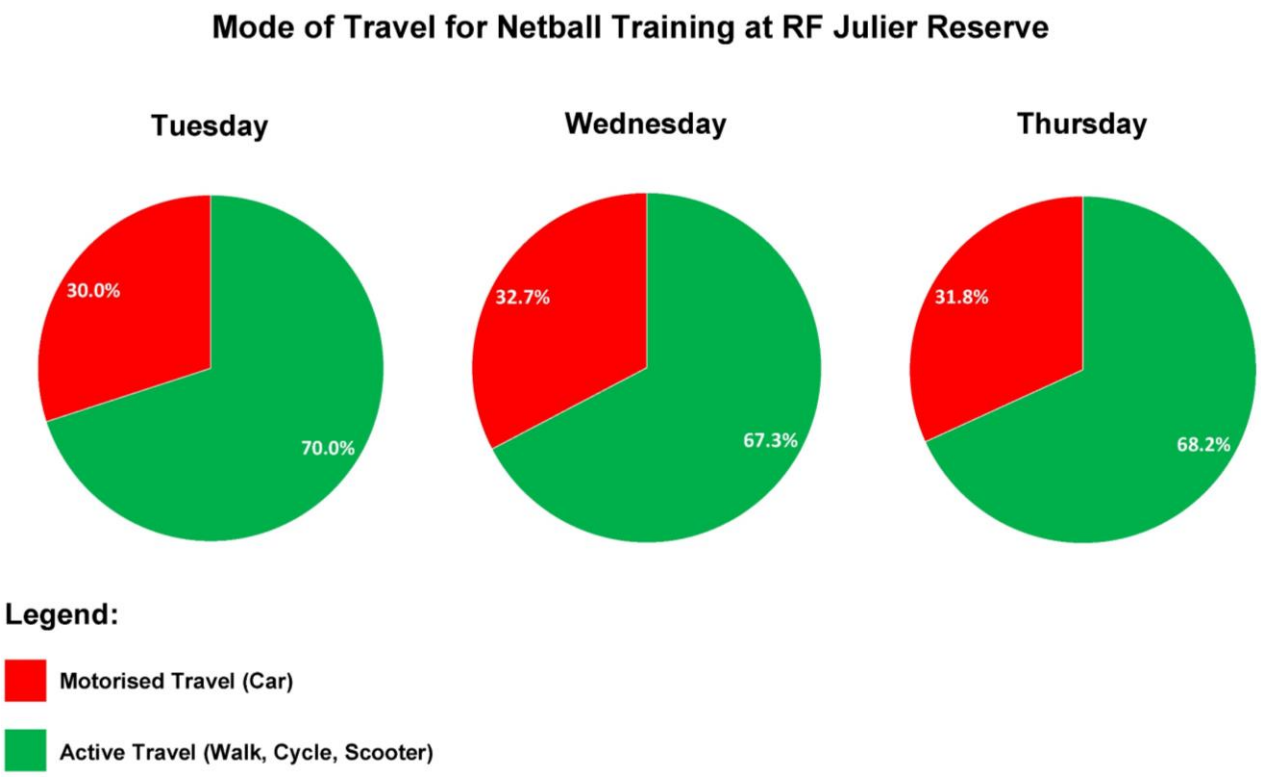


Figure 3: Travel Mode on Each Survey Day: "Motorised" versus "Non-Motorised"

Traffic Generation Assumptions Adopted for Elder Smith Reserve (during Training):

- Maximum Players at Training = 26 per Netball Court
- Proportion of Netball Players Arriving by Car (Drop-off & Parking) = 33%
- Hourly Arrival Rate = 70% of all players arrive in a single hour
- Traffic Generation Rate = 0.23 vehicles per player per hour (combined rate for both 'drop-off vehicles' and 'vehicles that arrive and park')
- A sensitivity test will assume that the traffic generation rate is twice as high as the rate established for RF Julier Reserve – namely 0.46 vehicles per player per hour.

2.2 PARKING – RF JULIER RESERVE

As indicated in the previous section, only a modest number of Netball players (around 33%) were found to use cars for the trip to training at RF Julier Reserve. Furthermore, around 45% of the vehicles that drove players to the Netball courts simply made a drop-off and then drove away (and hence did not generate long-term parking demand). Accordingly, only around 55% of the vehicles that drove players to the courts ended up parking in streets surrounding RF Julier Reserve. Within this context, the maximum 'parking demand' on a 'per court' basis was found to be 3.5 cars per Netball court.

Assuming that the players that will train at Elder Smith Reserve are from a similar catchment as RF Julier Reserve (and make similar travel choices as current players at RF Julier Reserve) then it is realistic to adopt 3.5 cars per Netball court as the parking rate for the lower end of sensitivity testing.

Parking Generation Assumptions Adopted for Elder Smith Reserve (during Training):

- It will be assumed that during training the parking generation rate associated with each Netball court will be 3.5 cars per Netball Court. (this rate reflects the significant proportion, 45%, of the vehicles that drove players to the Netball courts simply made a drop-off and then drove away – and hence did not generate long-term parking demand).
- A sensitivity test will assume that the parking generation rate is twice as high as the rate established for RF Julier Reserve – namely 7 cars per Netball Court.

2.3 COMPETITION ATTENDANCES – SNHC ROYAL PARK

The State Netball and Hockey Centre (now officially known as Melbourne Sports Centres) is located just north of Melbourne's CBD in Royal Park, Parkville. In contrast to RF Julier Reserve, the State Netball and Hockey Centre (SNHC) is a venue of statewide significance and has been used for national and international events. The State Netball Centre study has been used to provide detailed insights into player/spectator/staff characteristics that exist during competition times (and can thus be used for forecasting the number of future attendees at Elder Smith Reserve).

The SNHC centre features two outdoor hockey fields and five indoor and four outdoor netball courts. In 2017 Development Victoria commissioned Movendo Pty Ltd to undertake extensive field survey work to support and inform the development of scenarios for expansion and redevelopment of the site. The survey program helped to define the existing parking and traffic demands at the busiest Netball competition times. In March 2019, the centre began undergoing a multi-million dollar redevelopment which involves replacement of the outdoor netball courts with six indoor courts, creation of an indoor hockey facility, a high-performance gymnasium and the Sports House 2 building, which provides administrative offices for Netball Victoria and Hockey Victoria. The redevelopment is expected to conclude in late 2021.

Detailed parking surveys were undertaken on Saturday 10 December 2016 to understand the parking dynamics (arrival, departure and demand) during Netball competition. A total of 55 Netball games were held on that day and the following findings are relevant for Elder Smith Reserve:

- Proportion of Netball Players Arriving by Car (Drop-off & Parking) = nearly 100%
- Nearly 8% of vehicles that drove to SNHC were engaged in drop off / pick-up activities and 'left' the site without parking.
- Parking demand (based on 100% car mode share and age mix of Netball players) = 12 cars per game + 6 cars for officials per day per court

The 100% car dependency exhibited at SNHC is considered an unrealistic / worst-case scenario, in the context of the likely nature of Netball competition to be held at Elder Smith Reserve. It is expected that competition games at the Elder Smith Reserve courts will probably attract a greater local presence from the surrounding residential catchment compared with the absence of such a 'local catchment' in the area surrounding SNHC.

Notwithstanding the above likelihood, two scenarios will be examined in the interests of undertaking a conservative analysis. The scenarios will be the following:

- **Realistic Scenario (two-thirds of attendees use cars)**
  Under this scenario, the proportion of Netball Players arriving by car will be two-thirds. This proportion lies between the one-third who drive to training at RF Julier Reserve and the 100% who drive to competition at SNHC. The adoption of two-thirds mode share for car travel recognises that competition players will attend from a wider regional catchment compared to training but will not exhibit the car dependency as SNHC (which draws metropolitan wide and statewide attendances). Furthermore, it will be assumed that one vehicle trip for each Netball game is in the form of a drop-off (this reduces long-term parking demand but not the traffic volume generated). This drop-off assumption for Elder Smith Reserve is much lower than the 45% who drop-off for training at RF Julier Reserve and slightly higher than the 8% who drop-off during competition at SNHC.
- **Worst-case Scenario (100% of attendees use cars)**
  Under this scenario, the proportion of Netball Players arriving by car will be as per the SNHC – namely 100%. A rate of 10% will be assumed to drop-off only (similar to that measured during competition at SNHC).

Assumptions for these two scenarios are provided over the page.

Parking & Traffic Generation Assumptions Adopted for Elder Smith Reserve (during Competition):

The assumptions for the 'realistic' and 'worst-case' scenarios are shown in Table 2.

Table 2: Parking & Traffic Scenarios for Competition

Scenario	Parking Generation	Traffic Generation
Realistic Scenario (two-thirds use cars)	The SNHC parking rate (based on 100% drive mode share) was established at 12 cars per game + 6 cars for officials per day per court. Under this 'realistic' scenario with a lower drive mode share of 66% the parking rate will be assumed to be 8 spaces per game plus 4 spaces for officials / staff.	Traffic generation rate is 14 vehicle trips per game; comprising: • 10 car trips for players/spectators (of which 8 park and 2 are drop-off which arrive and depart in a single hour); and • 4 vehicle trips per game for officials / staff (these are assumed to park for several hours over multiple games).
Realistic Scenario Sensitivity Test	A sensitivity test will assume that the parking generation rate is twice as high per game – on the basis that there is full overlap within a single hour of the parking demand generated by two games on each of the four courts.	No sensitivity test required (the standard forecast maximum hourly traffic volume on competition day will assume full overlap of two games on each court – 20 car trips occurring within a single hour plus 4 car trips for officials / staff on each court)
Worst-case Scenario (100% use cars)	The SNHC rate (based on 100% drive mode) will be used – namely 12 cars per game + 6 cars for officials per day per court.	Traffic generation rate is 20 vehicle trips per game; based on: • 14 car trips for players/spectators (of which 12 park and 2 are drop-off which arrive and depart in a single hour); and • 6 vehicle trips per game for officials / staff (these are assumed to park for several hours over multiple games).
Worst-case Scenario Sensitivity Test	A sensitivity test will assume that the parking generation rate is twice as high per game – on the basis that there is full overlap within a single hour of the parking demand generated by two games on each of the four courts.	No sensitivity test required (the standard forecast maximum hourly traffic volume on competition day will assume full overlap of two games on each court – 28 car trips occurring within a single hour plus 6 car trips for officials / staff on each court)

3 SURVEYS & IMPACT ANALYSIS

3.1 PARKING

3.1.1 OVERVIEW

Parking occupancy surveys were undertaken on Williamstown Road, between Todd Road and Smith Street, to determine typical utilisation of parking spaces at the busiest times relevant for future Netball training and competition. The days and times selected for the surveys were Thursday 13 May (3pm to 8pm) and Saturday 15 May (8am to 3pm). The selected times are based on the RJ Julier Reserve and SNHC studies which revealed that training predominantly occurs during weekday evenings (peak arrival hour typically 4-5pm) whilst the busiest competition schedule takes place on Saturdays in the late morning / lunchtime period. The surveys involved the monitoring of parking occupancy at one-hour intervals and covered primarily the north side of Williamstown Road. Surveys only included the south side of Williamstown Road, adjacent to the large open space area on the corner of Howe Parade and Williamstown Road. This area is diagonally opposite Elder Smith Reserve and does not adjoin any residential properties. There are 25 parking spaces in this section of Williamstown Road – and they are mostly empty at the times that correspond to future Netball training and competition. The area in question is shown in Figure 4 (weekday) and Figure 5 (Saturday) both of which highlight the exceptionally low parking occupancy.



Figure 4: Typical Weekday: Parking Supply along South Side of Williamstown Rd (just east of Elder Smith Reserve) Looking East from Prohasky St (left image) & Looking West from Smith St (right image)



Figure 5: Typical Saturday: Parking Supply along South Side of Williamstown Rd (just east of Elder Smith Reserve) Looking East from Prohasky St (left image) & Looking West from Smith St (right image)

The parking occupancy surveys capture the current parking demands on Williamstown Road that are free of Netball impacts. Importantly, the measurements of existing parking demand reflect the influence of existing surrounding land uses. Thus, the surveys reveal the extent to which any spare on-street parking capacity exists, at the likely busiest times when Netball training or competition takes place. Such spare on-street parking capacity may help cater for any parking demand that may spill out from Elder Smith Reserve (that cannot be accommodated by the proposed 26-space on-site parking supply).

3.1.2 PARKING INVENTORY

The 92 parking spaces surveyed in this study are all located adjacent to non-residential frontages and are within a 2-3 minute walk of Elder smith reserve. The total number of parking spaces located on the north side of Williamstown Road, between Todd Road and Smith Street, is 67. The number of parking spaces available on the south side of Williamstown Road, just east of Elder Smith Reserve (adjacent to the open space area) is 25. All parking spaces on the north side of Williamstown Road are free and allow for all-day parking (there is no time limit). The spaces on the south side are signed as quarter-hour parking during business hours on weekdays and unrestricted on weekdays evenings and at all times on weekends. The distribution of spaces is shown in Figure 6 which highlights that 30 of the 67 spaces on the north side of Williamstown Road are located immediately in front of Elder Smith Reserve. It is noted that the proposed development at Elder Smith Reserve includes the provision of 26 on-site spaces and it is thus likely that at least 2 parking spaces will need to be removed to accommodate driveway access into Elder Smith Reserve. However, there is sufficient scope to increase the number of on-street parking spaces on the north side of Williamstown Road (at the eastern end of Elder Smith Reserve) by reducing the length of an excessive 'No Stopping' area (which is around 34 metres in length) on the approach to Prohasky Street. This 'No Stopping' area can be reduced to 20 metres – allowing the provision of 2 additional parking spaces to fully compensate for the removal of any parking spaces further west to accommodate driveway access into the Reserve.



Figure 6: Parking Inventory – Distribution of Parking Spaces in Williamstown Rd near Elder Smith Reserve

3.1.3 THURSDAY 13 MAY 2021

The analysis presented in this section excludes 25 parking spaces on the south side of Williamstown Road and focusses on the north side only, as those are the spaces most likely to be accessed by Netball attendees. The parking occupancy along the north side of Williamstown Road is shown for the full length of the study area (Figure 7) as well as for the smaller section adjacent to Elder Smith Reserve (Figure 8). The figures highlight that, on a weekday, during times when future Netball training is likely to be busiest (mid-afternoon / evening period) the demand for parking is modest in the study area. The parking occupancy was particularly low for the 30 spaces located adjacent to Elder Smith Reserve (which were unoccupied from 6pm onwards). Images of parking conditions at the front of Elder Smith Reserve and in the adjoining sections are shown in Figure 9 to Figure 13.

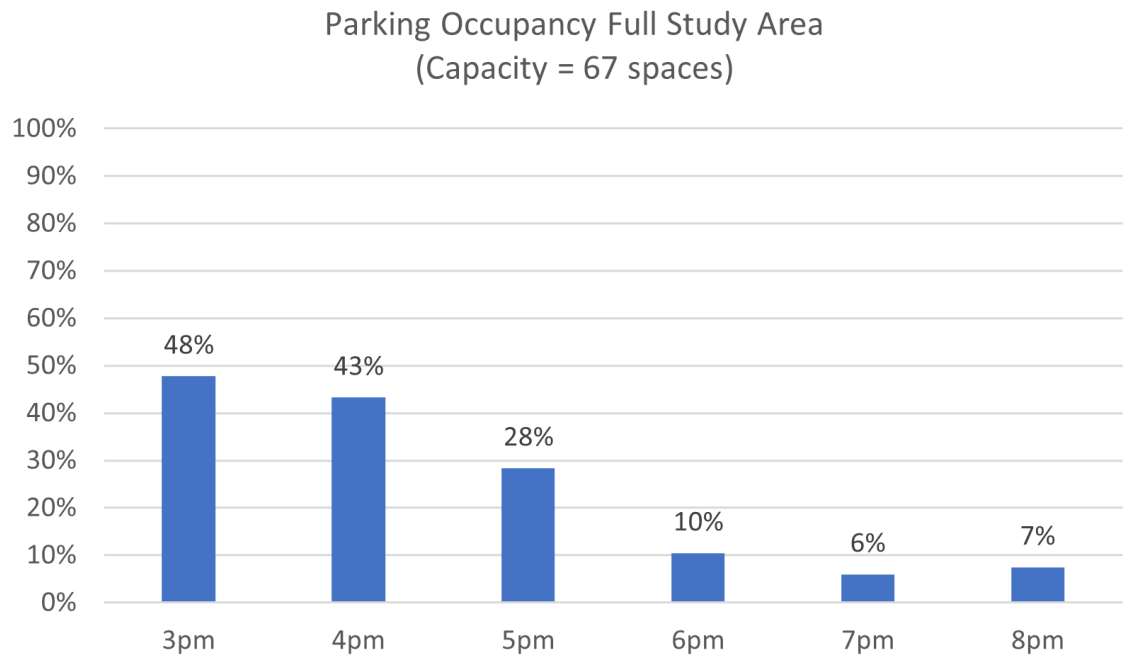


Figure 7: Thursday 15 May: Williamstown Rd Parking Occupancy (Full Study Area: Todd Rd to Smith St)

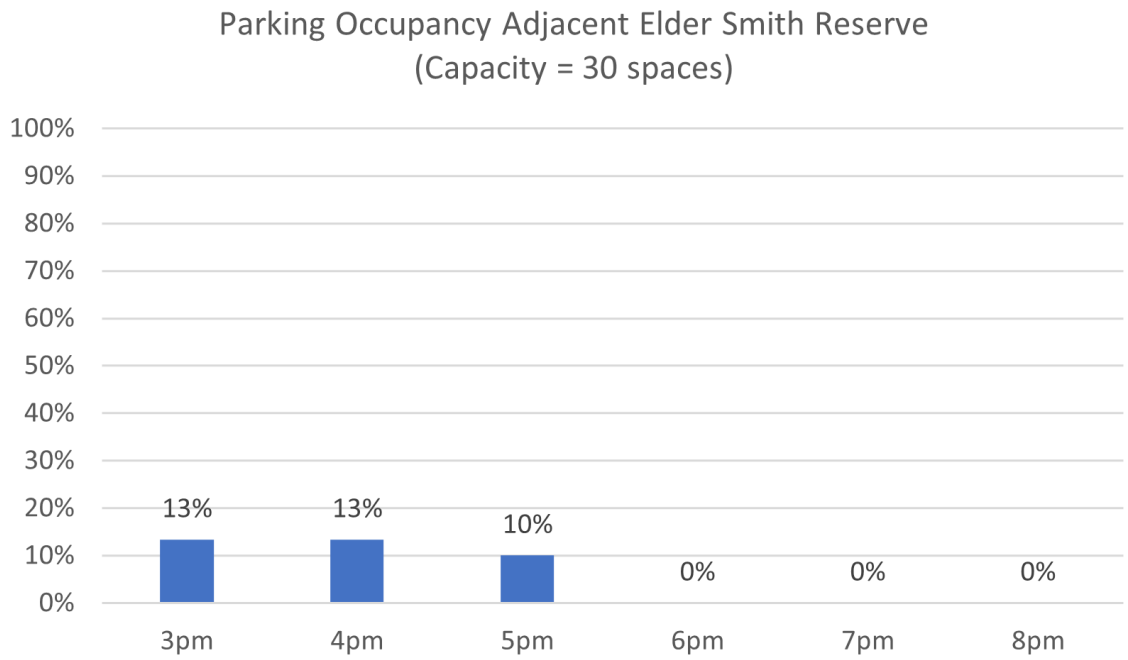


Figure 8: Thursday 15 May: Williamstown Rd Parking Occupancy (in front of Elder Smith Reserve)

The key survey findings are summarised in Table 3, which highlights that even at the busiest parking times (to coincide with future Netball training – most likely 4-5pm) there was generous parking availability on the north side of Williamstown Road. On that north side, there were 38 unoccupied parking spaces at the busiest time. In the section adjacent to Elder Smith Reserve there were 26 unoccupied parking spaces at the busiest time.

Table 3: Summary of Parking Statistics for Thursday 13 May 2021

Criteria	Broader Study area	Area in front of Elder Smith Reserve
Total number of Parking Spaces Available on north side of Williamstown Road	67	30
Total Number of Cars Using Spaces on north side of Williamstown Road over 7 hour Period	39	5
Maximum Occupancy Recorded on north side of Williamstown Road at Busiest Time	43% between 4-5pm	13% between 4-5pm
Unoccupied Parking Spaces on north side of Williamstown Road at Busiest Time	38	26
Unoccupied Parking Spaces on south side of Williamstown Road at Busiest Time	25	NA
Unoccupied Parking Spaces in Full Study Area (north and south sides of Williamstown Road) at Busiest Time	63	26



Figure 9: Parking Occupancy on Williamstown Rd North Side in front of Elder Smith Reserve circa 2.45pm looking east (left image) & circa 3.50pm looking west (right image)



Figure 10: Parking Occupancy on Williamstown Rd North Side just east of Elder Smith Reserve circa 4.10pm looking east (left image) & circa 4.20pm looking west (right image)



Figure 11: Parking Occupancy on Williamstown Rd North Side in front of Elder Smith Reserve circa 4.00pm looking west (left image) & circa 5.00pm looking east (right image)



Figure 12: Parking Occupancy on Williamstown Rd North Side just west & east of Elder Smith Reserve circa 5.00pm looking east from Todd Rd (left image) & circa 5.10pm looking east from Prohasky St (right image)

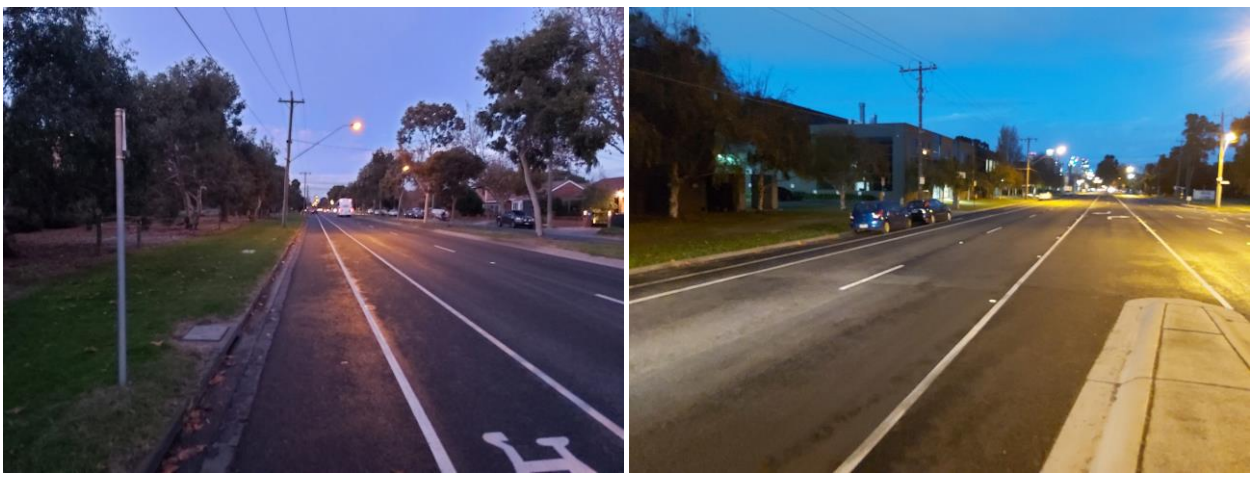


Figure 13: Parking Occupancy on Williamstown Rd North Side in front of & just east of Elder Smith Reserve circa 5.45pm looking east (left image) & circa 6.00pm looking east from Prohasky St (right image)

3.1.4 SATURDAY 15 MAY 2021

In common with the Thursday analysis, the parking occupancy analysis on Saturday excludes the 25 parking spaces on the south side of Williamstown Road (which were vacant throughout the survey period). The analysis presented focusses on the north side only, as those are the spaces most likely to be initially accessed by Netball attendees. . Results for the full study area are shown in Figure 14 and for the section adjacent to Elder Smith Reserve in Figure 15. The figures show that Saturday experienced far greater parking demand compared to Thursday. Saturday is likely to be the busiest competition day, including the parking spaces adjacent to Elder Smith Reserve.

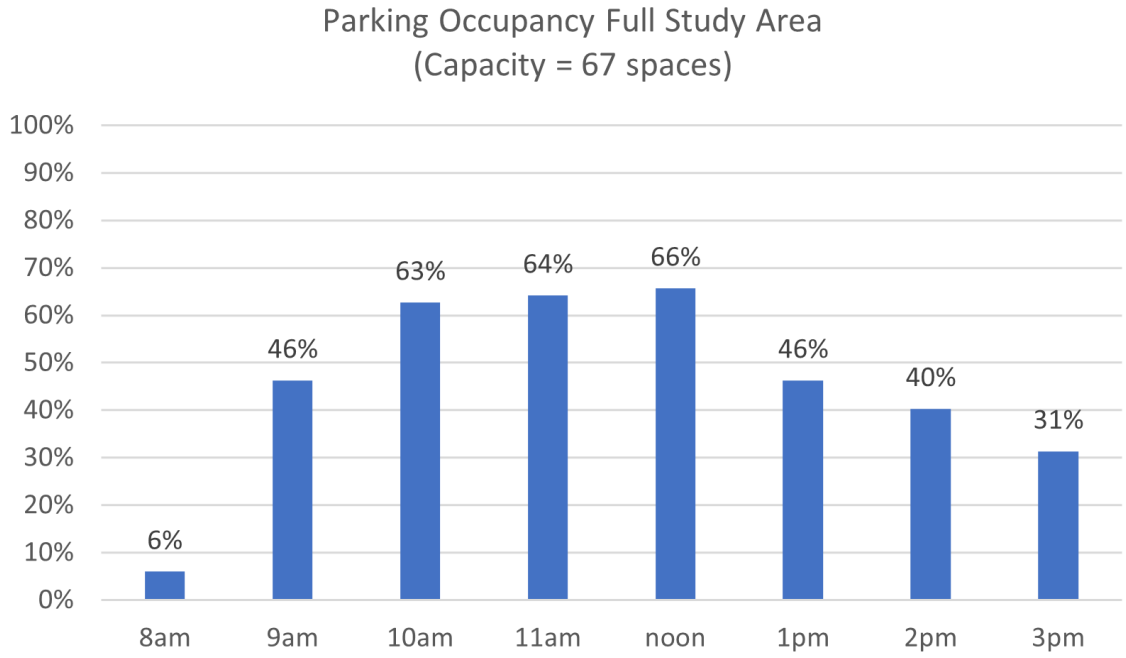


Figure 14: Saturday 15 May: Williamstown Rd Parking Occupancy (Full Study Area: Todd Rd to Smith St)

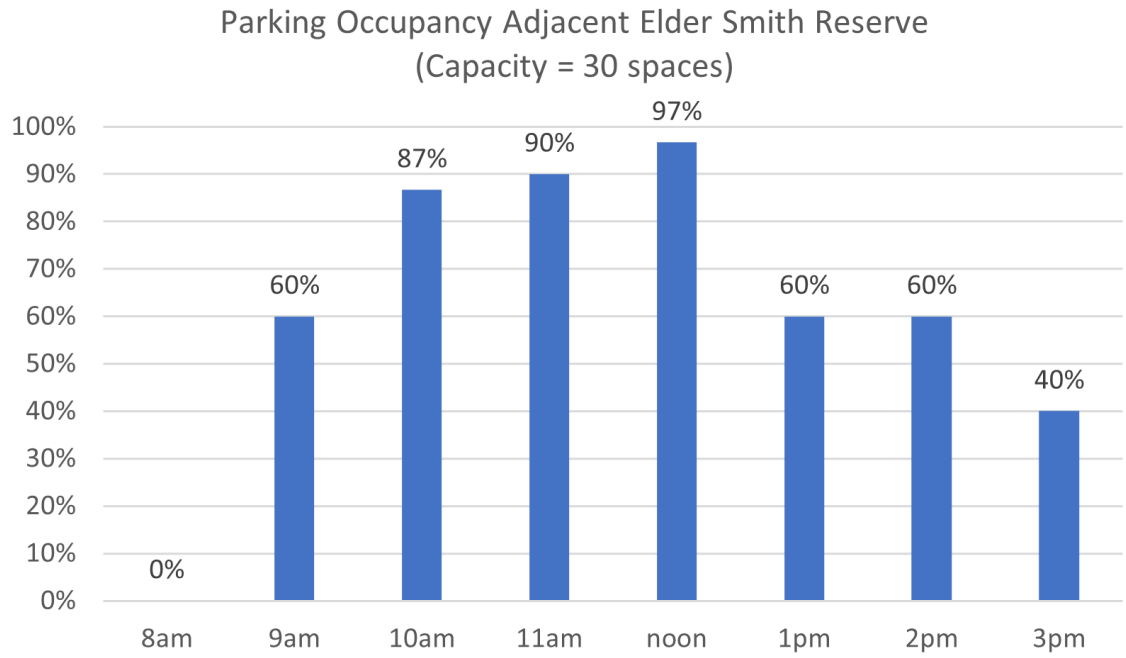


Figure 15: Saturday 15 May: Williamstown Rd Parking Occupancy (in front of Elder Smith Reserve)

The parking occupancy reached nearly 100% (at 12noon) with 29 parking spaces occupied out of the 30 spaces located adjacent to Elder Smith Reserve. All of that parking demand was associated with the Melbourne Grammar site. In the broader study area (the length of Williamstown Road, north side, between Todd Road and Smith Street) the occupancy, whilst still higher than Thursday, peaked at a level of 66% at 12noon – leaving 23 unoccupied parking spaces within convenient walking distance of Elder Smith Reserve.

Parking demand on Saturday 15 May 2021 was heavily influenced by activities at the adjacent Edwin Flack Melbourne Grammar Sports Fields. The Melbourne Grammar site includes nine tennis courts, a full-sized AFL/cricket ground, hockey field and soccer ground. There is only a limited amount of on-site parking servicing the Melbourne Grammar site which causes parking demand to spill out onto Williamstown Road at busy competition times such as Saturday morning.

The key survey findings are summarised in Table 4. The table highlights that even at the busiest times there was reasonable parking availability on the north side of Williamstown Road. In the full study area, there were 23 unoccupied parking spaces at the busiest time. However, in the smaller section adjacent to Elder Smith Reserve, there was only 1 unoccupied parking space at the busiest time. This was entirely attributable to the high parking demand generated by the adjacent Edwin Flack Melbourne Grammar Sports Fields. Parking conditions, at various times, across the front of Elder Smith Reserve and in the adjoining sections are shown in the figures that follow.

Table 4: Summary of Parking Statistics for Saturday 15 May 2021

Criteria	Broader Study Area	Area in front of Elder Smith Reserve
Total number of Parking Spaces Available on north side of Williamstown Road	67	30
Total Number of Cars Using Spaces on north side of Williamstown Road over 7 hour Period	111	71
Maximum Occupancy Recorded on north side of Williamstown Road at Busiest Time	66% at 12noon	97% at 12noon
Unoccupied Parking Spaces on north side of Williamstown Road at Busiest Time	23	1
Unoccupied Parking Spaces on south side of Williamstown Road at Busiest Time	25	NA
Unoccupied Parking Spaces in Full Study Area (north and south sides of Williamstown Road) at Busiest Time	48	1



Figure 16: Parking Occupancy on Williamstown Rd North Side just west & east of Elder Smith Reserve circa 12.00noon looking east from Todd Rd (left image) & circa 12.30pm looking west from Smith St (right image)



Figure 17: Parking Occupancy on Williamstown Rd North Side in front of Elder Smith Reserve circa 12.30pm looking west (left image) & circa 12.30pm looking east (right image)



Figure 18: Parking Occupancy on Williamstown Rd North Side just east of & in front of Elder Smith Reserve circa 1.30pm looking west from Smith St (left image) & circa 1.45pm looking west (right image)



Figure 19: Parking Occupancy on Williamstown Rd North Side just west and east of Elder Smith Reserve circa 5.30pm looking east from Todd Rd (left image) & circa 5.30pm looking east from Prohasky St (right image)

3.1.5 WEEKEND VARIABILITY IN PARKING DEMAND

Whilst the surveys on Saturday 15 May 2021 revealed that parking demand across the frontage of Elder Smith Reserve was very high, particularly around lunchtime – such peak demand is not always manifested on each Saturday (as it depends on the number of sporting fixtures scheduled at the nearby Edwin Flack Melbourne Grammar Sports Fields). Accordingly, in order to get an appreciation of the potential variability in parking demand between different weekends, follow-up 'spot-checks' of the on-street parking demand in the vicinity of Elder Smith Reserve were undertaken on Saturday 22 May 2021. These checks revealed significantly lower on-street parking demand than the previous Saturday (15 May 2021). Parking demand along the 30 spaces on the north side of Williamstown Road, adjacent to Elder Smith Reserve, was recorded as follows:

- No cars parked at 9am (compared to 18 cars parked on 15 May)
- 9 cars parked at 10.30am (compared to 26 cars parked on 15 May)
- 4 cars parked at 12 noon (compared to 29 cars parked on 15 May)
- No cars parked at 1pm (compared to 18 cars parked on 15 May)

Images of the lower occupancy are shown in Figure 20 (in front of Elder Smith Reserve) and Figure 21 (east and west of Elder Smith Reserve).



Figure 20: Saturday 22 May Parking Occupancy on Williamstown Rd North Side in front of Elder Smith Reserve circa 10.30am looking west (left image) & circa 12.00noon looking west (right image)



Figure 21: Saturday 22 May Parking Occupancy on Williamstown Rd North Side either side of Elder Smith Reserve circa 12.00noon looking east from Prohasky St (left image)
& circa 12.00noon looking east from Todd Rd (right image)

3.1.6 SUMMARY OF PARKING IMPACTS

The parking demands generated by the Netball courts development, during both training and competition times, can be partly accommodated on-site through the provision of a 26-space carpark within Elder Smith Reserve. The forecast parking demand and supply analysis is summarised for various scenarios in Table 5.

Table 5: Parking Demand Analysis

Parking Demand Analysis with four Netball Courts in Operation		
Training Evening		
	Normal Parking Demand Parking Rate of 3.5 vehicles per court	**High Parking Demand** Parking Rate of 7 vehicles per court
Parking Spaces Required	14 spaces	28 spaces
Supply Available (on-site & on-street)	89 at busiest time	89 at busiest time
Summary Commentary	Parking demand fully accommodated on-site.	On-site parking (26 spaces) accommodates majority of parking demand. Demand for 2 parking spaces to be accommodated on north side of Williamstown Rd next to Elder Smith Reserve.
Competition Day Realistic Scenario (66% drive rate)		
	Normal Parking Demand (No Overlap of Games on Each Court) 8 spaces per game + 4 spaces for officials / staff	**High Parking Demand** (Overlap of 2 Games on Each Court) 16 spaces per game + 4 spaces for officials / staff
Parking Spaces Required	48 spaces	80 spaces
Supply Available (on-site & on-street)	74 at busiest time	74 at busiest time
Summary Commentary	On-site parking (26 spaces) accommodates over half of the parking demand of 48 spaces. Demand for remaining 22 parking spaces to be accommodated on north side of Williamstown Rd.	On-site parking (26 spaces) accommodates almost a third of the parking demand. Demand for remaining 54 parking spaces to be accommodated on north and south sides of Williamstown Rd.
Competition Day Worst-case Scenario (100% drive rate)		
	Normal Parking Demand (No Overlap of Games on Each Court) 12 spaces per game + 6 spaces for officials / staff	**High Parking Demand** (Overlap of 2 Games on Each Court) 24 spaces per game + 6 spaces for officials / staff
Parking Spaces Required	72 spaces	120 spaces
Supply Available (on-site & on-street)	74 at busiest time	74 at busiest time
Summary Commentary	On-site parking (26 spaces) accommodates over a third of the parking demand of 72 spaces. Demand for remaining 46 parking spaces to be accommodated on north and south sides of Williamstown Rd.	On-site parking (26 spaces) accommodates over one-fifth of the parking demand of 120 spaces. Demand for remaining 94 parking spaces can't be fully accommodated along non-residential frontages on north and south sides of Williamstown Rd. The excess demand for 20 spaces would need to be accommodated along residential frontages

Notes:

1. *Parking rate based on RF Julier Reserve study (for training) and SNHC study (for competition)*
2. *The parking rates exclude pick-up / drop-off activities (which do not generate long-term parking demand)*
3. *On competition days, it is assumed that there is a full overlap of parking demand between successive games (6 spaces required for game in progress and 6 required for arrivals for the subsequent game)*

Table 5 highlights that the generous spare on-street parking capacity (30 parking spaces) that exists on the north side of Williamstown Road, across the Elder Smith Reserve frontage, will be able to cater for any additional parking demand that cannot be accommodated on-site during Netball training and, mostly, under the 'realistic' competition day scenario (when 66% of players/spectators/officials/staff are assumed to be driving to the Netball Courts).

Under the absolute worst-case parking demand scenario shown in Table 5 (namely the unrealistic situation where 100% of players/spectators/officials/staff drive to the Netball Courts and there is also a full overlap of parking demand associated with two Netball games on each of the four courts) there would be insufficient parking available along the non-residential frontages of Williamstown Road. This would require some vehicles to park across residential frontages on the south side of Williamstown Road or to use parking along non-residential frontages on other side streets, such as Prohasky Street and Smith Street.

It is relevant to note that at the busiest competition times there may be competing demands for the parking spaces on the north side of Williamstown Road as a result of sporting activities at the adjacent Edwin Flack Melbourne Grammar Sports Fields. This competing demand is already fully reflected in the 'competition-day' parking availability statistic of 74 spaces (which was measured on Saturday 15 May – a busy day at the Melbourne Grammar Sports Fields). However, on the following Saturday 22 May, activities at the Edwin Flack Sports Fields only generated a fraction of the parking demand on Williamstown Road. In fact, at the 'busiest time' (for the purposes of assessing Netball games – this is the period between 12.00noon and 1.00pm on Saturday) the demand for parking on Williamstown Road associated with the Edwin Flack Sports Fields was only 4 vehicles (down from the 29 cars parked on 15 May). Thus, when parking conditions such as those of Saturday 22 May prevail, the availability of parking would be 99 spaces (in addition to the 26 on-site spaces at Elder Smith Reserve). The overall parking availability of 125 spaces would have allowed the worst-case scenario demand for 120 parking spaces (shown in Table 5) to be fully accommodated on-site and along non-residential frontages on the north and south sides of Williamstown Rd.

This 'Melbourne Grammar related' demand for parking on Williamstown Road arises as there is only a limited amount of on-site parking servicing the Edwin Flack Sports Fields site which causes parking demand to spill out onto Williamstown Road at particularly busy competition times such as some Saturday mornings. Nonetheless, even at the busiest periods it was noted that abundant spare on-street parking is available both in other sections on the north side of Williamstown Road and diagonally opposite Elder Smith Reserve on the south side of Williamstown Road (adjacent to open space and not affecting residential frontages). On both of the Saturday mornings surveyed for this study the parking availability on this south side of Williamstown Road was consistently measured at 25 spaces throughout the likely future busiest Netball competition hours.

3.2 TRAFFIC

3.2.1 OVERVIEW

Insights are required into the volume of traffic that uses Williamstown Road, in order to understand the ability, safety and convenience of motorists to access Elder Smith Reserve. Currently the reserve can only be accessed via left-in / left-out movements from the northern carriageway of Williamstown Road. Traffic volume data was manually collected on both sides of Williamstown Road (at Elder Smith Reserve) for the same time periods as the parking surveys, namely:

- Wednesday & Thursday evening, 12 and 13 May, between 3pm to 8pm
- Saturday daytime, 15 May, between 8am to 3pm

An average was calculated for the Wednesday and Thursday evening counts and labelled 'Average Weekday' for the purposes of this study. The 'Average Weekday' traffic volumes on both sides of Williamstown Road are shown in Table 6 (for each survey hour) and Figure 22 (maximum values recorded). The corresponding statistics for Saturday are provided in Table 7 (each survey hour) and Figure 23 (maximum values recorded). The maximum traffic flows will be used for traffic impact assessment purposes.

Table 6: 'Average Weekday' Traffic Flow on Williamstown Road (in front of Elder Smith Reserve)

'Average Weekday' Traffic Flow on Williamstown Road (vehicles per hour)					
Movement	**3:00 PM**	**4:00 PM**	**5:00 PM**	**6:00 PM**	**7:00 PM**
Eastbound flow	472	492	511	353	176
Westbound flow	229	263	266	146	72

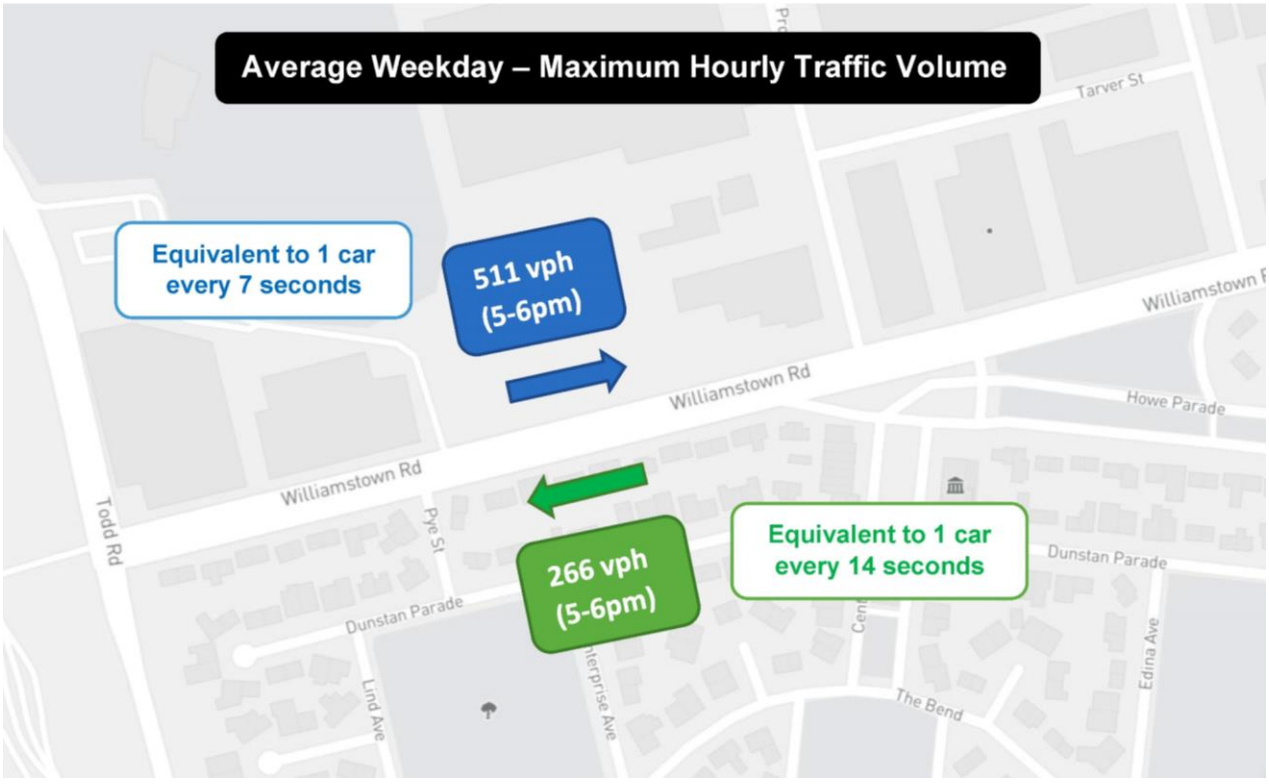


Figure 22: Average Weekday Maximum Traffic Volume on Williamstown Road alongside Elder Smith Reserve

Table 7: Saturday Traffic Flow on Williamstown Road (in front of Elder Smith Reserve)

Saturday Traffic Flow on Williamstown Road (vehicles per hour)							
Movement	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM
Eastbound flow	171	220	275	323	386	385	379
Westbound flow	84	152	126	133	149	142	133

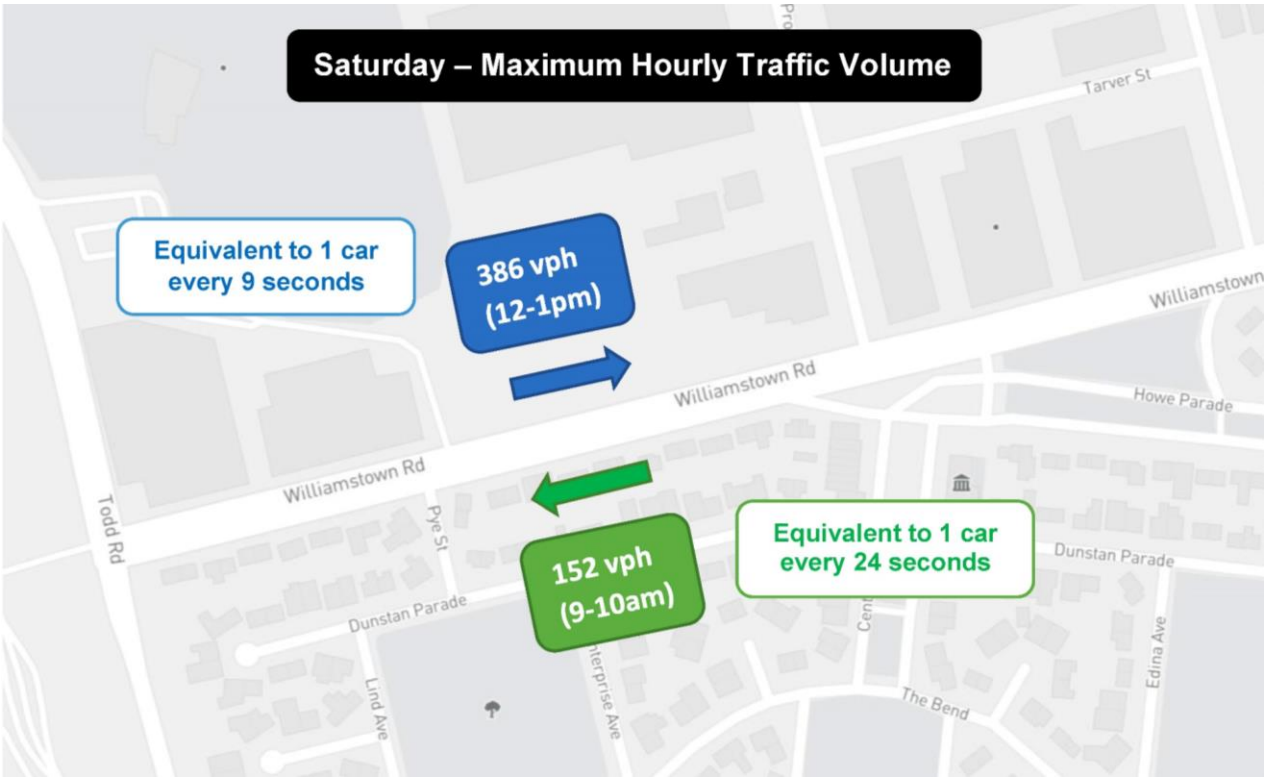


Figure 23: Saturday Maximum Traffic Volume on Williamstown Road along Elder Smith Reserve

3.2.2 TRAFFIC IMPACT ASSESSMENT PROCEDURE

The traffic volume data collected on Williamstown Road has been combined with forecast traffic data associated with the future Netball courts to determine likely impacts on Williamstown Road. The analysis has been undertaken through a conventional trip generation/trip distribution/capacity assessment process.

The calculation of the traffic generation component is based on the traffic rates identified at RF Julier Reserve (for training) and SNHC (for competition). After calculation of a possible traffic generation volume, the next step involves the 'distribution' of traffic onto the road network using a logical and 'common sense' approach (where people are most likely to be coming from and going to). Finally, the question of whether the forecast traffic will have a material impact on Williamstown Road has been based on a structured two-tiered assessment framework, as follows.

1. The first level of analysis involves the determination of capacity-impact using agreed traffic capacity limits for streets based on commonly-accepted traffic lane capacity parameters adopted in Melbourne (e.g. – arterial road = 1,000 vehicles per traffic lane per hour). In other words, if the forecast traffic volume increase pushes the traffic on a road section beyond the accepted lane-carrying thresholds – an impact would be regarded as, possibly, material.

2. The second, and most 'rigorous', level of modelling involves detailed intersection analysis using gap acceptance theory, as outlined in "Austroads 2015: Guide to Traffic Management Part 2: Traffic Theory". This Austroads Guide is typically used to determine the capacity for uncontrolled intersections – such as the location where the future Netball courts development access point intersects Williamstown Road.

3.2.3 TRAFFIC GENERATION

Using data from the RF Julier Reserve and SNHC studies (as described in chapter 2), traffic rates have been derived for both training and competition. The resultant traffic generation associated with four Netball courts at Elder Smith Reserve is summarised in Table 8.

Table 8: Traffic Generation Analysis with four Netball Courts in Operation

Traffic Generation Analysis with four Netball Courts in Operation		
Training Evening		
Total Players	Traffic Generation Rate	Maximum Hourly Traffic Volume
104 (26 per court)	0.46 cars per player per hour	48 vehicles per hour
Competition Day		
Total Players & Spectators	Traffic Generation Rate	Maximum Hourly Traffic Volume
27 players & spectators per game plus 6 officials / staff	**Realistic Scenario (two-thirds drive)** 10 trips / game for players/spectators + 4 car trips / court for officials / staff 24 trips total (2 games overlap in an hour)	96 vehicles per hour (for four courts)
27 players & spectators per game plus 6 officials / staff	**Worst-case Scenario (100% drive)** 14 trips / game for players/spectators + 6 car trips / court for officials / staff 34 trips total / court (2 games overlap in an hour)	136 vehicles per hour (for four courts)

Notes:

1. *Traffic rate based on RF Julier Reserve study (for training) and SNHC study (for competition)*
2. *The forecast maximum hourly traffic volume on competition day assumes full overlap of two games on each court. This equates to:*
   a. *20 car trips occurring within a single hour for players/spectators under the realistic scenario plus 4 car trips for officials / staff on each court*
   b. *28 car trips occurring within a single hour for players/spectators under the worst-case scenario plus 6 car trips for officials / staff on each court*

The above analysis has identified traffic generation ranging from a low of 48 vehicles per hour during training (reflective of RF Julier Reserve travel behaviour) to a high of 136 vehicles per hour during competition (reflective of an extreme scenario where 100% of Netball players are driven to competition games and there is full overlap, within a single hour, of the traffic generated by two games on each of the four courts).

3.2.4 TRIP DISTRIBUTION BASED ON FULL DIRECTIONAL ACCESS

In assessing the adequacy of Williamstown Road to cope with the forecast traffic movements it is first necessary to consider the arrival/departure patterns of traffic – namely the distribution of traffic onto the surrounding road network on its route to/from the subject site.

It is reasonable to adopt an even split with 50% of vehicles arriving/departing to the east and west respectively (given the likely geographic diversity of team origins during competition, as well as the equal ease with which players residing in the large residential catchment to the south can travel and arrive either from the west, via Todd Road, or from the east – via the numerous local streets that intersect Williamstown Road).

Application of the 50/50 distribution pattern and the assumptions described above produces the following maximum hourly traffic volumes on Williamstown Road (associated with the proposed Netball courts development):

Netball Training Peak Hour (4-5pm on a weekday):

- 48 vehicles/hour incoming – 24 arriving from each of the east and west
- 22 vehicles/hour outgoing (these are the 45% of vehicles that drop-off and drive away in the same hour that they arrive) – 11 are bound for each of the east and west

Competition Peak Hour (11-12noon on Saturday):

- 136 vehicles/hour incoming – 68 arriving from each of the east and west
- 64 vehicles/hour outgoing (these are the 56 vehicles that depart one game on each of the four courts and the 8 vehicles that drop-off and drive away in the same hour that they arrive) – 32 are bound for each of the east and west

3.2.5 CHANGE IN TRAFFIC VOLUME ON WILLIAMSTOWN ROAD

The first level of 'capacity analysis' involves assessing whether the traffic generated by the development is likely to 'push' the traffic volume on Williamstown Road beyond the accepted lane-carrying threshold of around 1,000 vehicles per traffic lane per hour. Under the current geometric configuration, Williamstown Road features two traffic lanes in each direction and access to Elder Smith Reserve is only available via left-in / left-out movements. Thus, the theoretical traffic capacity on each side of Williamstown Road is 2,000 vehicles per hour. Vehicles arriving from the east would need to execute a U-turn to the west of Elder Smith Reserve (close to Todd Road where there is an existing right-turn lane). Similarly, vehicles wishing to depart to the west would first need to travel a short distance to the east and execute a U-turn at Howe Parade (where there is also an existing right-turn lane). Thus, this Left-turn Only Access" scenario is effectively the worst-case scenario in terms of generating addition al traffic on the northern carriageway of Williamstown Road (as all traffic arriving and departing Elder Smith Reserve will use at least a portion of the northern carriageway).

Table 9 summarises existing and future forecast traffic volumes on Williamstown Road for this "Left-turn Only Access" scenario. It is evident that the forecast increase in traffic is comparatively low and will not result in the traffic lane carrying-capacity on Williamstown Road being affected, as total traffic volume remains well below the '2,000 vehicles per hour' threshold (for the existing two-lane configuration in each direction).

Table 9: Forecast Peak Hour Traffic Conditions on Williamstown Road for 'Left-turn Only Access' Scenario

Traffic Movement	Hourly Traffic Movements (vehicles/hour)	
	Netball Training	Netball Competition
Arrivals to Elder Smith Reserve from the west (left turns)	48	136
Departures from Elder Smith Reserve to the east (left turns)	22	64
Existing Traffic Flow on north side of Williamstown Road (eastbound)	*511*	*386*
Forecast Total Traffic Flow on north side of Williamstown Road (eastbound)	**581**	**586**
Existing Traffic Flow on south side of Williamstown Road (westbound)	*266*	*152*
Forecast Total Traffic Flow on south side of Williamstown Road (westbound)	**301**	**252**

3.2.6 CAPACITY AT ACCESS POINT

The ability of the 'access point' (the driveway/s servicing the Elder Smith Reserve netball courts development from Williamstown Road) to accommodate the forecast traffic movements described in previous sections, can be assessed by treating the intersection of the driveway with Williamstown Road as an unsignalised intersection. Such intersections work well when the minor road traffic volume (in this instance the access point) is low compared to the major road volume (provided delays on the minor legs are not excessive).

"Austroads 2015: Guide to Traffic Management Part 2: Traffic Theory" (the Austroads Guide) is typically used to determine the capacity for uncontrolled intersections. (Austroads membership comprises the six state and two territory road transport and traffic authorities, the Commonwealth Department of Infrastructure and Transport, the Australian Local Government Association, and NZ Transport Agency).

The AustRoads Guide provides practical absorption capacities for turning movements at uncontrolled intersections – relevant for analysing conditions at the Williamstown Road / site access interface. The Practical Absorption Capacity is the theoretical number of movements that can be accommodated before unacceptable delays occur.

At the site access point, Table 9 revealed that there are currently 511 eastbound vehicle movements and 266 westbound vehicle movements/hour during Netball practice. At peak competition time, there are 386 eastbound vehicle movements and 152 westbound vehicle movements/hour. The westbound traffic volume (vehicles travelling on Williamstown's Road southern carriageway) is primarily of relevance if considering fully-directional access with right-turn movements permitted into and out of Elder Smith Reserve.

In deriving a 'practical absorption capacity' for the Elder Smith Reserve access point, the Austroads Guide first provides 'critical acceptance gap' and 'follow-up headway' values (reproduced as Table 10).

Those that are relevant for the left and right turn movements under consideration, and are to be adopted for this analysis, are the following:

Left-turn out of Elder Smith Reserve:

- Critical Acceptance Gap (seconds) = 5
- Follow-up headway (seconds) = 2-3

Right-turn into Elder Smith Reserve:

- Critical Acceptance Gap (seconds) = 5
- Follow-up headway (seconds) = 3

Right-turn out of Elder Smith Reserve:

- Critical Acceptance Gap (seconds) = 8
- Follow-up headway (seconds) = 5

These 'Critical Acceptance Gap' and 'Follow-up headway' values are used to derive 'Practical Absorption Capacity' values (provided in Figure 24) which are the volumes of left-turning (outgoing) and right-turning (incoming and outgoing) traffic that can be accommodated at the interface point between Elder Smith Reserve and Williamstown Road.

It is noted that left-turn movements into Elder Smith Reserve from Williamstown Road are effectively unopposed (forecast maximum values under a 'left-turn only access' scenario of 48 vehicles/hour incoming during Netball training and 136 vehicles/hour incoming during Netball competition) – and thus there is no capacity issue in any period under consideration.

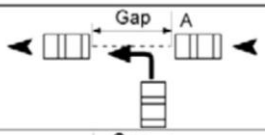
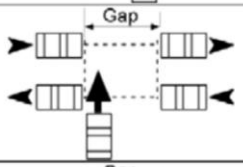
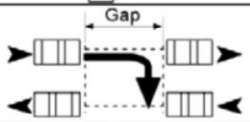
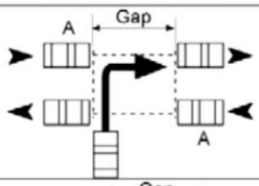
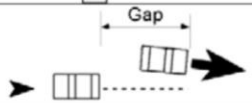
Netball Training Peak Absorption Capacity

- The left-turn capacity out of the site is around 710 vehicles/hour (against an eastbound flow of 511 vehicles/hour). The maximum forecast number of left turn movements at this location: 22 vehicles/hour – is much lower than the 710 vehicles/hour that could be theoretically accommodated.
- The right-turn capacity into the site is around 580 vehicles/hour (against an eastbound flow of 511 vehicles/hour). The maximum forecast number of right turn movements at this location: 24 vehicles/hour – is much lower than the 580 vehicles/hour that could be theoretically accommodated.
- The right-turn capacity out of the site is around 175 vehicles/hour (against a combined eastbound and westbound flow of 777 vehicles/hour). The maximum forecast number of right turn movements at this location: 11 vehicles/hour – is much lower than the 175 vehicles/hour that could be theoretically accommodated.

Netball Competition Peak Absorption Capacity

- The left-turn capacity out of the site is around 710 vehicles/hour (against an eastbound flow of 511 vehicles/hour). The maximum forecast number of left turn movements at this location: 64 vehicles/hour – is much lower than the 710 vehicles/hour that could be theoretically accommodated.
- The right-turn capacity into the site is around 580 vehicles/hour (against an eastbound flow of 511 vehicles/hour). The maximum forecast number of right turn movements at this location: 68 vehicles/hour – is much lower than the 580 vehicles/hour that could be theoretically accommodated.
- The right-turn capacity out of the site is around 175 vehicles/hour (against a combined eastbound and westbound flow of 777 vehicles/hour). The maximum forecast number of right turn movements at this location: 32 vehicles/hour – is much lower than the 175 vehicles/hour that could be theoretically accommodated.

Table 10: Critical Acceptance Gap & Follow-up Headway Values

Movement	Diagram	Description	t_a	t_f
Left hand turn		Not interfering with A Requiring A to slow	14-40 sec 5 sec	2-3 sec 2-3 sec
Crossing		Two lane/one way Three lane/one way Four lane/one way Two lane/two way Four lane/two way Six lane/two way	4 sec 6 sec 8 sec 5 sec 8 sec 8 sec	2 sec 3 sec 4 sec 3 sec 5 sec 5 sec
Right hand turn from major road		Across 1 lane Across 2 lanes Across 3 lanes	4 sec 5 sec 6 sec	2 sec 3 sec 4 sec
Right hand turn from minor road		Not interfering with A One way Two lane/two way Four lane/two way Six lane/two way	14-40 sec 3 sec 5 sec 8 sec 8 sec	3 sec 3 sec 3 sec 5 sec 5 sec
Merge		Acceleration lane	3 sec	2 sec

Note: t_a = critical acceptance gap
t_f = follow up headway

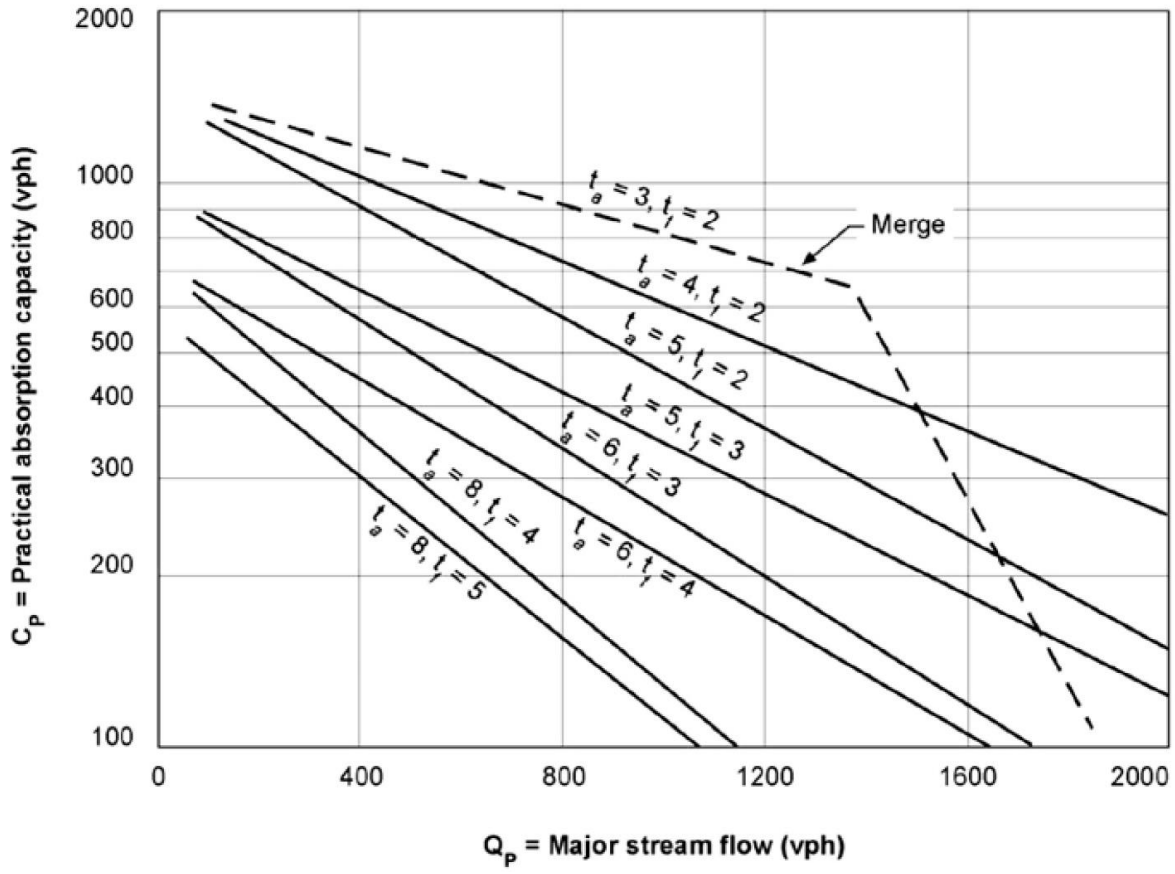


Figure 24: Practical Absorption Capacity at Unsignalised Intersections

3.2.7 SUMMARY OF TRAFFIC IMPACTS

The number of additional vehicle trips generated by the Netball courts development is forecast to be comparatively low and will have no material impact on the operation of Williamstown Road.

The two-tiered assessment framework has demonstrated that the traffic impacts of the development are likely to be insignificant. In particular:

1. The increased traffic will not give rise to a situation where existing Williamstown Road traffic lanes are expected to carry more than 2,000 vehicles per hour capacity (the accepted lane-carrying capacity threshold for a two-lane arterial road, in each direction, in Melbourne). The highest forecast traffic volume (post-development) is 586 vehicles per hour (eastbound during Netball competition) – up from the existing 386 vehicles/hour.
2. The analysis of the Elder Smith Reserve / Williamstown Road interface (using AustRoads' Practical Absorption Capacity theory) has revealed that substantial spare capacity exists to easily accommodate all forecast left and right turn movements generated by the proposed Netball courts in peak Netball and competition periods. The ability to easily accommodate all movements is equally valid under both access scenarios examined – namely the existing 'Left-turn Only Access' arrangement (only left-turn in / left-turn out allowed) as well as the 'Full Directional Access' (left and right turn movements allowed).

4 CONCLUSION

This study has considered the existing parking and traffic dynamics that characterise Williamstown Road near Elder Smith Reserve in Port Melbourne. As assessment has been made of likely parking and traffic impacts – at times when future Netball training / competition is likely to occur. The analysis concludes that there are no adverse impacts associated with the proposed development of Netball courts at Elder Smith Reserve, Port Melbourne and no changes are required to the geometry on Williamstown Road to accommodate the forecast traffic volumes. In particular:

- The parking demands generated by the Netball courts development, during both training and competition times, can be predominantly accommodated on-site through the provision of a 26-space carpark within Elder Smith Reserve. Generous spare on-street parking capacity (30 parking spaces) exists on the north side of Williamstown Road, across the Elder Smith Reserve frontage, to cater for any additional parking demand that cannot be accommodated on-site. Occasionally, during the busiest competition time, there may be a need to use spare parking on the south side of Williamstown Road including, in rare extreme circumstances, some parking spaces adjacent to residential frontages (under an unlikely worst-case scenario where 100% of attendees drive to Elder Smith Reserve and Netball competition coincides with a busy day at the adjacent Edwin Flack Melbourne Grammar Sports Fields).
- The number of vehicle trips generated by the proposed development is forecast to be comparatively low and will have no material impact on the operation of Williamstown Road. In particular, there is substantial and generous spare traffic capacity to undertake all traffic movements at the future Elder Smith Reserve access point on Williamstown Road, without causing delays or any adverse impact to existing traffic flows and on the capacity on Williamstown Road. Both the 'Left-turn Only Access' arrangement (left-turn in / left-turn out allowed – as per current conditions on Williamstown Road) and the 'Full Directional Access' (left and right turn movements allowed) are forecast to operate satisfactorily. It is noted that adequate U-turn opportunities exist both west and east of Elder Smith Reserve to support a left-in / left-out access arrangement.