

Transport Engineering

REF: N188264

DATE: 20 July 2021

CO-OP Studio
35 Richards Lane
SURREY HILLS NSW 2010

Attention: Steven Donaghey (Principal)

Dear Steven,

RE: BOTANY AQUATIC CENTRE (DA-2021/187) – TRAFFIC AND PARKING IMPACT STATEMENT

A Development Application (DA-2021/187) has been lodged with Bayside Council for the demolition of the existing children's pool and shelter, construction of three water slides, an outdoor aqua play area and associated building for mechanical servicing and change rooms at Botany Aquatic Centre, located on the corner of Myrtle Street and Jasmine Street, Botany.

This letter has been prepared in response to Council's submission seeking a Traffic and Parking Impact Assessment be prepared in relation to the proposed development, with the relevant submission outlined in Bayside Council letter to Urbis, dated 30 June 2021¹ reproduced below.

"The site provides 163 car spaces which are shared with the adjacent 'recreation facility (outdoor)' known as Booralee Park.

BBDGP 2013 specifies a list of parking rates for four selected types of 'recreation facilities (outdoor)'. This includes swimming pools which are provided with a minimum parking rate of 1 space per 10m² of pool area plus 1 space per 2 employees.

At the recent regional panel briefing meeting, it was noted that neither water slides nor sports fields (i.e., Booralee Park) are among the four listed recreation facilities (outdoor). BBDGP 2013 indicates that for other 'recreation facilities (outdoors)', a parking Assessment based on survey of similar developments is required.

As water slides may not properly be captured by 'pools', BBDGP 2013 would therefore require a parking assessment, based on a survey of similar developments, or other suitable data estimates. The regional panel have indicated that despite not being required by BBDGP 2013, a complete Traffic and Parking Impact Assessment would be required in order to properly consider the impacts of the proposal."

¹ 2 Myrtle Street, Botany Bay, NSW 1445 (Botany Aquatic Centre), Bayside Council letter to Urbis, dated 30 June 2021

This letter is set out in the following sections:

- Existing conditions
- Development proposal
- Parking appraisal
- Traffic impact appraisal
- Conclusion.

Existing Conditions

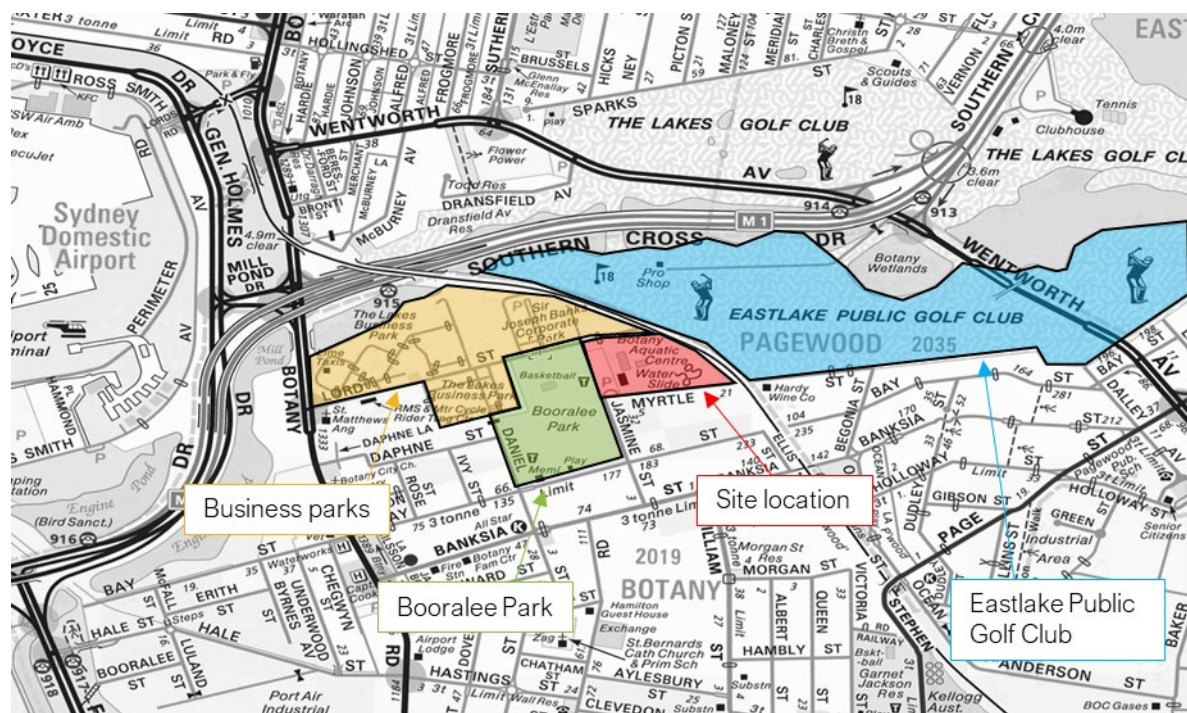
Site Location

Botany Aquatic Centre is on the corner of Myrtle Street and Jasmine Street, Botany and includes a range of aquatic and leisure facilities. The site is approximately nine kilometres south of Sydney CBD and bound by the Botany Freight Rail Line and Eastlake Public Golf Club to the north and east, Myrtle Street to the south and Booralee Park to the west. The site has a primary frontage to Myrtle Street and covers 3.02 hectares.

Surrounding properties primarily include a range of commercial buildings and a range of residential housing. Booralee Park is west of the site with shared use of the at-grade car park during sporting events. Botany Aquatic Centre is currently zoned RE1 – Public Recreation.

The subject site and surrounding environs is shown in Figure 1.

Figure 1: Subject site and its environs



Base image source: <http://www.street-directory.com.au/>, accessed 26 May 2020

Site Operation

The existing site is occupied by administrative and recreational facilities including a café, three outdoor pools, change rooms, kiosk, picnic shelter and associated amenities. Two water slides had historically formed part of the Aquatic Centre having been installed in October 1984. They were removed in early 2019 for compliance reasons.

Botany Aquatic Centre is closed during winter months, typically between April and September.

Bayside Council provided GTA, now Stantec, with patron and income data for the full year between September 2016 and April 2017. At this time, the waterslides were still in operation. The total number of patrons per month and income generated by the water slides, reflected as a percentage of the total income generated by the waterslides across the year, is illustrated in Figure 1.

Figure 2: Botany aquatic centre monthly visitation data 2016-2017

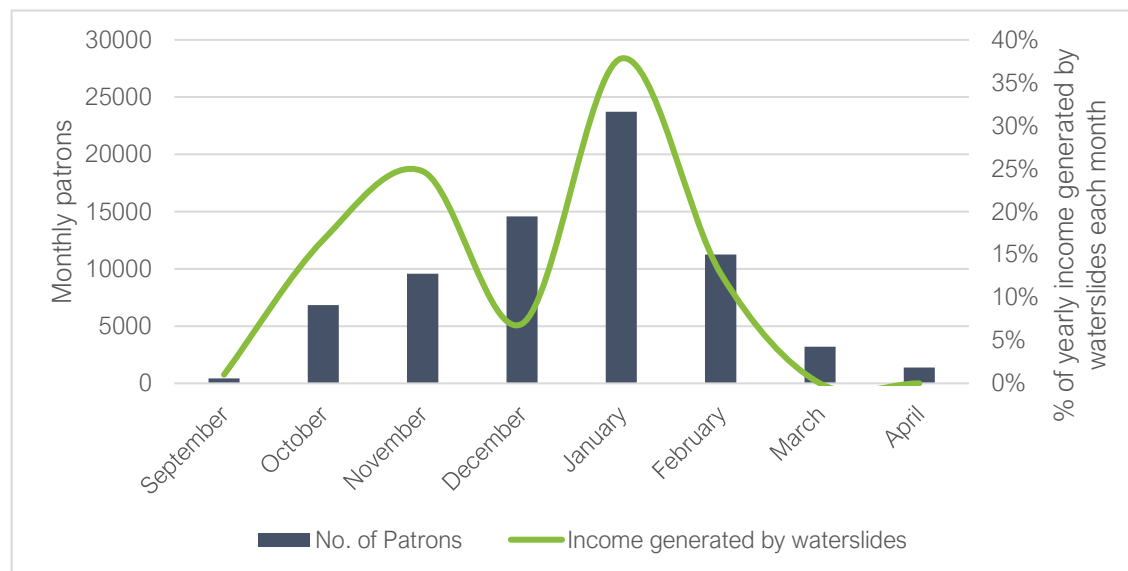


Figure 2 indicates that peak demand for the aquatic facility occurred in January, representing around 33 per cent of total yearly visitations and 38 per cent of yearly waterslide use.

With more than 50 per cent of total visits to the aquatic centre occurring over December and January, a similar trend can be assumed for the water slides. Figure 2 does however show a decline in December and likely reflective of a closure period at the time.

Surrounding Road Network

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules, most recently amended on 22 November 2019.

Transport for NSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by Transport for NSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or Transport for NSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

A summary of the surrounding road network is tabulated in Table 1.

Table 1: Surrounding road network

Road Name	Class	Description
Botany Road	Arterial Road	<ul style="list-style-type: none"> • North-south orientation between Redfern in the north and Port Botany in the south • Two-lane, two-way road as it relates to the site • 12.5m carriageway • 50km/hr speed zoning with 40km/hr school zoning operating at standard school peak times • Parking is time-restricted on both sides of the street
Banksia Street	Collector Road	<ul style="list-style-type: none"> • East-west orientation between Botany Street and Ellis Street, and between Page Street and Begonia Street • Two-lane, two-way road • 12m carriageway • 50km/hr speed zoning • Parking is unrestricted on both sides of the road
Myrtle Street	Local Road	<ul style="list-style-type: none"> • North-south orientation between Banksia Street and Myrtle Street • Provides access to the site at its intersection with Myrtle Street • Two-lane, two-way road • 12m carriageway • 50km/hr speed zoning • Parking is unrestricted on both sides of the road
Jasmine Street	Local Road	<ul style="list-style-type: none"> • East-west orientation between Jasmine Street and terminates as a cul-de-sac • Provides access to the site • Two-lane, two-way road • 12m carriageway • 50km/hr speed zoning • Parking is unrestricted on both sides of the road, with the exception of three time restricted (1-hour) spaces opposite the site access.

Car Parking

Supply

The public at-grade car park shared between Aquatic Centre and Booralee Park users is located immediately west of the site and provides 163 parking spaces, including four accessible spaces. Access to the car park is via two driveway crossovers on Myrtle Street.

Unrestricted kerbside parking is available within the surrounding streets, with a supply of around 120 spaces within a 200-metre walk of the site along Myrtle Street and Jasmine Street.

Demand

Typically, GTA would complete car parking demand surveys to support the transport assessment. Given ongoing COVID-19 related issues and associated lockdown of public gatherings in 2020 and 2021, current parking conditions are not typical and as such parking demand surveys completed at this time could not be considered representative.

Notwithstanding, GTA has completed desktop parking surveys using Nearmap aerial imagery in the nominated study area of both weekdays during summer public holidays and weekends at times when

the Aquatic Centre is fully operational to understand typical and peak parking demand near the site. It is noted that limited data points were available demonstrating use of Booralee Park, with the exception of Saturday, 29 November 2014. Further, two data points were reviewed from when the historic water slides were open, including Monday, 16 January 2018 and Saturday, 29 November 2014.

The results are summarised in Table 2.

Table 2: Car parking demand

Date	Time	Booralee Park Use	Aquatic Centre Slides	Parking Demand		
				Aquatic Centre	Myrtle Street	Jasmine Street
Wednesday, 22 January 2020	12:30pm	None	Removed	70%	60%	60%
Sunday, 27 January 2019	12:40pm	None	Removed	75%	90%	80%
Thursday, 27 December 2018	11:30am	None	Removed	50%	80%	70%
Friday, 19 January 2018	3:00pm	None	Closed	50%	40%	40%
Monday, 16 January 2018	3:00pm	None	Open	35%	50%	20%
Saturday, 29 November 2014	4:00pm	Yes, three cricket matches	Open	70%	30%	20%

Table 2 indicates that of all the available relevant aerial imagery, peak demand for parking occurred on Sunday, 27 January 2019 at 12:40pm. On this day, the Bureau of Meteorology reported a maximum temperature of 36 degrees Celsius² near Sydney Airport. Given this and noting the Australia Day long weekend, this day is an appropriate representation of the likely 'peak of peak' demand for parking at the centre (except for special events). Demand of 75 per cent (120 of 163 spaces) was recorded for the car park and 80 to 90 per cent for on-street parking spaces along Myrtle Street and Jasmine Street.

Sporting activities (mostly cricket) were observed on three of the four three Booralee Park pitches on Saturday 29 November 2014. On this day, the aquatic centre slides were still operational and clearly in use. Demand of 70 per cent (110 of 163 spaces) was recorded for the car park and 20 to 30 per cent for Myrtle Street and Jasmine Street on-street parking.

In addition, review of Nearmap aerial imagery across the winter months (when the aquatic centre is closed, and soccer is the predominant sport played at Booralee Park) illustrates demand for up to 20 parking spaces within the car park (on Saturday 18 August 2018). Due to the availability of parking along the streets surrounding Booralee Park, players and spectators clearly park on-street proximate to the respective playing fields.

Public Transport

The site is supported by frequent bus services that operate along Banksia Street and Botany Road. The closest bus stop is located about 350 metres south of the site. The surrounding bus network services are detailed in Table 3 and shown in Figure 3.

² [Sydney in January 2019 \(bom.gov.au\)](https://www.bom.gov.au), accessed July 2021

Table 3: Public transport network

Bus route number	Description	AM/ PM peak frequency	Off-peak frequency
307	Port Botany Depot to Mascot	20 minutes/ 20 minutes	30 minutes
309	Banksmeadow to Central Railway Square	10 minutes/ 10 minutes	10 minutes
309X	Port Botany to Central Railway Square (Express Service)		
310X	Banksmeadow to Central Railway Square (Express Service)		

Figure 3: Surrounding bus map



Base image source: transportnsw.info, accessed July 2021

Walking and Cycling Infrastructure

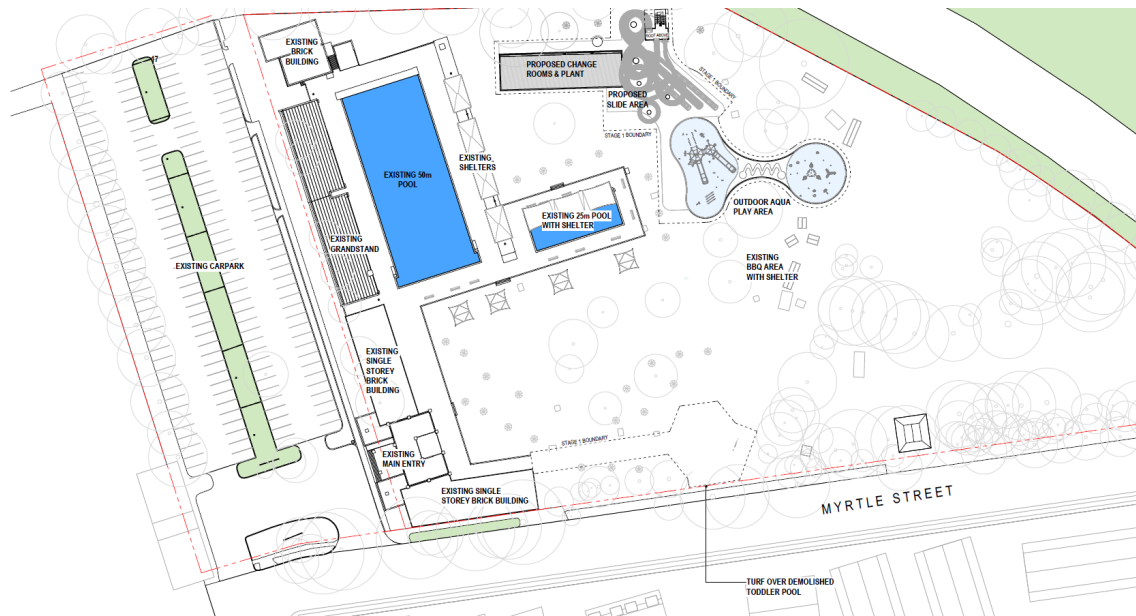
Well established footpaths are provided on both sides of most surrounding roads, connecting pedestrians with the surrounding residential area and to bus stops along Banksia Street (five-minute walk south of the site) and Botany Street (900 metres west of the site).

There is limited cycling infrastructure surrounding the site. Bicycle friendly roads are provided on Banksia Street and William Street south of the site.

Development Proposal

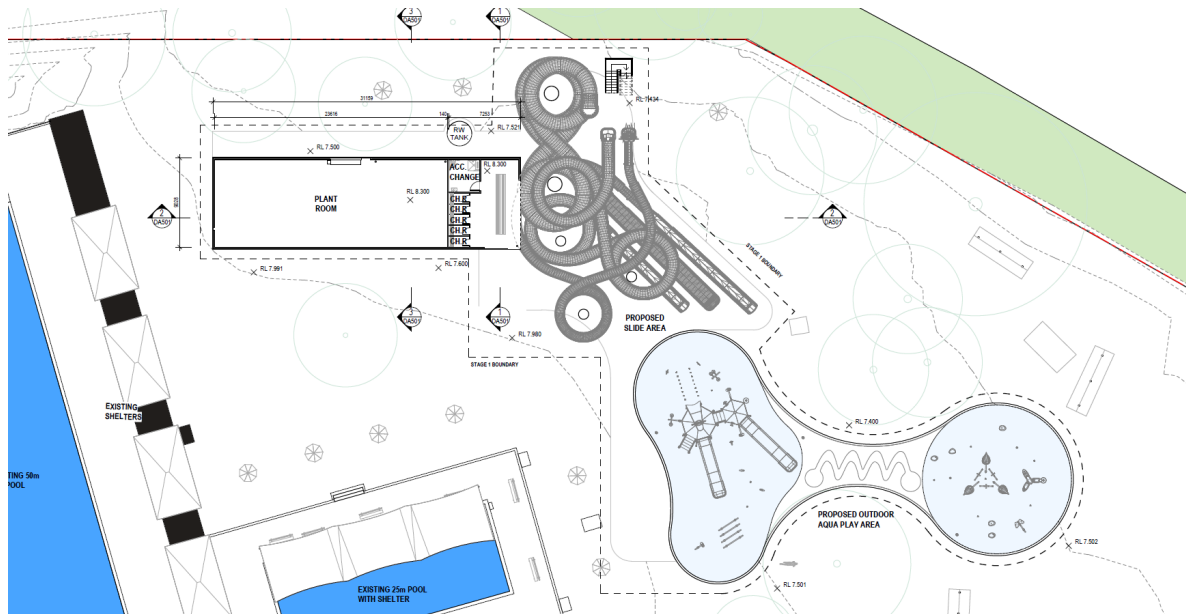
The development includes the demolition of the existing children's pool and shelter, construction of three water slides, an outdoor aqua play area and associated building for mechanical servicing and change rooms at Botany Aquatic Centre. The slide and aqua play area are proposed in the north-east corner of the site, as shown in the general site layout plans in Figure 4 and Figure 5. The existing

Figure 4: Proposed site layout



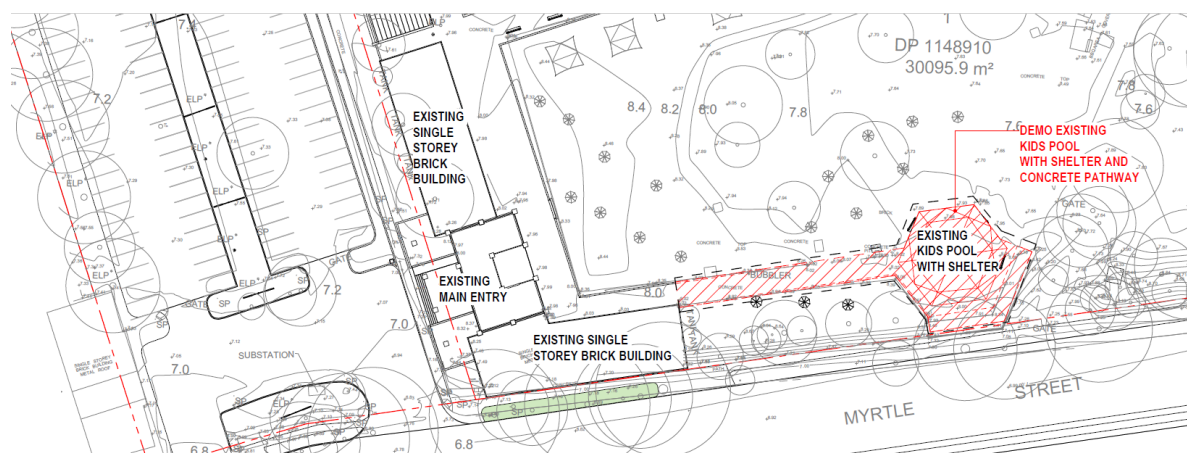
Source: Site Plan – Stage 1, Botany Aquatic Centre – Stage 01, Drawing No. DA112A Rev A, issued 31 March 2021

Figure 5: Proposed slide and aqua play area



Source: General Arrangement – Ground Floor, Botany Aquatic Centre – Stage 01, Drawing No. DA201A Rev A, issued 31 March 2021

Figure 6: Proposed existing children's pool to be demolished



Source: Existing & Demolition – Site Plan, Botany Aquatic Centre – Stage 01, Drawing No. DA111A Rev A, issued 31 March 2021

Parking Appraisal

Parking Requirements

As noted in Council's submission reproduced in this letter, Botany Bay Development Control Plan 2013 does not provide parking rates specific to the proposed uses and notes that a parking assessment based on survey of similar developments is typically required.

Given the ongoing COVID-19 issues and associated lockdown at the time of writing, it is acknowledged that current parking conditions are not considered 'normal' and as such parking demand surveys completed at this time would not be representative of typical conditions. The winter months also do not aid accurate data from surveys at comparable centres, with a general lack of similar facilities across Sydney nonetheless.

In this regard a first principles assessment has been completed based on the expected operation of the slides and aqua play area. This has been defined as follows:

Staff:

- the slides and aqua play area are expected to generate requirements for up to three additional aquatic centre staff
- all staff are expected to drive, equating to a maximum demand of **three spaces**.

Visitors:

- water slide user profile expected to mostly include children and teenagers, with children only in the aqua play
- peak periods are anticipated to generate use by 100 patrons per hour
- 30 per cent of users (30 patrons) are anticipated to be teenagers who will likely be dropped off or make their own way to the centre by walking, cycling or public transport, hence will be unlikely to generate demand for parking
- 70 per cent of users (70 patrons) are anticipated to be children who will likely arrive with at least one or two other children via private vehicle and hence generate parking demand
- the slides and aqua play area are expected to be at least partially ancillary (or complementary) to the existing aquatic facilities. To account for these complementary uses, a 50 per cent discount has been applied to the anticipated number of people generated, resulting in 35 'new' patrons per hour generating demand for parking

- with an average car occupancy of 2.5 people (given characteristics of families arriving with multiple children), this equates to a parking demand of **14 spaces**.

Based on this, the development could generate an additional demand for 17 parking spaces (three staff spaces plus 14 visitor spaces).

Adequacy of Car Parking Supply

The proposal does not include any change to parking arrangements in the adjacent 163-space car park on its western boundary nor on-street in the vicinity.

As shown in Figure 2, the Aquatic Centre peak month is January, with reasonable demand right across the summer months between November and February. The existing car park was observed to generate an average summer peak demand for 105 spaces and a maximum peak day demand for around 120 spaces (on the Australia Day long weekend). The average demand equates to 65 per cent (58 vacant spaces) and peak day 74 per cent (43 vacant spaces). On-street parking demand was proportionately similar.

With the likelihood for some cricket matches to be scheduled at Booralee Park on weekends throughout the summer months, additional demand for about 20 spaces could be expected in the car park on top of the average summer peak demand. There is also more likelihood that on-street parking demand associated with cricket matches would occur further south given convenience of that parking proximate to the cricket pitches.

With an average peak car park demand of 105 spaces, an additional 20 spaces would result in about 75 per cent demand (or 125 spaces) with about 40 vacant spaces. As such, the anticipated demand of 17 spaces associated with the proposal would still leave about 20 vacant spaces in the car park during the average peak throughout summer.

Traffic Impact Appraisal

Traffic Generation

Peak demand for the new slides and aqua play area is expected to mostly align with the Saturday midday road network peak period. Traffic generation is naturally linked to parking demand any drop off/ pick-up activity.

The minor additional staff are not expected to generate additional vehicle trips during peak periods given shift times would mean they travel to work earlier in the morning and leave later in the afternoon. On the basis that about 50 per cent of the additional parking demand would arrive or depart in any peak hour, there could be an additional 14 vehicle trips (seven in and seven out) per hour.

As discussed above, 30 patrons (mostly teenagers) are also expected to walk, cycle, catch public transport or be dropped-off at the centre. On the basis that 50 per cent would travel during the peak hour and 50 per cent of these being dropped-off or picked-up, there could be a further 16 vehicle trips associated with drop-off/ pick-up activity (two vehicle trips per drop off/ pick up).

As such, an additional 30 vehicle trips could be generated by the proposal during the Saturday midday road network peak period.

Traffic Distribution

All vehicles would approach/ depart the site from Jasmine Street. Vehicles will likely use a variety of approach and departure routes depending on their origin/ destination, including Bay Street/ Banksia Street and Botany Street to travel north to Rosebery/ Mascot, Banksia Street and William Street/

Swinbourne Street to travel east to Pagewood and Banksia Street and Botany Road/ Tenterden Road to travel south through Botany.

Given the low traffic volumes generated by the proposal during peak periods, representing one additional vehicle trip every two minutes, this additional traffic could not be expected to compromise the safety or function of the surrounding road network.

Summary

The proposed development includes demolition of the existing children's pool and shelter, construction of three water slides, an outdoor aqua play area and associated building for mechanical servicing and change rooms at Botany Aquatic Centre. The minor additional demand for 17 parking spaces and 30 new vehicle trips are expected to be readily accommodated within the precinct with little discernible change on current and historical demand in the precinct. The existing adjacent car park could wholly accommodate the additional demand, with surrounding intersections operating well, the same as existing conditions.

I trust this provides a thorough assessment of the transport effects associated with the proposed development. Naturally, should you have any questions or require any further information, please do not hesitate to contact me on (02) 8448 1800.

Yours sincerely

GTA CONSULTANTS



Rhys Hazell
Director