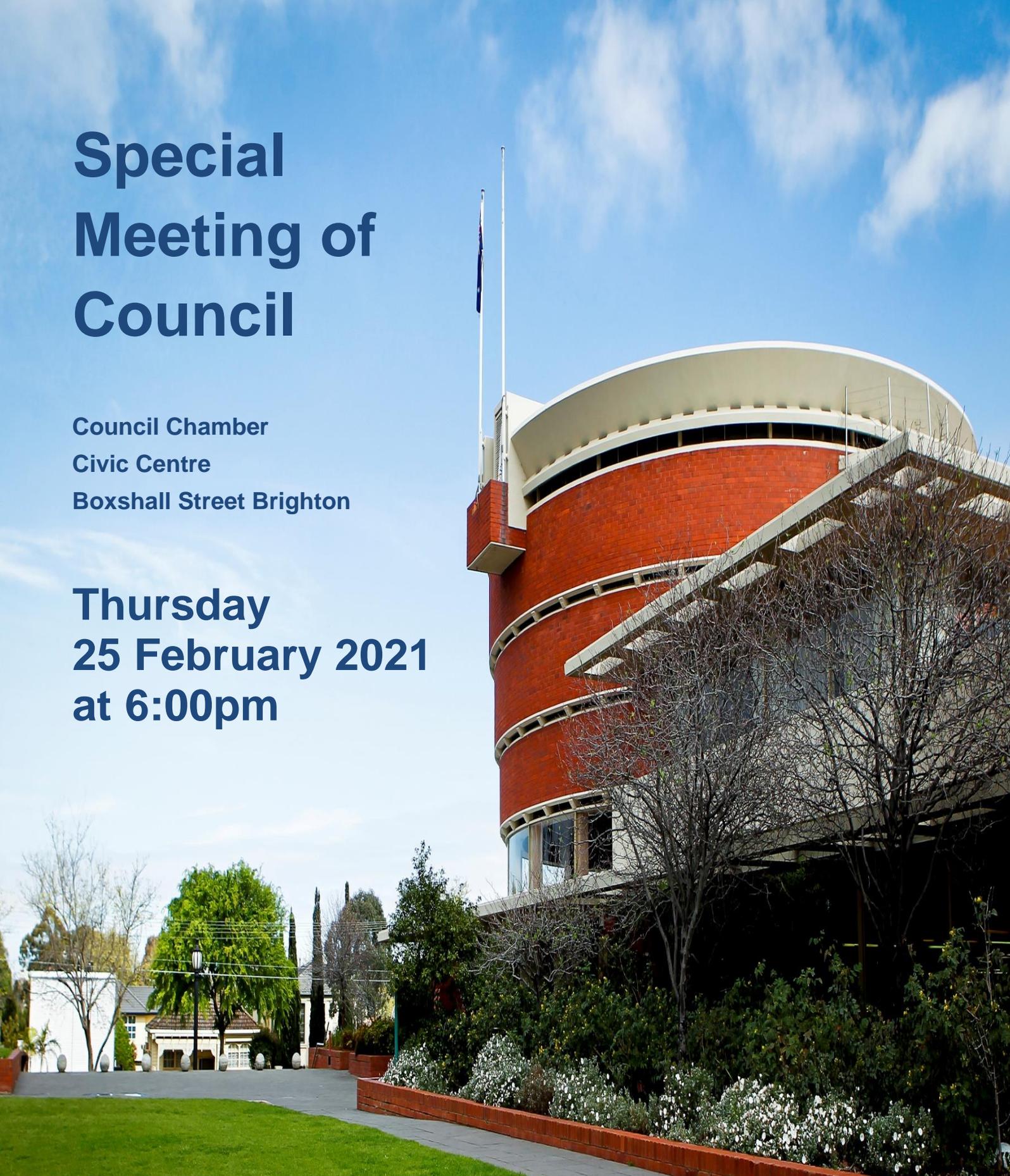


Special Meeting of Council

Council Chamber
Civic Centre
Boxshall Street Brighton

Thursday
25 February 2021
at 6:00pm



Agenda

Chair: Cr Laurence Evans OAM (Mayor)

Councillors: Cr Sonia Castelli (Deputy Mayor)
Cr Alex del Porto
Cr Hanna El Mouallem
Cr Clarke Martin
Cr Jo Samuel-King MBBS
Cr Fiona Stitfold

Important Notice

Council is closely monitoring the State Government's directives in response to the ongoing COVID-19 pandemic.

Due to density and distancing requirements for indoor public spaces, temporary meeting procedures remain in effect whereby **Council and Committee meetings will be held without members of the public present; however, meetings will be live-streamed via Council's website:**

Live Council Meetings

This protocol will continue to be reviewed in line with changing restrictions and government advice.

Alternative arrangements are in place for members of the community to **be heard** in relation to eligible items listed on the agenda via the following link:

Requests to be heard (Provide a Written Statement)

For further queries, please speak with the Governance office on 9599 4444

In accordance with Chapter 2, Section 11 of Council's Governance Rules 2020, a **Special Meeting of Bayside City Council** will be held at the Council Chamber, Civic Centre, Boxshall Street Brighton, on **Thursday, 25 February 2021** at **6:00pm** for the purpose of transacting the following business:

Order of Business

1. Apologies
2. Disclosure of any Conflict of Interest of any Councillor
3. Reports by the Organisation
 - 3.1 Bayside Netball Centre - Holloway Road Proposal 5
4. Urgent Business

1. Apologies

2. Disclosure of any Conflict of Interest of any Councillor

3. Reports by the Organisation

3.1 BAYSIDE NETBALL CENTRE - HOLLOWAY ROAD PROPOSAL

Environment, Recreation and Infrastructure - Open Space, Recreation & Wellbeing
File No: PSF/21/19 – Doc No: DOC/21/48874

Executive summary

Purpose and background

The purpose of this report is to provide Council with an update regarding the community consultation and a broader project update for the proposed development of sports facilities (Netball and sportsground) at Sandringham Secondary College – Holloway Road.

In recent years Council and the College have explored opportunities to develop the Holloway Road site to deliver facilities that address the School's need for additional classrooms and modern sports facilities while providing opportunities for Council to access fit-for-purpose sports infrastructure.

In May 2020 the State Government announced \$10 million funding to complete Stage 1 of the College's masterplan, focusing on sports and music facilities. Soon after Council officers engaged with the School Principal to discuss opportunities for Council co-investment as part of this Stage 1 development.

The Government structure to deliver school projects resulted in officers engaging with representatives of the Victorian Schools Building Authority (VSBA) to formally discuss the various opportunities at the College. Subsequently a proposal was submitted to the VSBA detailing Council's desire to construct 2 indoor and 9 outdoor sports (netball) courts as part of the implementation of Stage 1 of the College's masterplan (noting that a third indoor court is proposed as part of the Schools development).

At the 15 September 2020 Ordinary Meeting of Council, it was resolved that Council provide in-principle support to enter into discussions with the VSBA to develop sports facilities (Netball and natural turf sportsground) at the Holloway Road campus.

Council reaffirmed its support for the proposed development at its 22 December 2020 Ordinary Meeting where it was resolved that Council:

1. *reaffirms its support for the proposed netball development at Sandringham College, Holloway Road campus*
2. *uses its best endeavours to minimise impacts on residents*
3. *receives a report at a future meeting of Council that:*
 - a. *details the issues addressed arising from community and stakeholder consultation*
 - b. *details how the proposal will respond to limiting noise and light spill from the site*
 - c. *details how the proposal will mitigate impacts on the Bay Road Reserve Heathland and implement initiatives to minimise impacts on wildlife e.g. reduced UV lighting types*
 - d. *presents a final schematic design and project costings*
 - e. *presents a Community Joint Use Agreement for its consideration.*

Key issues

Community Engagement Plan

Officers developed a community engagement plan and sought agreement from VSBA to ensure that the messaging aligned with both organisations' communication processes.

The consultation focused specifically on the impacts on nearby residents, including traffic throughout the local area, parking arrangements and restrictions, pedestrian movement, light spill relating to court lighting and noise related to gameplay.

To maximise community awareness the following communication tools have been utilised:

- social media, especially 'sponsored' posts to increase audience reach
- digital advertising targeting key demographics
- Council's e-newsletter *This Week in Bayside*
- email notification to subscribed participants
- direct emails to key stakeholder groups
- online live stream and recording of project information and response to questions.

To ensure the residents of both Aged Care Facilities in proximity of the College have an opportunity to provide feedback, hard copy surveys were distributed to residents and made available on request to other stakeholders. No residents of either facility submitted comments regarding the proposal.

Community Consultation

From 7 to 23 December 2020, Council conducted a community engagement process to gather community feedback on residential impact of the proposal. In response to State Government pandemic restrictions, the engagement process was predominately undertaken via online platforms; however, as restrictions eased in-person meetings were also conducted.

Community members were directed to Council's Have Your Say page, where they were provided opportunity to complete a project survey or submit a question to Council. Questions submitted via this page were collated, grouped into themes with responses presented to the community via a live-streamed Question and Answer session, via Council's website.

The session, delivered by the Director Environment, Recreation and Infrastructure was attended by 53 individuals and responded to 45 questions, across 21 themes (Attachment 1).

A recording of the session was uploaded to the Have Your Say page to enable stakeholders that were unable to attend, the opportunity to watch at an appropriate time. The session was well received; however, a level of dissatisfaction was expressed regarding the lack of opportunity to undertake two-way discussion.

Throughout the engagement process, direct contact details of officers were provided to the community to enable open dialogue regarding concerns.

Individuals did choose to provide formal correspondence, expressing their objection to the proposal via email and letters to Councillors and officers with 172 formal responses (letter) issued, some individuals submitting on multiple occasions. Additional engagement was undertaken through direct calls to relevant officers and Councillors as well as Councillors and officers undertaking a variety of online and face-to-face meetings with residents.

Have Your Say page

The Have Your Say page was updated following the September Council meeting to reflect the proposal at the College, while still retaining historical data relating to the design development at the Wangara Road site. Between 26 September to 23 December 2020, the page generated the following traffic:

Views	Visits	Visitors	Contributions	Contributors	Followers
<u>6,364</u>	<u>3,032</u>	<u>1,841</u>	<u>284</u>	<u>215</u>	<u>138</u>

Views – the cumulative number of times a visitor visits the page

Visits – the number of end-user sessions associated with a single visitor

Visitors – the number of unique public or end-user in a site. A visitor is only counted once

Contributions – the total number of responses of feedback collected

Contributors – the unique number of visitors who have left feedback

Followers – the number of visits who have subscribed to the page using the follow button.

Summary of the top five visited – Have Your Say pages:

Page Name	Visitations	Visits	Visitors
Bayside Netball Centre	54.8%	1,663	1,117
Bayside Netball Centre proposal – more information	32.8%	993	704
Your Feedback (Survey)	27.3%	827	576
Live Q n A session	17.9%	542	180
Update on the proposed Bayside Netball Centre, Holloway Road	7.5%	228	180

Project Survey

The survey, to which 197 responses were submitted, consisted of nine interest areas, and sought feedback to each of the following statements:

- car parking proposed for the School site
- parking restrictions proposed around the School site
- managing traffic conditions on Holloway Road
- monitoring of parking
- staggering match game times to reduce car parking demands
- managing pedestrian safety around the school site
- proposed operating hours for the Centre
- managing noise impacts from sporting activity
- managing light spill.

The table below summaries the feedback received for each statement:

Statement	Response topics
<p>Car parking proposed for the School site.</p> <p>170 respondents</p> <p>63 participants posed questions to this statement</p>	<ul style="list-style-type: none"> • Resident access to on-street parking, parking restrictions and monitoring • Benefits for the School, School staff access to on-site parking, control and securing of the car park • Number of car parking spaces at Wangara Road • How the proposed 98 car spaces determined and calculated as the traffic report recommends 114 car space • Managing car park availability and when the car park is full • Viability of more parking further down George Street as an option
<p>Parking restrictions proposed around the school site.</p> <p>154 respondents</p> <p>41 participants posed additional questions</p>	<ul style="list-style-type: none"> • How permits will be allocated, number per household, arrangements for visitors and whether there will be a cost to residents • The rationale behind the proposed approach • How parking will be managed for Regent Court and Forrest Court as there are no proposed parking restrictions • How the 1hr parking zones work and whether the time limits apply to residents • How residents are expected to park in Cooke Street and Green Street • How parking restrictions will be monitored and how many parking officers are being employed to police parking restrictions • Arrangements for school coaches/buses parking in the street to pick-up or drop-off students • Budget and mechanisms planned to educate the population about the parking restrictions
<p>Managing traffic conditions on Holloway Road.</p> <p>145 respondents</p> <p>26 participants posed questions to this statement</p>	<ul style="list-style-type: none"> • Whether school traffic and the movements of 500 students of the Japanese school on Saturday mornings have been included in the traffic report • Whether the traffic management plan considers Miller Street, the impact on Bay Road, traffic lights being installed at the George Street/Wangara Road and George Street/Bay Road intersections and widening Holloway Road • How Holloway Road residents will exit their driveways with an increased amount of traffic in a narrow street

Monitoring of parking.

135 respondents

32 participants posed additional questions to this statement

- The future projections of traffic flowing along Holloway Road and whether the break between Holloway Road and Wangara Street may need to be removed to ensure continuous traffic flow
- How often parking will be monitored, who will do the monitoring, for how long and how Council will enforce parking restrictions
- Whether Council will act upon residents' views, concerns and complaints of illegal parking and blocked driveways
- Whether residents will be fined for parking on or partially on nature strips to prevent damage to vehicles
- How parking permits will work and how many will be issued per household
- How often and who will be consulted during this process.

Staggering match game times to reduce car parking demands.

153 respondents

47 participants posed additional questions to this statement

- How the sirens will work for staggered game times
- Other locations and associations where staggered game times have been implemented
- Whether the staggered game times will be formalised into an agreement
- How to ensure adherence to the proposed staggered game time guidelines and penalties that will apply for non-compliance

Managing pedestrian safety around the school site.

126 respondents

23 participants posed additional questions to this statement

- How trucks and factory workers will handle the speed humps and whether there will be extra noise for residents
- How buses and passengers will access the Centre
- Assessment of the effect of crossings at the intersection of Wangara Road
- Pedestrian safety at other major intersections (Bluff/Holloway Roads, George Street/ Bay Road)
- The recommendation for zebra crossings without flashing lights
- Pedestrian safety along Holloway Road

Managing noise impacts from sporting activity.

162 respondents

48 participants posed additional questions to this statement

- Whether the proposed operating hours comply with EPA regulations
- How adherence with the operating hours will be monitored and whether penalties will be imposed if matches are played beyond the proposed times

- Why the proposed operating hours for the Holloway Road site differ from those proposed for Wangara Road site
- Whether local residents have any influence on the timing of the operating hours
- When the community will have access to the netball courts and facilities
- Whether the operating hours apply every day and weekend for the entire year

Managing light spill.

131 respondents

19 participants posed additional questions to this statement

- When an environment protection assessment and environmental impact study will be prepared for the reserve
- How light spill will impact on wildlife, particularly nocturnal animals, in the local area including the heathland sanctuary and how this will be addressed
- The extent to which light may shine upwards and into neighbouring residences, and strategies that will be taken to rectify unexpected light spill
- Times that the Centre, netball court and car park lighting will be turned off
- Whether some courts need to be positioned outdoors
- Other light mitigation options that may be possible and implemented
- Responsibility for paying lighting bills

Survey respondents were provided with an opportunity to add any additional comments, 169 individuals contributed statements as detailed in the Bayside Netball Centre – Community Engagement Summary (Attachment 2).

While the quantity of additional comments is substantial, the comments do not raise new areas of concern, instead focused on statements around lack of transparency regarding the project, a flawed community engagement process, questions of validity of consultant reports and objection to the location of the proposed facility. Feedback strongly encouraged Council to consider a multi-site approach to delivering a netball facility within the municipality.

The engagement process identified that clear messaging will be required to dispel misleading communication in the following key areas and assure residents that a response to their feedback is implemented where possible.

Traffic Management Plan

We heard:

1. Modelling does not reflect the full span of hours proposed.
2. 98 onsite car parks are not sufficient for this proposal.

In response:

1. Modelling has been extended on weekends to reflect proposed hours (previously 4pm) and tests an assumption to show the impact if an increased number of participants were to arrive via vehicle (previously 75%).

Modelling indicates that the road network will tolerate this use although there will be impacts on amenity, with Holloway Road exceeding the notional environmental capacity of the road of 3,000 vehicular movements. A reduction of hours, primarily on weekend usage, will lower this estimate.

2. The Traffic Management Plan supports that the 98 car parks plus parking on George Street will be suitable for the project. While noting that, an additional approach to resolving the issues would be to plan for added parking at the Wangara Road site. It is proposed that this be planned for and implemented as part of Councils capital works program.

Permit Zones

We heard:

1. Residents cannot park within the vicinity of their home and will be unable to entertain guests.
2. Permit parking should be extended and include both sides of surrounding streets.

In response:

1. Residents can park in a 1P zone without penalty.
Resident cars with permits can be parked on the street with guests using off street parking.
Visitor parking permits are available for purchase.
2. A review of the permit parking will be undertaken 6 months following the opening of the proposed facility. Having the permit parking on both sides of the road will further exacerbate the issue raised in community feedback about limited resident and visitor parking.

EPA restrictions

We heard:

1. The proposal breaches residential noise regulations.
2. Light spill will impact the Heathland.
3. Light spill will adversely impact residents of Sandy Hill apartments.
4. Noise will prevent residents from sleeping and have peaceful enjoyment of their homes.

In response:

1. Amplified systems will be restricted (fixed) at decibel levels below EPA requirements.
2. An environmental impact study has been commissioned.
3. A report will be published demonstrating levels of light spill.
4. Australian Standard, wildlife friendly LED lighting will be installed on outdoor courts.
5. While EPA do not impose restrictions of noise generated from sports, it is proposed to reduce the hours of use by SDNA, to protect residential amenity.

Acoustic consultant report – noise mitigation

Council engaged Stantec Australia to provide acoustic services for the proposed outdoor netball courts associated with the Sandringham College Community Sport Facility located on Holloway Road.

The report set out as Attachment 4 has been prepared considering the schematic design as set out in Attachment 5 and presents the noise emission design targets applicable to the project

and assesses the likely noise impact of the proposed outdoor netball courts on nearby residential land uses. Acoustic design targets presented in this report are based upon the EPA Publication 1254 October 2008 Noise Control Guidelines, World Health Organization guidelines and Stantec experience.

The objectives of this report are to:

- establish relevant environmental noise targets to limit noise impact from the project upon sensitive receivers
- identify critical noise sources potentially affecting the residences
- evaluate the likely noise impact from these noise sources on the nearest sensitive receivers
- provide preliminary mitigation measures where noise emissions from the future Netball courts are predicted to exceed established noise emission targets.

It should be noted that there is no mandatory criterion applicable to activity noise from a sport facility upon sensitive receivers. In the absence of specific criteria, design targets for limiting noise emission from the proposal will be made to minimise the risk of complaints.

The Victorian EPA define guidelines for noise control in the Publication 1254 October 2008. Section 13 of this document covers noise control for Public Address (PA) systems associated with sporting activities. This document states the following:

the environmental objective should be noise intrusion of not more than 5 dB(A) above background at any affected residences or other noise sensitive locations. Corrections for tonal or impulsive noise usually are not necessary, and further tolerance of up to 5dB(A) may allow for unique or very infrequent activities with recognised social merit. Amplifier level settings must be minimised whilst ensuring conveyance of information to audience or participants is adequate. Restrictions on the times of use of public address systems should be considered. Noise from a PA system must not be audible inside a residential dwelling during normal sleeping hours.

Recommended noise mitigations

As detailed in the acoustic report, the only methods for reducing impact of voices from a sporting venue is to provide increased distance separation between the source of noise and sensitive receivers or to introduce acoustic barrier elements between the source and receiver.

Due to the arrangement of the site and height of the nearest sensitive apartment buildings along Bay Road, mitigation by installation of a noise barrier is not a practical solution as the barrier would be required to span a significant height of over 10 metres to produce any meaningful shielding.

A proposal to shift the indoor stadium to the north-west of the project site is impracticable due to a large Melbourne Water easement that prohibits such construction in this area. It is noted in the attached report that this solution alone is unlikely to reduce noise emission levels sufficiently to achieve the proposed noise emission criteria.

The recommended installation of a noise barrier on the south of the site will be explored further with the design team however is unlikely to be achieved due to the aesthetic impacts on the school and adjacent area.

Noise emission from the PA and siren systems could be controlled through re-selection of loudspeaker type and installation of a noise limiter.

It is recommended that a combination of noise limiter installation, selection of PA loudspeaker type, and strategic location of loudspeakers should be employed to achieve the design criteria at all effected residential receivers. It is expected that appropriate consideration of these variables will enable a functional PA system at the venue while minimising impact on residents.

As detailed in the data provided within Table 7 whistle selection can significantly reduce the noise emission from whistle events. As it is unreasonable to assume that referees could be expected to consistently produce low strength whistle output, selection of a quieter whistle type (e.g. 'Sifflet Whizzball Hand Held') is recommended to most effectively reduce impact from whistle events.

It is highlighted in the report that selection of a quieter whistle will not result in compliance for ongoing noise or impulsive noise at the proposed site.

To avoid potential sleep disturbance events, it is recommended that the operating hours of the venue be altered so that no games begin before 9am (currently games can begin at 8am on Saturday morning) other than the proposed up to five extra use days per year which could operate from 8am to 6pm on a Sunday. This would remove, outside of those up to five days, the impulsive noise (sleep disturbance) criteria. It is noted that in the event that the Saturday games finish by 6pm, the night-time criteria will no longer be required.

Traffic Impact Assessment (TIA)

Concerns regarding traffic implications of a development at the College was anticipated with a consultant engaged to prepare a report for the consultation process (Attachment 3). The proposal makes a series of recommendations to address the traffic impact of the proposed development and has been made available via the Have Your Say page. Critical messages from this report include:

- on-site parking should be maximised
- stagger match start times to reduce peak car parking demands
- overflow parking should be considered at the Wangara Road site
- permit zones introduced for evening and weekend hours
- no-stopping restrictions recommended for south side of Holloway Road
- car park design to consider one-way traffic with entry from Holloway Road and exit via Wangara Road
- an access security mechanism such as boom gates is introduced to prevent access outside of operating hours
- bus/patron pick up and drop off point adjacent to the site
- road humps provided at regular intervals
- zebra crossing from Wangara Road to the College, north and south ends of George Streets
- speed cushions to accommodate trucks on the north and south of George Street.

Following the engagement process, sensitivity testing was undertaken, assuming that all participants arrived via vehicle, and modelling demonstrates a peak hour traffic volume as:

- Saturday/Sunday (Competition):
 - i. 'Likely' Peak Hour Traffic Volume – 432 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 576 vehicles per hour
- Weekday PM Peak (Competition / Training):
 - i. 'Likely' Peak Hour Traffic Volume – 324 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 432 vehicles per hour.

While Holloway Road is classified as a local road, its land use and traffic flow arrangements are best classified between a local road (up to 3,000vpd) and a collector road (up to 7,000vpd).

Analysis of the of likely daily volumes associated with the proposed weekday operating hour (4pm-8:30pm/9:30pm) and weekend operating hours (8am-6pm/8pm, these operating hours and the traffic created may now reduce further given the recommendation of the Acoustic report to commence operating at 9am on a Saturday/Sunday) indicate the following daily traffic volumes:

Holloway Road:

- Saturday – 2,505-3,615vpd
- Weekday – 1,682-2,407vpd

Wangara Road:

- Saturday – 2,089-2,668vpd
- Weekday – 1,017-1,206vpd.

It is recommended to adopt reduced weekend operational hours to reduce daily traffic volumes on Holloway Road and Wangara Road.

The intersection of Bay Road/Reserve Road operates over capacity in the existing conditions, with current deficiencies. The traffic volumes generated by the netball centre through this intersection are considered minor. It is recommended that Council liaises with VicRoads to:

- review cycle and phase times based on most recent traffic volume data
- consider dedicated right-turn lanes and left turn slip lanes
- consider turn bans or two right-turn lanes from Reserve Road into Bay Road.

If the recommendation to reduce operational hours on weekends is implemented, there is no reason why the proposal should not progress.

Site design

Officers have worked with the design team, School Principal and the VSBA to develop a design that responds to the needs of the Sandringham District Netball Association (SDNA) and the concerns of the local community. The final site context plan is set out as Attachment 5 and details the following:

- two indoor netball courts and associated amenities – one joint line-marked for netball and basketball and a netball only show court
- nine outdoor netball only line marked courts with training and competition standard lighting, including:
 - five courts south of the Bay Road apartments – design has been modified to create a 15 metre landscape buffer zone between these courts and the fence line of the adjoining apartment buildings
 - two courts south of the Bay Road Heathland Sanctuary – approximately 20 metres south of the Sanctuary and clear of the 'spill' vegetation on the school site, negating any need for tree removal
 - two courts north of the car park and approximately 30 metres north of Holloway Road
 - Eastern COLA (Covered Outdoor Learning Area) providing a covered outdoor court with spectator seating adjacent to the eastern wall of the indoor courts – this covered court is a key enabler of school hours access for SDNA to the two indoor courts
 - all outdoor court lighting will be in line with relevant Australian Standards for glare and spill and subject to confirmation of suitability for

competition netball, wildlife friendly LED lighting will be installed with low output at blue, violet and ultraviolet wavelengths ('warm-white' or filtered LEDs with minimal emission below 500nm, based on the spectral power distribution curve)

- 98 space car park with entry via Holloway Road and exit via Wangara Road as per the proposed Traffic Management Plan – the car park will have electronic boom gates to ensure car park is not used as a thoroughfare or shortcut from Bluff Road to Reserve Road. Boom gates will also prohibit access outside of prescribed usage hours preventing the site being used for late night parking and anti-social behaviour
- sports oval with a synthetic cricket wicket – this will not include sportsground lighting with Council allocating out of school hours use for summer sport and perhaps some pre-season training activities. The oval will not be allocated for winter sports such as soccer or Australian Rules football. There is on-going discussions with the project design team as to the size this oval can be and what level of cricket it may accommodate
- landscape design – will incorporate indigenous planting in consultation with Friends of Bay Road Heathland Sanctuary
- one of Council's most sustainable new buildings with an expansive solar panel and battery system.

Project costs

Significant work has been undertaken to value manage the design, particularly in response to advice regarding recent construction industry cost escalations and price pressures as a result of high demand for building materials as various large scale stimulus projects begin to roll-out.

A QS (Quantity Survey) cost estimate completed in the last two weeks details the following costs:

ELEMENT	COST
Netball Courts (2 Indoor & 9 Outdoor)	\$14,850,000
Sports Oval	\$550,000
College only fitness area	\$400,000
Car Park	\$700,000
ESD – Solar Panels and Batteries	\$350,000
Traffic & Parking Management Plan Implementation	\$150,000
TOTAL PROJECT COSTS	\$17,050,000
Option - Eastern COLA (Covered outdoor court)	\$1,000,000
TOTAL COST INCLUDING OPTION	\$18,050,000

To enable a fair comparison, officers also engaged a consultant to provide an updated QS cost estimate for the Wangara Road project. A QS completed in early February 2021 has updated the estimated costs of the proposed Wangara Road project to be \$26.9 million. These updated figures indicate that Council will save approximately \$9.85 million by delivering the netball project at the school site rather than at Wangara Road, or \$8.85 million with the covered outdoor area included.

Deliverability and project timelines

The proposed netball centre at Holloway Road is highly deliverable on a flat unimpeded site, without contamination and as a State Government site not subject to Town Planning Permit conditions. To build on such a site is an efficient and cost-effective process. If approved at the 25 February 2021 Ordinary Meeting, it is anticipated that construction will be completed by late 2022 with the centre being used by SDNA and its members in early 2023.

The Environmental Protection Authority audit of the Wangara Road site continues, and outcomes will not be known until at least September 2021. There is still some risk that audit outcomes may not permit Council to construct a netball centre at Wangara Road.

If the audit permits construction, the proposed netball centre would be subject to Town Planning Permit processes, including a likely appeal through VCAT. With the project on hold until the EPA Audit is completed in August 2020, a Town Planning Permit and further consultation process and a likely VCAT appeal process, it is anticipated that construction would not start until late 2022 with the facility ready for use no earlier than late 2024. If a further appeal is made to and heard by the Supreme Court the project would be delayed a further 12 months.

Geotech and soil sampling at Holloway Road Campus

Geotech and soil sampling has been undertaken at the proposed Holloway Road development site. The Geotech consultant concluded that based on the soil analytical results of this assessment, the current contaminant concentrations in soil were generally less than the adopted human health and ecological criteria, the site was considered to pose low risk to onsite and offsite receptors. Therefore, the site is considered adequate for the proposed use. Concerns have been raised by local residents around the water table in this area and the impacts on developments with underground car parks. Initial investigations into these comments have identified that the development that is proposed to take place on the Holloway Road site won't require the level of excavation that some of the nearby developments have required and that the detailed design and construction management plan for the project will work through any issues if they were to arise.

Community Joint Use Agreement (CJUA)

The CJUA is an agreement between Council, the Department of Education and the School Council. Negotiations regarding the final CJUA continue with officers meeting with the VSBA, the School Principal and a School Council representative.

The CJUA will provide Council with outside of school hours access to and management and maintenance responsibility of the development area as detailed in the site context plan set out as Attachment 5.

Any special conditions regarding specific hours of access during out of school times should be addressed through a subsequent usage licence with the Sandringham District Netball Association (SDNA). The proposed recommendation seeks Council to authorise the Chief Executive Officer to sign a final CJUA with another recommendation concerning the SDNA licence that can better influence hours of use.

Special conditions of use

As mentioned above the CJUA is a higher level agreement that provides Council with access to and management of the development site outside of school hours. In response to concerns raised by residents regarding proposed netball operating hours the following usage is proposed:

	Mon - Fri	Total Weekday Court Hours	Sat & Sun	Total Weekend Court Hours
Indoor Courts (x3)	4pm – 9.30pm	82.5hrs	Sat 9am – 8pm Sun 9am – 8pm	66hrs
<i>Advertised hours</i>	<i>4pm – 10.30pm</i>	<i>97.5hrs</i>	<i>8am – 9.30pm</i>	<i>81hrs</i>
Outdoor Courts (x9)	4pm – 8.30pm	202.5hrs	Sat 9am – 6pm Sun 9am – 4pm	144hrs
<i>Advertised hours</i>	<i>4pm – 9.30pm</i>	<i>247.50</i>	<i>8am – 9.30pm</i>	<i>243hrs</i>
Total Court Hours		285hrs		210hrs
<i>Advertised hours</i>		<i>345hrs</i>		<i>324hrs</i>
Reduced Hours		60hrs		114hrs

This provides SDNA and its members a total of 495 hours of court access each week. While this is less than the SDNA have requested, this proposed usage strikes the necessary balance between netball use and local residential amenity. The revised hours see a reduction of 174 hours in total hours of use as advertised during the consultation period.

It is also proposed that SDNA receive the ability to have five ‘additional use days’ that can take place on a Sunday. A similar agreement is in place at the Sandringham Family Leisure Centre with the Sandringham Basketball Association. This would allow for the courts to be used on five Sundays per year from the hours of 8am to 6pm. Council has a ‘good neighbour’ Policy that will be implemented where notice is required to be provided to neighbours in the lead-up to this additional use. This option is seen as a compromise to significantly reduce usage on a Sunday for the majority of the year but to still allow for up to five high usage days. Given this usage is only a maximum of five times per year, and while taking note of the recommendations in the Acoustic report, it is proposed that this usage remain at 8am to 6pm.

Staggered start times

Staggering the starting times of games on Saturday and Sunday will assist in easing traffic and parking pressures. In discussions with SDNA it has been agreed that games will be staggered into three groups of start times over the 12 courts as follows:

- Group 1 – 9am
- Group 2 – 9.15am
- Group 3 – 9.30am

Carrying this through the day will result in a ‘cleaner’ changeover period, providing more empty car park spaces as another group arrives for their upcoming game.

Impact on Heathland

Officers have met with the Convenor of the Friends of Bay Road Heathland Sanctuary to discuss and respond to a range of concerns regarding the possible impact of the netball development on the adjacent Sanctuary. Discussions have been positive, and officers have been able to clarify a number of concerns and committed to several actions to mitigate the impact of the development on the Sanctuary. Agreed actions include:

- Outdoor court lighting will be in line with relevant Australian Standards for glare and spill and subject to confirmation of suitability for competition netball, wildlife friendly

LED lighting will be installed with low output at blue, violet and ultraviolet wavelengths ('warm-white' or filtered LEDs with minimal emission below 500nm, based on the spectral power distribution curve).

- Council have now provided the Friends of group with a copy of the acoustic report and will provide a copy of an Environmental Impact Report once completed.

Proposed two site option

There has been feedback by residents and some Councillors proposing a two-site solution whereby the indoor courts are built at Holloway Road and the required outdoor courts are part of a redeveloped Thomas Street Netball Centre.

From the start of negotiations, the VSBA have been clear that they have a strict timeline to deliver the College redevelopment project. There is a risk that if Council was to seek to amend this proposed development VSBA may discontinue with the netball project and focus solely on delivering a new College campus without netball facilities.

New open space at Wangara Road

Developing the netball centre at Holloway Road provides a unique opportunity to create a new six-hectare open space at the Wangara Road site (driving range). Subject to the outcomes of the EPA Audit in August 2021, officers recommend Council undertakes a master planning exercise with the Bayside community to repurpose this significant piece of open space.

Summary and conclusion

Extensive work has been completed and compromises made by Council, the College, VSBA and SDNA to make the proposed netball centre development at Sandringham College, Holloway Road feasible. It is also acknowledged that while Officers have and will continue to attempt to reduce any impacts on local residents, that some of these impacts will still remain.

In summary the work done to date provides:

- \$9 million savings to Council while also providing improved outcomes such as the covered outdoor court
- delivery timeline that will see the Bayside sporting community using the facility in early 2023
- a design that directly responds to local community feedback by providing:
 - 15 metre landscape buffer zone between northern courts and the fence line of the adjoining apartment buildings
 - 20 metre landscape buffer to the adjacent Heathland Sanctuary and protection of spill vegetation on the College site
 - southern outdoor courts approximately 30 metres from Holloway Road
 - covered outdoor court with spectator seating adjacent to the eastern wall of the indoor courts
 - Australian Standard, wildlife friendly LED lighting installed on outdoor courts
- comprehensive and effective traffic and parking management plan
- proposed hours of use that strikes the balance between netball usage and local residential amenity
- new six-hectare open space at the previous driving range site on Wangara Road.

There has been a lot of commentary and concerns from a range of people regarding the proposed netball development at Sandringham College. The revised design, traffic

management plan and hours of use seek to weigh up these concerns and address them as far as possible. Officers have attempted to balance the needs of local netballers for new facilities and the need to minimise the impacts of the project on local residents as much as possible.

Recommendation

That Council:

1. endorses the Design for community sporting facilities at Sandringham Secondary College
2. allocates a revised budget of \$17,050,000 for the netball project;
3. subject to successfully negotiating reasonable school hours access to the two indoor courts, allocates \$1,000,000 for the covered outdoor court facility
4. endorses the Traffic Management Plan – including Stage 2 of additional car parking at Wangara Road (previous Driving Range) subject to EPA Audit outcomes
5. implements the following recommendations of the Acoustic Report commissioned by Council
 - a) employs a combination of noise limiter installation, selection of PA loudspeaker type, and strategic location of loudspeakers to achieve the design criteria at all effected residential receivers
 - b) maintains sole and secure control of the volume of elements being broadcast through the PA and siren system ensuring it is effective for venue and match control while also minimising impact on nearby residents
 - c) includes a condition in the usage License requiring the use of a quieter whistle type such as the Sifflet Whizzball Hand Held whistle detailed in the acoustic report set out as Attachment 4
 - d) explores an option to include a noise barrier on the south of the project site adjacent to Holloway Road
 - e) other than the five Additional Use Days, restricts starting times on indoor and outdoor courts to 9am
6. seeks to finalise as soon as practicably possible, the proposed Community Joint Usage Agreement for community access to sporting facilities at Sandringham College, Holloway Road Campus
7. authorises the CEO to sign a Community Joint Use Agreement for community access to sporting facilities at Sandringham College, Holloway Road Campus
8. authorises the payment of subsequent contributions towards the netball project as required of Council
9. provides the Sandringham District Netball Association with a License for community use of the indoor and outdoor netball courts subject to the terms of the final CJUA and within the following hours (noting lighting of outdoor courts will be left on for up to 30 minutes after prescribed finish times to allow for pack-up, cleaning, etc):

	DAYS	TIMES
OUTDOOR COURTS	Monday – Friday	4pm – 8.30pm
	School Holidays (Mon-Fri)	9am – 8.30pm
	Saturday	9am – 6pm
	Sunday	9am – 4pm
	Additional Use Day 5 days per calendar year	
	Sunday	8am – 6pm
INDOOR COURTS	Monday – Friday	4pm – 9.30pm
	School Holidays (Mon-Fri)	9am – 9.30pm
	Saturday	9am – 8pm
	Sunday	9am – 8pm

10. reconfirms the conservation status of the Bay Road Heathland Sanctuary and its commitment to protecting and enhancing the biodiversity and ecological value of the Sanctuary
11. subject to the outcomes of the current EPA Audit, commences a master planning process for a new open space at the Wangara Road (Driving Range) site
12. upon commencement of construction of the community sporting facilities at Sandringham College, commences a planning process for the repurposing of the current Thomas Street netball site.

Support Attachments

1. Attachment 1 - Holloway Road community sports - Questions and Answers session ↓
2. Attachment 2 - Bayside Netball Community Engagement Summary ↓
3. Attachment 3 - Holloway Road - Traffic Management Plan ↓
4. Attachment 4 - Sandringham Outdoor Netball Project - Acoustic Report ↓
5. Attachment 5 - Site Context Plan ↓

Considerations and implications of recommendation

Liveable community

Social

Sporting facilities provide positive benefits for young people and adults, particularly females through their participation and engagement in sport and recreation activities. Providing additional, repurposed open space at the Wangara Road site could provide additional opportunities for the community to recreate and improve their health and wellbeing.

Natural Environment

Progressing the development of the proposed netball centre at the College site presents a unique opportunity for Council to consider the repurposing of the six-hectare Wangara Road site as open space.

The development and design of the Holloway Road site are being undertaken with a focus on mitigating any impacts to the Bay Road Heathland and a landscape plan focussing on indigenous planting.

Climate Emergency

Through the development and design of this project a focus is being placed on Environmentally Sustainable Design (ESD) features where possible, discussions around any options for sustainable procurement, a site-specific landscaping plan and consideration of an integrated transport plan for the site.

The proposed netball centre will incorporate a significant solar panel system and associated battery facility making it one of Council's most carbon friendly building developments.

Built Environment

Construction of the proposed Bayside Netball Centre at the Wangara Road site has proven complex, further exacerbated by the site being a previous landfill. The scale of two indoor and nine outdoor courts cannot be underestimated, and detailed design and site investigation has seen significant cost increases with a most recent cost estimate for the proposed netball centre suggesting a total project cost of approximately \$26.9 million.

In contrast the Holloway Road site is a flat unimpeded site, without contamination and is an efficient and cost effective site to build the proposed netball centre.

Customer Service and Community Engagement

Council officers have held several meetings and have ongoing communications with the VSBA and Sandringham College. Future meetings will focus on the drafting and agreement for a Development Agreement and subsequent Community Joint Use Agreement.

Officers have continued to meet and communicate with the Sandringham District Netball Association.

While the project is not subject to a town planning permit application process both the Council and VSBA have communicated with residents on the likely traffic, light spill and noise impacts from such a development.

A comprehensive community engagement process was carried out by Council and is summarised in the first section of this paper and attachment 1 and 2.

Human Rights

The implications of this report have been assessed and are not considered likely to breach or infringe upon, the human rights contained in *the Victorian Charter of Human Rights and Responsibilities Act 2006*.

Governance

Officers involved in the preparation of this report have no conflict of interest.

Legal

To formalise any co-investment in community sporting facilities at the School site, Council has signed a Development Agreement and will be required to sign a subsequent Community Joint Use Agreement. Council would be seeking a 20 plus 10-year term for after school hours access to the proposed netball facilities at the site.

Finance

Council's four-year Capital Works Program includes a budget of \$24.6 million for the construction of the proposed netball centre at the Wangara Road site. An updated cost estimate indicates it would cost \$26.9 million to construct the proposed netball centre at Wangara Road. The estimated cost to construct similar, albeit improved netball facilities at the College site is \$18.05 million representing a saving of \$8.85 million.

Links to Council policy and strategy

Improvement to sport and recreation facilities is supported by several key strategy and policy documents including the Council Plan 2017–21, Bayside 2020 Community Plan and Wellbeing for All Ages and Abilities Strategy 2017–21.

The Bayside Open Space Strategy 2012 recognises that projected population growth will have a significant impact on the demand for open space over the next 20 years.

The development of additional fit-for-purpose sportsgrounds is in line with several Key Principles included in the Bayside 'Active by the Bay' Recreation Strategy (2013–22) including:

1. the provision of recreational opportunities for all
2. providing great places for people to recreate in, and to be socially connected
3. responding to identified recreational needs of the community.

Question and Answer Session – Holloway Road community sports facilities

Alternate sites

1. **Q: Why was this site chosen when it was not even one of the proposed sites for consideration when the old driving range was chosen?**

A: Sandringham College was one of the 10 sites considered as a possible location for netball (the report is available via the Have Your Say Page). At the time, it was considered to be a feasible option for the development of Netball. It was determined that the site might not have been able to provide as larger area of the school that is now able to be utilised. Additionally, the department of Education hadn't prioritised funding at the school for other sporting facilities. Through the combination of that funding being received by the school, that opportunity to further investigate the site was made possible.

2. **Q: If the Wangara Road location has viably been deemed no longer suitable as the preferred location for this development, why have other much more suitable sites (aside from Holloway Road) across Bayside not been reconsidered and examined? If other alternate sites across Bayside have been examined and considered or reconsidered for this development in the last 24 months please provide evidence of which alternate sites were examined and considered or reconsidered and what their comparative status is in respect of all relevant considerations per the development proposal, in relation to the Holloway Road site.**

A: The report providing details of the 10 proposed sites considered as part of the site assessment is available via the Have Your Say page. Broadly speaking, reasons for exclusion include:

Cost to purchase private land

- This was a significant inhibitor to being able to access the site

Long term lease agreements in place (2028)

- Including golf courses

Existing or proposed use of the sites

- Elsternwick Park North and South were considered but excluded due to having further master planning and other uses proposed
- The existing Thomas Street netball courts were deemed unsuitable as the area isn't large enough to hold the facility on a single site
- Thomas Street Reserve was excluded due to significant planning around the accessible regional play space
- Sandringham athletics track was not suitable due to the inability to relocate the existing facility

The challenges faced when identifying suitable sites include finding a large enough site to hold the development and how to best manage traffic and lighting requirements. Having looked at all the sites, Holloway Road in the current format provides a suitable site but work is required to address the impacts of traffic, lighting and space on the surrounding area.

The proposed Wangara Road site was found to be problematic due to its former use as a landfill facility. Further due diligence and the impact and cost to develop Wangara Road outweigh the

Question and Answer Session – Holloway Road community sports facilities

benefits of that site. The current project cost is \$25 million, and the added EPA notice and contamination clean-up costs could see the project exceed this figure.

Centralised facility

- 1. Q: Has the council considered the indoor courts on Holloway Road and the outdoor courts at the Wangarra site?**

A: Netball Victoria with support from Council have been trying to find a single site solution which has driven what sites have been considered. Hybrid models for construction are being considered. This creates difficulties in terms of operation of sport and infrastructure provision such as needing multiple change rooms and public toilets.

- 2. Q: Why is Council advocating an old-fashioned centralised model concentrating netball on one site when Bayside's human population is forecast to increase by 25% in the next 20 years, meaning it could be better to continue to manage multiple sites as in any vibrant democratic organisation?**

A: The preferred netball model provides a centralised location preventing duplication of equipment required to maintain a facility of this type. This model best allows active participation and supports families and communities to use the site.

Future of netball

- 1. Q: If this proposal does not succeed, what is the future for netball in Bayside?**

A: Subject to the outcomes of the environmental impact study, development of the Wangarra Road site will continue to be investigated.

- 2. Q: Why is the council trying to push SDNA into something that doesn't future proof their sport. The findings with the BCC found that in 2017 they needed 2 indoor and 12 outdoor courts with an additional 3 for stage 2 for future growth. This site does not even cover their current needs let alone future where they want to incorporate male and disabled players.**

A: The provision of courts at the College meets the demands of Netball.

CJUA agreement

- 1. Q: How is netball's future secured when it is placed on an education site. How will BCC council ensure access and tenure for netball in the short and long term?**

A: The CJUA that Council proposes to enter with the Department of Education will guarantee Council access for 30 - 40 years. The tenure is still being agreed upon and will also determine hours of use for community and school access. On agreement to the CJUA, Council will enter into a licence agreement with SDNA at the College site.

Question and Answer Session – Holloway Road community sports facilities

Parking

1. Q: We've had a number of questions submitted on how Council will manage the parking on residential streets.

A: As demonstrated in the traffic impact assessment report, to limit the impact to the adjacent residential area, it is recommended that netball centre parking demands are accommodated on 'suitable' non-residential frontages on Wangara Road, George Street and the existing carpark at the Golf Driving Range. Construction of pedestrian crossings from these parking areas would be installed for ease of access to the facility.

Our current plans include 98 car parks on the school site with 48 spaces of overflow parking available along the non-residential section of Wangara Road and George Street on weekday evenings and Sundays. There will be capacity for an expected 102 spaces on Saturdays in the surrounding on street parking.

Implementing parking restrictions in surrounding streets with residential parking permits being available for residents of those areas. Additionally, game management recommendations such as staggering game times to modify the flow of traffic and ease congestion around the streets.

2. Parking permits and visitor permits

Q: We have also received several questions about how the parking permit scheme will work. We've received several queries regarding the proposed parking permit scheme and how that would impact visitor parking. Under the Council's Residential Parking Scheme eligible households can obtain a visitor parking permit (an annual cost is determined by Local Laws Team). There are two parking permit options that residents can apply for; we have uploaded this information to the FAQ page.

A: Option 1

Four free resident parking permits:

- Additional resident parking permits can be purchased for a fee. These permits are valid for 3 years.
- Visitor parking permits are not available.

Option 2

Three free resident parking permits, plus one visitor parking permit for \$81:

- Additional resident parking permits can be purchased for a fee. These permits are valid for 3 years.
- One visitor parking permit per household will be issued. This permit is valid for 3 years from the month they are purchased.

Tradespersons can apply for:

A parking permit for a maximum of 3 weeks at any one time and for a maximum of 3 vehicles, at a fee.

Question and Answer Session – Holloway Road community sports facilities

Parking restrictions

1. Q: Why are there restrictions proposed for evening?

A: To accommodate the current proposed operational times for the netball centre that have the courts used until 10:30pm weeknights and weekends (9:30pm outdoor, 10:30pm indoor).

2. Q: How would I work from home my vehicle is normally parked on the street during the day?

A: Restrictions apply during designated sport times only. Residents would be eligible for the Residential parking permit scheme which would allow them to park on the street during restricted periods.

3. Q: What steps will this council take to ensure residents, hugely impacted by this inappropriate facility, will not be penalised for parking outside their own houses during netball hours?

A: Council's traffic department will conduct occupancy surveys throughout various hours during a 'typical' week to monitor effective implementation of the parking permit scheme. In terms of enforcement, this would need to be discussed with Local Laws.

4. Q: How do residents use 1hr parking outside their houses on Cooke St and Green Parade from Friday 4pm and all weekend. Surely both sides should be permit only parking if this is to proceed?

A: It is proposed that one side of the road will be no standing during restricted times to reduce congestion in the area.

Traffic flow

1. Q: We've received a submission from the Sandringham East School Council Vice President. The author notes that the Traffic Impact Assessment Report was conducted during COVID shutdowns.

They ask:

- Does Council believe the traffic report accurately documents the traffic flow and needs of:
 - Sandringham East Primary School?
 - Sandringham College?
- Does Council believe the traffic report accurately reports on the after school needs of Sandringham East Primary School?
- Does Council believe the traffic report accommodates the existing use of Melbourne International Japanese School that operates at Sandringham East Primary School on Saturdays with up to 180 students?
- Does Council believe the traffic report accommodates the use of Sandringham East Primary School by the Sandringham Bullets Basketball club?

A: Response to questions:

- 1 & 2 - The netball activity occurs on weekday evenings and weekends, when the primary school and secondary school are not operating. The volumes associated with the netball centre were added to the existing conditions volumes to assess traffic impacts. Therefore, any activity associated with the primary school or secondary school would be captured in the existing conditions traffic data.

Question and Answer Session – Holloway Road community sports facilities

- The soccer matches will not occur in the future as the Netball Centre and oval will occupy the space that is currently used for soccer. Community cricket will still take place but there should not be much overlap. The parking demands for the Japanese School would be accommodated in the existing school parking or along Holloway Road (both which are not relied on for the netball centre). These events have been captured in the baseline traffic volume data identified in the report and therefore considered in the traffic impact assessment.
- Any traffic volumes associated with this basketball activity would have been captured within the existing conditions traffic data (and therefore the impact assessment).

2. Q: What are the Council's thoughts to opening up George Street to the traffic on Holloway's Road?

A: Council has no plans to open up the existing dead-end arrangement as part of the works. This road was closed many years ago to prevent through traffic between Bluff and Reserve Roads as part of Local Area Traffic Management measure which will continue to be retained.

3. Q: What formal independent research has Council conducted to show the impact of the proposed Holloway Road netball centre site on traffic congestion

A: Quantum Traffic have undertaken an independent impact report on behalf of Council to assess the current traffic conditions and to determine the future needs to manage the impact of traffic on the residential zone.

4. Q: Is it reasonable to have all the traffic exiting into Wangarra Rd?

A: Modelling indicates that the surrounding street network can accommodate this proposal.

TIA report

1. Q: As traffic is not yet back at full capacity, when do you envisage this additional modelling taking place?

A: This is dependent on when conditions are considered 'typical', this is probably to be guided by Department of Transport, many projects state-wide will have the same constraints.

Amenity

1. Q: What has there not been any amenity assessment undertaken as to the impacts?

A: The following strategies are being considered to mitigate the impact of noise and lighting on residential amenity:

- Complying with EPA noise regulations through volume management of audible systems
- Minimise use of whistles during evening training sessions
- Where possible Council will consider screening through planting to create more of a barrier to the site.
- Use of masts and fittings on lighting system that direct light onto the court surface only, with minimal light spill outside of the playing surface.

Question and Answer Session – Holloway Road community sports facilities

Have your say survey results will bring to light other issues.

2. Q: Why not have all the courts undercover to mitigate the noise and light pollution?

A: The proposal provides the College and Community with a mix of indoor and outdoor sports facilities, flexible use of paved areas and a clear line of site for supervision of students. The proposal provides a more appealing aesthetic and landscaping as opposed to built form. The cost to construct indoor courts would result in a reduction of courts numbers preventing Council from addressing the current demands of the sport. There is consideration around one or two outdoor courts being covered which would also provide an outdoor learning area for school use.

Noise

1. Q: Please provide more information about anticipated noise at the site. What is the estimated number of whistles per match and number of matches per session? How many times will a siren be heard during each session?

A: The use of whistles is subject to the game in progress. Details are still being worked on through discussions with Netball Victoria. Further details will be posted on FAQ page when available.

2. Q: Is the community concern over noise valid? Has an acoustic report been completed? If not is this to be completed

A: An acoustic report was prepared as part of the development of the Wangara Road proposal and note recommendations for a proposed Netball facility. While some of the recommendations are site specific, buffering through planting and behavioural measure are transferrable and will be incorporated into the site design. The proposed location of the stadium will assist to reduce the noise carrying towards Holloway Road. The area close to Sandy Hill apartment complex is where we are, primarily looking at opportunities to have the buffer zone. This proposed location would provide as much space off the boundary as possible. Council is also looking at landscaping, planting, game management and other opportunities to reduce noise.

3. Q: Will the whistle policy that requires umpires not to blow their whistle after each goal or out of bounds be enforced?

A: A whistle report has been provided via the Have Your Say page. Council will continue to consider management of impact from sirens and whistles. As part of consultation process and Have Your Say survey, recommendations will be provided at the February 2021 Council meeting. Council will continue to work with SDA regarding behavioural management opportunities.

4. Q: What formal independent research has Council conducted to show the impact of the proposed Holloway Road netball centre site on noise pollution in the area?

A: No site-specific acoustic report has been undertaken, recommendations provided in the report from the Wangara Road site are being incorporated into the design and game day management.

Question and Answer Session – Holloway Road community sports facilities

5. **Q: Will staggered start times create more noise? one game time slot for the facility will have 5 sirens per round. 3 time slots will have 15 sirens per round**

A: Regardless of how site is managed, there will be a level of noise. Consideration around the design, landscaping and best implementation of game management techniques will be taken to reduce impact of noise.

Vegetation

1. **Q: Can Council guarantee that existing vegetation around the Holloway Road site will be retained, including a 10-metre buffer zone backing on to Bay Road Heathland Sanctuary?**

A: Please refer to the site plan uploaded to Have Your Say for the proposed buffers. There is a strong intent to ensure there is no removal of existing vegetation as part of the project. Council is currently working through the detailed plan that will indicate if this will happen. The 10- metre buffer zone and preservation of Bay Road Heathland Sanctuary is prioritised very highly to ensure minimal impact from development.

2. **Q: How will existing tree roots be protected during construction (particularly at the north-east section of the courts)? Will there be additional fencing between these courts and the buffer zone?**

A: Management of tree protection zones will be the responsibility of VSBA, who are delivering the proposal.

3. **Q: How are you going to stop footballs being kicked into the sanctuary and damaging vegetation?**

A: Behind goal netting can be considered to mitigate this risk and will be referred to the design process.

Funding

1. **Q: Tim Wilson MP's website indicates that "At the peak, we've backed our community and delivered \$4.7 million in federal funds for new indoor courts at the Sandringham Regional Netball Centre." Has this funding actually been provided to the Council? If so, how was this funding spent?**

A: The Federal Government has committed \$4.7 million to deliver two indoor courts and associated amenities for the purpose of Netball. Funding is provided on completion of the project. Council has not received or spent any of these funds so far.

Question and Answer Session – Holloway Road community sports facilities

Budget

1. **Q: Do all the measures recommended fall within the budget allocation? and are the additional measures costed and budgeted for (even as contingencies) or are we supposed to wait for subsequent Council budget cycles and be pitted against all other projects?**

A: Project B is the community sport (Council funded) aspect of the project. Design development is currently underway and will be costed at each milestone. If the development exceeds Council's original budget amount a value management process will be undertaken with the appointed architects. The motion passed by the Council also allows for additional funding available to be spent on traffic and mitigation issues of project. The final budget will be presented to the February 2021 Ordinary Meeting of Council for endorsement.

Operational

1. **Q: What are the hours of operation? Including games and practice.**

A: It is proposed that the facility could operate during the following hours

- Weekdays – 4pm to 9.30pm (outdoor) 4pm to 10.30 pm (indoor)
- Weekend – 8am to 9.30pm (outdoor) 8am to 10.30 pm (indoor)

Difference between indoor and outdoor court usage is due to noise variations with indoor courts being less noisy than outdoor courts.

Community feedback to the proposed hours is currently being sought and worked through.

2. **Q: Are all these courts (inside and outside) going to be multiuse courts and painted for use of different sports as they are supposed to be?**

A: The community courts (9 outdoor) are proposed to be lined marked for Netball only. Ongoing discussions are being held with VSBA and school regarding requirements for court markings. Of the indoor courts, one court could potentially be marked for basketball and another marked for netball use. The outcome will be a balance of netball and broader community requirements.

3. **Q: Will the facilities (outdoor courts and ovals) be accessible by residents?**

A: The site will not be open for use by the general community. Community access would be around organised competition and sport with intent of Wangara Road site being converted to open space are for community use.

Planning permit

- 1) **Q. Is Council seeking to avoid the normal planning permit process by using the State Government exemption? What is meant by Project A and Project B of the concept plan? As they appear independent then why is it not open to Council to become an applicant for planning approval and have the matter properly assessed?**

A: Development of State Government land is exempt from a Town Planning Process. This is not the reason why site is being proposed. Site is more suitable in size and allows partnership with the school. This also allows the Wangara road site to be converted to open space for the community to utilise.

Question and Answer Session – Holloway Road community sports facilities

2) **Q: In a VCAT ruling, dated 17/12/2019, VCAT reference number P1049/2019 and permit application number 5/2018/405/1, a proposal to build an outdoor sporting facility at Firbank in Brighton was rejected because of noise, lighting and traffic implications for its local residents.**

- **why is the impact of this Holloway Road proposal (which is larger, with less parking, and longer hours of use) not being given the same consideration to the local residents of Brighton with a very similar proposal at Firbank?**
- **Why do the terms of use of the proposed Holloway Road facility (outdoor netball until 9.30pm, indoor netball until 10.30pm every night of the week) contravene a VCAT ruling on acceptable terms of use for a similar sporting facility built in a residential area?**

A: There are some important zoning and contextual differences between the site you refer to at Fairbank Grammar, and that currently under consideration at Sandringham Secondary.

The development of a private school site is subject to a Town Planning Process providing residents with an avenue for objection. Development of State Government land is at the discretion of the Education Minister.

The land that accommodates Fairbank Grammar is zoned Residential whereas that which accommodates Sandringham Secondary is zoned Public Use. The purpose of the two zones are very different. Land zoned Residential places a higher emphasis on Residential amenity than any other zone within the Scheme. Whilst amenity is not dismissed in the Public Use Zone, the purpose and core objective of this zone is to utilise such space for community services and facilities, and hence the bar for amenity expectations associated with such function is naturally lower than that of a Residential Zone.

Secondly, the Fairbank proposal involved courts and playing surface that sat significantly above natural ground level, and directly adjacent residential properties. Reading the Order of the VCAT case you refer to, it was ultimately this elevation and sheer proximity to the adjacent properties that led to the application being refused. This current proposal along Holloway Road has a much greater land space to work with, and hence there is a far greater ability to property space buildings, car parking, lighting etc such that the amenity impacts would be more appropriate for this differing setting.

Notwithstanding the above, those factors you mention (noise, lighting and traffic implications) will certainly be given proper consideration in determining the final design scheme.

School site/Open space

1. **Q: How does this proposal in any way meet the community requirement for open green spaces?**

A: Education Department Land is not public open space. Currently the site is being used in that way. Council intent is to provide Wangara Road for this usage.

If the proposal proceeds at the school the Wangara Road site will undergo a master planning process resulting in access to 5 hectares of public open space.

Question and Answer Session – Holloway Road community sports facilities

Wangara Road

- 1. Q: We've had multiple submissions regarding why Council made the decision not to proceed with the Wangara Road site option?**

A: In summary, the cost to construct at Wangara Road is significantly higher than the College site as Wangara Road was a previous landfill site. Development on a former landfill site significantly increases the cost of construction - detailed geotechnical investigations, environment due diligence reports and landfill gas and risk assessment are available via the Have Your Say page and note specific requirements for construction. The potential timeframe to develop the site could be significant due to number of years it could take to have site ready for developing, Holloway Road site is not subject to these complexities

Thomas Street site

- 1. Q: What will happen to the Thomas street courts and car park?**

A: No plans have been considered for the future use at Thomas Street Reserve, however it is likely that additional parking will be considered to support the use of Thomas Street playground and Sandringham Athletic Track.

Concept

- 1. Q: What is the COLA part on the maps?**

A: COLA stands for covered outdoor learning area. a roofed area, generally without walls. This would provide benefits for netball and school use. This has yet to be finalised but is designed to be considered in tender process.

- 2. Q: Why do the maps keep changing?**

A: The site plan has been amended to demonstrate buffer zone will be positioned in between the courts and the Sandy Hill apartments. Plans will continue to be updated as they are developed.

Oval

- 1. Q: What will the oval be used for? Does the traffic report and noise mitigation include the use of this facility?**

A: The sportsground will continue to be used for the purpose of community cricket. This use has been considered as part of the traffic impact study with no change to existing residential impact from this sport.

Question and Answer Session – Holloway Road community sports facilities

Consultation

- 1. Q: If the project moves from 'in principle' to going ahead, how will the council and the school bring all the stakeholders together as a cohesive community?**

A: Council will continue to work with all stakeholders minimise impact on residential amenity. Community engagement process remains open until 23 December 2020. If you would like to speak to myself, Council staff, Councillors, or have group meetings, Council is open to continuing discussions with two-way format.

- 2. Q: How will all stakeholders be assured of a voice?**

A: Residents have the opportunity to speak to Council Officers regarding the project, submit questions for response via the Have Your Say pages and make a submission to the reports presented to Council in December and February regarding the impact of traffic and noise on residential amenity. Residents are not able to influence the type of development on Education department land.

- 3. Q: How does council get to delay the community engagement for so long then rush this through now before Christmas?**

A: The consultation was delayed while the procurement process (architect) was undertaken to provide a site plan for consideration and a traffic impact report prepared for community feedback. The council election period also restricted the level of consultation able to be had at the time.

- 4. Q: Why has the council ignored or not answered several questions from the previous have your say?**

A: The historical project information tab on the Have Your Say page, provides responses to questions raised in relation to the Wangara Road site.

Bayside Netball Centre Stage 1 - Community Engagement Summary



February 2021

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Overview

The purpose of the consultation was to engage with the community regarding the draft Traffic Management Plan, proposed parking restrictions, hours of operation and mitigation strategies associated with noise generated from play.

Due to the confidential nature of the discussions between Council and VSBA, the community first heard of the full proposal on release of the agenda five days prior to the September 2021 meeting. Media releases and social media updates may have alerted some community members of discussions to consider an alternate location for the Netball proposal; however, it is recognised that this would be the minority of affected residents.

Concerns from residents were amplified by the Council election period with restrictions imposed limiting community engagement immediately following the September meeting. Throughout this period the proposal's 'Have your Say' page provided opportunity for feedback while officers responded to written communication from residents in line with the election caretaker period restrictions. The timing was perceived by residents as a deliberate act by Council to circumvent the statutory planning process required at the Wangara site, but exempt at the College site.

Development of State Government land is at the discretion of the Minister for Education and does not seek community feedback on proposed works, with stakeholders outside of the development agreement having no influence in the change process.

While a level of support was demonstrated regarding the construction of sporting facilities, specifically netball facilities within Bayside and improvements to the existing school traffic congestion and parking along Holloway Road, the majority of the immediate abutting residents posed concerns, including:

- why this site located in a residential area has been selected
- approaches for monitoring and enforcing Centre operations
- game times and parking restrictions
- access to reliable research (i.e. traffic, acoustic, and environment protection assessments)
- how actions proposed to mitigate peak car park demands, noise pollution and light spill will work and likely effectiveness, and
- plans for further communications and consultation with the community.

While responses to these questions have been provided and specialists consultants engaged to produce informed reports relating to the site, the community are expressing their distrust in Council and questioning the validity of such reports and instead basing feedback on unsubstantiated commentary from vocal objectors to the proposal and assumptions.

Requests for Council to address the following themes were communicated:

- anticipated negative impacts on resident amenity and quality of life
- proposed operating hours being too long
- proposed on-site car parking provision being inadequate, and
- traffic congestion, car movements and pedestrian safety.

For Council to formalise an approach that meets the needs of the sports community and mitigates the known impacts on residential amenity, consideration to the following is required:

- accelerate planning for additional parking at the Wangara Road site
- decrease the proposed hours of use, particularly Sunday and evening outdoor courts
- measures to reduce noise emission from the proposal
- manage court lighting operation via timers, and
- promote active transport, walking and cycling.

Next Steps

The findings of the community engagement process will be published via the Have Your Say page, along with the revised Traffic Management Plan prior to publishing the agenda for 16 February Ordinary Meeting of Council.

Finalisation of the acoustic consultation report and environmental impact report, for release via the Have Your Say page. Both reports were subject to the finalisation of the schematic design package being finalised (early February).

Officers to respond to any new questions raised as part of the consultation process and prepare a report for consideration of Council.

1 Background

In 2014 the Stadiums Needs Assessment recommended that 8 or 9 outdoor courts with night match floodlighting are required to meet the projected future need of netball in Bayside. This need may be complemented by the inclusion of two indoor courts that would facilitate representative team/squad training and matches and provide flexibility to move some activities indoors during rain and extreme heat events.

Following site investigations, officers deemed the Wangara Road site as the preferred location for the Bayside Netball Centre. Due diligence identified the site as a previous landfill, which presents some obstacles and challenges for the construction of the proposed netball facility. The need for extensive concrete piers and other requirements to build a large scale indoor and outdoor court complex has resulted in significant cost escalations. Despite constant cost management exercises by the project team the current budget for the netball centre at the previous landfill site has escalated to \$26.9 million (February 2021).

As a previous landfill the site is also subject to various elements of the Environmental Protection Authority (EPA), its associated Act and regulations. As such Council has engaged an EPA approved auditor who has commenced work on a 12-month site audit (as approved by the EPA) that will examine possible issues including gas migration and storm water impacts. The audit is currently tailored to address the possible construction of the netball centre and subsequent high intensity use of 3,000 netballers each week. The outcomes of this audit will likely be known in July 2021.

Council continues to work through the Town Planning Permit process and is focussing on the legal response to several objections received during the initial consultation process. It is likely that further built measures will need to be implemented at the site to respond to resident issues such as noise. The Town Planning Permit and EPA audit processes are proving lengthy and causing significant delays to the delivery of this project.

The outcome of the EPA audit and Town Planning Permit process may further increase the already significant cost of this project. In turn these costs will be further increased by construction industry cost escalations brought about by State and Federal Government economic stimulus projects that will see supply and price pressure on specialist trades and materials such as concrete and steel. This cost increase could total several million dollars by the time Council finalises design in response to the various issues identified above and commences construction.

In recent years Council and the College have explored opportunities to develop the Holloway Road site to deliver facilities that address the School's need for additional classrooms and modern sports facilities while providing opportunities for Council to access fit-for-purpose sports infrastructure.

In May 2020 the State Government announced \$10 million funding to complete Stage 1 of the College's masterplan, focusing on sports and music facilities. Soon after Council officers engaged with the School Principal to discuss opportunities for Council co-investment as part of this Stage 1 development.

The Government structure to deliver school projects resulted in officers engaging with representatives of the Victorian Schools Building Authority (VSBA) to formally discuss the various opportunities at the College. Subsequently a proposal was submitted to the VSBA detailing Council's desire to construct two indoor and nine outdoor sports (netball) courts as part of the implementation of Stage 1 of the College's masterplan (noting that a third indoor court is proposed as part of the Schools development).

At the 15 September 2020 Ordinary Meeting of Council, it was resolved that Council provide in-principle support to enter discussions with the VSBA to develop sports facilities (Netball and natural turf sportsground) at the Holloway Road campus.

This consultation focuses specifically on the impacts on nearby residents, including traffic throughout the local area; parking arrangements and restrictions; pedestrian movement; light spill relating to evening gameplay; and noise related to gameplay.

We want to know if the nearby residents and users of the site including the school and communities support the proposed mitigations to project impacts and if they have any unmet requirements for consideration.

The future of the current netball facility site at Thomas Street and previous proposed location at Wangara Road are not included within this project.

2 Definitions and scope

The consultation period focused specifically on the impacts on nearby residents, including:

- traffic throughout the local area
- parking arrangements and restrictions
- pedestrian movement, and
- light spill relating to evening gameplay; and noise related to gameplay.

While the focus lay with affected resident's other stakeholders of this consultation period included:

- The netball community
- Sandringham District Netball Association
- Sandringham College faculty and student body
- Friends of Bayside Heathland Sanctuary
- Victorian School Building Authority
- Netball Victoria

3 Consultation process

From 7 to 23 December 2020, Council conducted a community engagement process to gather community feedback on residential impact of the proposal.

Due to the Victorian Government COVID-19 restrictions, this engagement process was conducted online and submissions were accepted via email and post. The engagement plan for the project considered the project's complexity (what can and cannot be influenced), the level of change/impact, and reputational risks.

The project was assessed as being a high priority project. The following online activities were undertaken:

- Project information and online survey hosted on the online engagement platform *Have Your Say*;
- Promotion of the project using Council communication channels, including social media.
- Mail to just under 2,000 households
- Social media, especially 'sponsored' posts to increase audience
- Digital advertising targeting key demographics
- Council's e-newsletter *This Week in Bayside*
- Email notification to subscribed participants
- Direct emails to key stakeholder groups, and
- Online live stream and recording of project information and response to questions.

The consultation was designed to provide stakeholders with an opportunity to provide input into nine discussions areas:

- Car parking proposed for the School site

- Parking restrictions proposed around the School site
- Managing traffic conditions on Holloway Road
- Monitoring of parking
- Staggering match game times to reduce car parking demands
- Managing pedestrian safety around the school site
- Proposed operating hours for the Centre
- Managing noise impacts from sporting activity, and
- Managing light spill.

The survey also provided an opportunity to provide general feedback to the proposal.

Officers conducted weekly meetings with Sandringham District Netball Association (SDNA) to discuss design development and determine SDNA's usage requirements at the proposed site to inform the Community Joint Use Agreement (CJUA) between Council and the College.

3.1 Glossary

Item	Definition
EPA	Environmental Protection Authority
FoBHS	Friends of Bayside Heathland Sanctuary
NV	Netball Victoria
SDNA	Sandringham District Netball Association
Stakeholders	Refer to stakeholder list above
The College	Sandringham College – Holloway Road
VSBA	Victorian School Building Authority

4 Participant profile

4.1 Have Your Say page

The Have Your Say page was updated following the September Council meeting to reflect the proposal at the College, while still retaining historical data relating to the design development at the Wangara Road. Between 26 September to 23 December 2020, the page generated the following traffic:

Views	Visits	Visitors	Contributions	Contributors	Followers
<u>6,364</u>	<u>3,032</u>	<u>1,841</u>	<u>284</u>	<u>215</u>	<u>138</u>

Views – the cumulative number of times a visitor visits the page;

Visits – the number of end-user sessions associated with a single visitor;

Visitors – the number of unique public or end-user in a site. A visitor is only counted once;

Contributions – the total number of responses of feedback collected;

Contributors – the unique number of visitors who have left feedback; and

Followers – the number of visits who have subscribed to the page using the follow button.

The consultation collected participant data as only *Have Your Say* members were able to participate in the engagement.

The survey collected the participant's connection to Bayside, year of birth and gender data. The paid social media campaign also collected age and gender data.

	Demographic characteristics	Participants (%)
Gender	Male (48%: 2016 Census)	40%
	Female (52%: 2016 Census)	58%
	<i>Not stated</i>	2%
Connection to Bayside – 162 persons		100%
	I am a Bayside City Council ratepayer	6%
	- I live in Bayside	48%
	- I live in Bayside; I am a Bayside City Council ratepayer	24%
Connection to Bayside	- I live in Bayside; I own/operate a business in Bayside	1%
	- I live in Bayside; I own/operate a business in Bayside; - I am a Bayside City Council ratepayer	1%
	- I live in Bayside; I work/study in Bayside	1%
	- I live in Bayside; I work/study in Bayside; I am a Bayside City Council ratepayer	11%
	- I live in Bayside; I work/study in Bayside; - I own/operate a business in Bayside; - I am a Bayside City Council ratepayer	7%
	- I visit Bayside but live outside the area	1%
Suburb of residence	- I work/study in Bayside	1%
	- Sandringham	159 (78%)
	- Hampton North	14 (6%)
	- Beaumaris	14 (5%)
	- Highett	10 (4%)
	- Brighton	7(4%)
	Other suburbs	3 (3%)

A large majority of those who provided feedback are property owners (24.7%). More than half (52%) of those were female and many residing in Sandringham (78%).

4.2 Survey

- 197 respondents provided feedback to the survey online
- 2 hard copy surveys were submitted
- No residents of Aveo Freedom or BlueCross Aged Car Sandringham provided feedback to the proposal

5 Consultation findings

The following section summarises the community sentiment regarding the Bayside Netball Centre as currently proposed for the Sandringham Secondary College site in Holloway Road, Sandringham. Key

themes emerging from the analysis of participant personalised feedback are presented by topic of enquiry. In the interest of participant privacy, individual quotes have not been included within this public document. Where applicable, the number of responses or references to a topic is specified in brackets and italics. Themes apparent in the feedback are generally presented as statements in the tables. The statements represent a blending or synthesis of the verbatim responses.

5.1 Support for actions

Participants generally indicated support for the construction of sporting facilities, specifically netball facilities, to support the high level of participation by females and address current inadequacies within Bayside.

SDNA and the netball community unwavering support the proposal and the benefits it will provide to the sports community.

5.2 Localised Objection

Strong localised objection was received to the proposal, particularly from the residents of Sandy Hill Apartments and Holloway Road residents, who will be directly impacted by noise generated from sport and vehicular movements within the area.

5.3 Bayside Netball Centre

5.3.1 Car parking proposed for the School site

The proposed site plans currently include 98 car parks on the School site. Overflow parking will be available at the existing carpark at the Wangara Road site and on-street parking will be permitted on Wangara Road and the non-residential section of George Street between Bay Road and Wangara Road.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the proposed plans for car parking?” Comments submitted by **170 respondents** have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity <i>(114 comments)</i>	Concerns about resident and visitor on-street parking. Concerns about residents needing parking permits, monitoring and enforcement. Concerns about how it will affect resident amenity and quality of life. Concerns about increased car movements in narrow streets. Concerns about the completeness and reliability of the traffic assessment report. Concerns about on-street parking spilling into neighbouring streets. Concerns about pedestrian safety due to increased traffic movement. Concerns about centre operating hours.
98 on-site car parks is inadequate <i>(65 comments)</i>	Proposed car parking spaces are insufficient for the netball community. Car parking looks insufficient based on the number of courts/ players. 98 car parks plus overflow options will not be enough to cover the people coming to the site plus parking for residents and visitors. Parking plan is inadequate and doesn't consider the parking requirements of nearby residents.
Generally oppose the proposed parking plan, project or site	Strongly oppose the proposed netball centre in what is currently a quiet residential area. Clearly not enough parking, the old driving range is a much better site.

(21 comments)	Relocate to the original site at Wangara Road or alternatively build on another more suitable location recommended in the original assessment.
Comments on the proposed overflow parking at the Wangara Road site (14 comments)	Mixed views: <ul style="list-style-type: none"> – Proposed overflow parking may not be utilised. – Car parking at a different location to the venue will cause chaos. – Walking distance from the overflow parking site is too great for some spectators. – Allow more room for parking on the Wangara Road site.
Comments about proposed on-street parking on Wangara Road and George Street (9 comments)	George Street and Bay Road is extremely dangerous any time, it will become worse with this proposal. Have the overflow in Wangara Road and George Street in commercial areas.
No questions, comments or issues (7 comments)	No questions. No comments. No issues.
Generally supportive or positive feedback (3 comments)	Parking will be more than ample. In favour of the netball centre and will happily walk. More car parking proposed than at the existing Thomas Street centre.
Concerns about consultation process (3 comments)	Lack of due process. Inadequate reporting, due diligence and consultation with residents.
Other (13 comments)	No public transport to this facility, cars will be required. Control and securing of the car park. Provide more car parks or build fewer netball courts. Improve lighting and security along Wangara Road and at the car park. Need a parking area for College staff and students. Street signage directing players/spectators and residents where to park. Have trees near car parks for shade. Limit onsite car parking to certain teams (i.e. home team and officials). Incorporate a 'smart parking system' with signage showing real time car park availability.

A total of **63 participants** posed questions regarding a variety of topics. The questions relating to the car parking proposed for the School site referred to topics including:

- Resident access to on-street parking, parking restrictions and monitoring
- Benefits for the School, School staff access to on-site parking, control and securing of the car park
- Number of car parking spaces at Wangara Road
- How the proposed 98 car spaces were determined and calculated as the traffic report recommends 114 car spaces
- Managing car park availability and when the car park is full
- Viability of more parking further down George Street as an option

5.3.2 Parking restrictions proposed around the School site

The proposal for parking currently includes implementing new parking restrictions in the local residential area. These restrictions will prioritise resident parking and guide Bayside Netball Centre users to the spaces on the School site and along the non-residential sections in Wangara Road and George Street:

- Permit Zone 4pm-9pm Monday to Friday and 8am-5pm Saturday and Sunday one side of the street
- 1 hour parking 4pm-9pm Monday to Friday and 8am-5pm Saturday and Sunday other side of the street
- Existing parking restrictions outside of these times would remain as they are now

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the proposed parking restrictions?” Comments submitted by **154 respondents** have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity (68 comments)	Concerns about access to resident, worker and visitor on-street parking and own property. Concerns about how it will affect resident amenity and quality of life. Concerns about increased car movements in narrow streets. Concerns about potential impact on property values in this area. Concerns about disruption, inconvenience and traffic congestion.
Comments on the proposed resident permit system (45 comments)	All street parking in the vicinity of the Netball Centre to be residential permit only, issue households with an adequate supply of permits. Extend the on-street permit only areas to Holloway Road, all streets off Holloway Road, Balmoral Avenue, Clarke Street, Cooke Street, George Street, Wangara Road and Green Parade. Residents should not have to pay for any sort of parking permit including visitor parking permits. Those with permits are able to park anywhere for any amount of time. Incorporate disabled parking spaces.
Comments on length of on-street parking restrictions (19 comments)	1hr parking restrictions are too short for residents and netball participants, two a 2hr limit may be more reasonable. 1hr limit on Spring Street will greatly affect the baseball participants. 1hr limit on Balmoral Avenue and Cooke Street should be revoked. Provide 5 to minute drop-off/pick-up areas. Consider whether time limits apply to residents with permits. Restrictions to apply game days only.
Generally oppose the proposed restrictions, project or site (16 comments)	This project is not appropriate and should not happen in a residential location. Stop the project, we are against the project.
Extend parking restrictions to other nearby streets (15 comments)	Consider extending parking restrictions to other nearby streets (Bluff Road, Cooke Street, Green Street, side streets across Bay Road, D’Arcy Avenue, Regent Court and Forrest Court), opposite Aveo The George retirement village and the Sandy Hill complex. Coaches/buses should park on the Wangara Road site, with restricted access to Cooke Street and Green Parade.
Proposed parking restrictions are confusing and overly complex (11 comments)	Plan looks overly complex and may require fine-tuning. The colour coded zones are complicated and having different restrictions within the one street is confusing, especially for Centre users unfamiliar with the area.
Parking restrictions will need to be monitored and enforced (7 comments)	Ensure participants do not park on nearby residential streets. Ensure parking officers or someone is monitoring car parking and enforcing parking restrictions on weekdays and weekends.

No questions, comments or issues (7 comments)	No questions. No comments. No issues.
Concerns about consultation process (4 comments)	Lack of due process. Inadequate reporting, due diligence, and consultation with residents.
Generally supportive or positive feedback (2 comments)	It is a good idea and a good plan.

A total of **41 participants** posed questions regarding a variety of topics. The questions relating to the parking restrictions proposed around the School site referred to topics including:

- How permits will be allocated, number per household, arrangements for visitors and whether there will be a cost to residents
- The rationale behind the proposed approach
- How parking will be managed for Regent Court and Forrest Court as there are no proposed parking restrictions
- How the 1hr parking zones work and whether the time limits apply to residents
- How residents are expected to park in Cooke Street and Green Street
- How parking restrictions will be monitored and how many parking officers are being employed to police parking restrictions
- Arrangements for school coaches/buses parking in the street to pick-up or drop-off students
- Budget and mechanisms planned to educate the population about the parking restrictions

5.3.3 Managing traffic conditions on Holloway Road

A Traffic Assessment Report has been prepared and suggests several changes to traffic conditions on Holloway Road to manage the flow of traffic associated with the proposed Bayside Netball Centre:

- Restrict access to Holloway Road by introducing one-way traffic within the carpark, entering via Holloway Road, and exiting via Wangara Road to reduce congestion and traffic volumes.
- ‘No Stopping’ restrictions are recommended along the south side of Holloway Road to maintain two-way traffic flow and allow bus access to the School. Additional ‘No Stopping’ restrictions are recommended on the south side of Wangara Road opposite the eastern on-site carpark access to allow safe bus movement.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the proposed traffic conditions?” Comments submitted by 145 respondents have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions.

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity (65 comments)	Concerns about access to resident, worker and visitor on-street parking and own property. Concerns about how it will affect resident amenity and quality of life. Concerns about increased car movements in narrow streets. Concerns about disruption, inconvenience and traffic congestion. Concerns about the completeness and reliability of the traffic assessment report. Concerns about potential impact on property values in this area.
Concerns about congestion, safety and accidents	Concerns the proposed increased traffic flow will make an already congested area more dangerous.

<i>(52 comments)</i>	Concerns the proposed traffic flow in the car parking area will create a through road and potentially dangerous conditions in the car park.
	Concerns traffic on both roads will increase at all times of the day and pedestrian safety will suffer.
	Concerns about extra congestion around school drop-off and pick-up times and the potential danger for the many young children in the area.
Comments about restricted access to Holloway Street and one-way traffic flow <i>(45 comments)</i>	Holloway Road should be a residential only thoroughfare on weekends. Holloway Road is already congested and not suitable for the current volume of traffic.
	A two way flow of traffic cannot be maintained with "No stopping" on the south side of Holloway Road.
	Holloway Road is a narrow road and two cars cannot pass a parked car, when parked cars are not close to the curb or a driver is parking, traffic cannot move either way.
	People will continue to use the turning circle at the end of Holloway Road.
	Concerns that a one way system won't work and will cause confusion and further congestion in Holloway Road and the car park, some drivers will seek to avoid entering if they have to exit via Wangara Road.
	The traffic flow into and along Holloway Road and exiting Wangara Road needs further investigation.

Concerns about consultation process (5 comments)	Lack of due process. Inadequate reporting, due diligence, and consultation with residents.
Generally supportive or positive feedback (4 comments)	Proposed flow is logical and diverts traffic to avoid congestion. Good suggestion.

A total of **26 participants** posed questions regarding a variety of topics. The questions relating to the managing traffic conditions on Holloway Road and one-way traffic flow referred to topics including:

- Whether school traffic and the movements of 500 students of the Japanese school on Saturday mornings have been included in the traffic report
- Whether the traffic management plan considers Miller Street, the impact on Bay Road, traffic lights being installed at the George Street/Wangara Road and George Street/Bay Road intersections and widening Holloway Road
- How Holloway Road residents will exit their driveways with an increased amount of traffic in a narrow street
- The future projections of traffic flowing along Holloway Road and whether the break between Holloway Road and Wangara Street may need to be removed to ensure continuous traffic flow

5.3.4 Monitoring of parking

The proposal for parking currently suggests Council monitor parking demands in the area following the opening of the Bayside Netball Centre and consider the following changes if required:

- Potential inclusion of additional Permit Zone parking restrictions if parking availability is an issue within the residential streets.
- Potential modifications of the days/times that the restrictions apply.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the continued monitoring of parking?” Comments submitted by **135 respondents** have been synthesised and summarised in the table below:

Response to proposal	Themes
Comments on effectiveness of monitoring system (40 comments)	It is appropriate for Council to monitor car parking as traffic problems are anticipated and people don’t always follow rules. Concerns about how often monitoring will occur and that the only monitoring Council will do is issue fines. Concerns that once the Centre is built, it will be too little too late, and difficult to make changes. Council should commit to carrying out long term (at least 5 years) comprehensive traffic monitoring.
Concerns about anticipated negative impacts on resident amenity (33 comments)	Concerns about access to resident, worker and visitor on-street parking and own property. Concerns about how it will affect resident amenity and quality of life. Concerns about increased car movements in narrow streets. Concerns about disruption, inconvenience, and traffic congestion. Concerns about the completeness and reliability of the traffic assessment report.
Generally oppose the proposed restrictions, project or site location (24 comments)	This project is not suited to a residential area and the Wangara Road site is a more suitable location. Stop the project, we are against the project. The parking restrictions are too much, don’t see how this will help.

Comments about consultation process (16 comments)	Keep communicating and consulting with residents, listen and act on residents' views. Lack of due diligence and consultation with residents.
New suggestions relating to monitoring of parking (8 comments)	All streets off Holloway Road to become a permit zone and if impractical, change the proposed 1hr parking to 15 minutes. Provide residents with a free parking permit for each vehicle registered at the address. SDNA to advocate Wangara Road and require all members/ players to park there. Consult with the residents around SDNA in Thomas Street to understand their issues. Roll out a balanced education and enforcement program. Keep these arrangements under review, permanent parking officers to police the entire area, enforce restrictions and issue fines.
Not necessary if more on-site parking spaces were provided or simplified restrictions (8 comments)	If sufficient on-site car parks were provided, monitoring would not be necessary. Additional permit zones or restrictions wouldn't need to be monitored if the rules surrounding permits are simplified. Don't allow people to park in the residential side streets off Holloway Road.
No questions, comments or issues (8 comments)	No questions. No comments. No issues.
Comments on enforcement being about revenue raising (5 comments)	Council should monitor parking, not only make revenue from issuing fines.
Generally supportive or positive feedback (2 comments)	Yes, this would be a good idea. Will definitely be needed if the Netball Centre goes ahead.

A total of **32 participants** posed questions regarding a variety of topics. The questions relating to the monitoring of parking referred to topics including:

- How often parking will be monitored, who will do the monitoring, for how long and how Council will enforce parking restrictions
- Whether Council will act upon residents' views, concerns and complaints of illegal parking and blocked driveways
- Whether residents will be fined for parking on or partially on nature strips to prevent damage to vehicles
- How parking permits will work and how many will be issued per household
- How often and who will be consulted during this process

5.3.5 Staggering game times to reduce peak car parking demands

A Traffic Assessment Report has been prepared and suggests the staggering of scheduled commencement times of netball matches could reduce peak car parking demands as follows:

- Four netball courts to start at commencement of session.
- Four netball courts to start 15 minutes after commencement of session.
- Four netball courts to start 30 minutes after commencement of session.

Survey respondents were asked "Do you have any further questions/comments you would like to make regarding the proposed staggering of games?" Comments submitted by 153 respondents have

been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
It is not a solution and does not address the main parking issues (60 comments)	This action will be insufficient to positively impact anticipated car parking issues. No amount of staggering of start times will help. This is not a solution and will not address the anticipated traffic and safety concerns in relation to parking.
There will be implementation challenges as players, coaches and supporters are in attendance beyond game time (45 comments)	Coaches often require players to arrive 30 minutes prior to game time to warm up and some will be coaching more than one team. Some players and parents stay after the game or for more than one game and take time to vacate the facilities. Games may run over-time or be delayed due to an injury.
It will not improve traffic conditions and may make car movement and pedestrian safety worse (35 comments)	There will be constant traffic movement for the duration of the opening times. Staggering the games will result in traffic challenges continuing throughout the day. There will still be lots of people coming and going from the area, not sure it will be a safer option for pedestrians.
Concerns about anticipated negative impacts on resident amenity (35 comments)	Concerns about car movements in narrow, quiet residential streets. Concerns about access to on-street parking. Concerns about the completeness and reliability of the traffic assessment report. Concerns about how it will affect resident amenity and quality of life.
Concerns about constant noise and light pollution (34 comments)	Concerns about the constant noise from whistles, PA systems, sirens and shouting in the evenings and on weekends. Concerns about the continual traffic noise. Concerns about light pollution.
Concerns about compliance and enforcement (22 comments)	Concerns about how game times and the scheduling of matches will be monitored and enforced. Concerns about this action being altered or changed in the future and how non-adherence will be addressed. Concerns that it is not possible to regulate the arrival and departure of players.
Generally supportive or positive feedback (15 comments)	It seems to be a sensible and logical approach. Staggering game times appears to be a good idea.
Reduce the number of games and scope of playing hours (11 comments)	Consider resident amenity when deciding starting and finishing times. There should be an overall reduction in the number of matches. Games need to end before 6pm and start after 9am.
Generally oppose the proposed, project or site (9 comments)	Choose a bigger, better site in a less residential area. This project should not happen in this location.
No questions, comments or issues (9 comments)	No questions. No comments. No issues.
Concerns about consultation process (7 comments)	Lack of due process. Need for consultation with residents, SDNA, netball players and Japanese School.

A total of **47 participants** posed questions regarding a variety of topics. The questions relating to the staggering games times to reduce peak car parking demands referred to topics including:

- How the sirens will work for staggered game times
- Other locations and associations where staggered games times have been implemented
- Whether the staggered game times will be formalised into an agreement
- How to ensure adherence to the proposed staggered game time guidelines and penalties that will apply for non-compliance

5.3.6 Managing pedestrian safety around the school site

The proposed site plans currently recommend the following actions and upgrades to improve pedestrian safety in the area:

- Installing raised zebra crossing with kerb extensions on Wangara Road (west side).
- Installing raised zebra crossings on George Street with supporting speed humps to slow cars on approach.
- Reducing the speed along George Street from 60km/h to 50km/h.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the proposed plans for car parking?” Comments submitted by 126 respondents have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to idea	Themes
Concerns about the road conditions, volume and type of traffic will make it unsafe for pedestrians <i>(47 comments)</i>	The existing roads are narrow and not designed for the proposed increase in volume of traffic, which creates a pedestrian safety issue. The overall traffic effects are not being carefully considered. Accidents are more likely when cars are constantly arriving and leaving, particularly when some drivers are in a rush. Congestion leads to driver frustration and is a threat to pedestrian safety.
Generally oppose the proposed, project or site <i>(28 comments)</i>	This project is not appropriate and should not happen in this location. Stop the project, we are against the project.
Concerns about George Street and intersections <i>(27 comments)</i>	Reduce the speed limit on George Street as it is already a dangerous road, is used by many trucks and has speeding traffic. Accidents are already common at the corner of George Street/Wangara Road, consider installing lights. The George Street/Bay Road intersection is already a dangerous intersection, do not direct more traffic there and consider installing traffic lights.
Concerns the proposed actions and upgrades will have little positive impact <i>(17 comments)</i>	Zebra crossings or speed humps are not going to make it safer and will not solve the problem of small children running onto the street. Unsuitable for the heavy trucks using George Street and Wangara Road. Not all children will use the proposed pedestrian crossings.
Concerns about anticipated negative impacts on resident amenity <i>(15 comments)</i>	Concerns about increased traffic and congestion. Concerns about access to on-street parking. Concerns about how it will affect the quality of life for residents. Concerns about the completeness and reliability of the traffic assessment report.

New suggestions for pedestrian safety (13 comments)	Consider pedestrian safety along Holloway Road and in the car park. Consider diverting traffic to Reserve Road as there are traffic lights at the corner of Bay Road. Reduce speed to 20 km/hr on Holloway Road, Cooke Street and Green Parade. Add a pedestrian island at the entry to Cooke Street and Green Parade. Install a Bay Road zebra crossing opposite the heathland. Consider pedestrian safety at major intersections (Bluff/Holloway Roads, George Street/Bay Road). Move the crossings further from the corner, out of the intersection. Add speed humps to Spring Street.
Proposed actions and upgrades are not necessary or may worsen traffic movement and noise (11 comments)	Speed humps and zebra crossings will make drivers more frustrated and increase traffic noise. Speed cushions will not slow traffic down sufficiently. These actions are not necessary, people aren't going to park that far away.
No questions, comments, or issues (8 comments)	No questions. No comments. No issues.
Generally supportive or positive feedback (7 comments)	Sounds good, agree. Crossings are important.
Consider lighting and personal safety (7 comments)	Consider installing clear signage and additional street lighting. Consider lighting and security monitoring to support safe movements to and from vehicles.
Consider cyclists (3 comments)	Consider making provision for cyclists, road cyclists and school children cycling to and from school.
Concerns about consultation process (3 comments)	Lack of due process. Extend the consultation time and consult with the transport industry and local manufacturers/commercial industry.

A total of **23 participants** posed questions regarding a variety of topics. The questions relating to managing pedestrian safety around the school site referred to topics including:

- How trucks and factory workers will handle the speed humps and whether there will be extra noise for residents
- How buses and passengers will access the Centre
- Assessment of the effect of crossings at the intersection of Wangara Road
- Pedestrian safety at other major intersections (Bluff/Holloway Roads, George Street/ Bay Road)
- The recommendation for zebra crossings without flashing lights
- Pedestrian safety along Holloway Road

5.3.7 Proposed operating hours for the Centre

It is currently proposed that the Centre could operate for organised community sport during the following hours*:

- Weekdays: 4pm to 9.30pm (outdoor) 4pm to 10.30pm (indoor).
- Weekends: 8am to 9.30pm (outdoor) 8am to 10.30pm (indoor).

*Any organised community use during school hours will be subject to further negotiation with the relevant stakeholders.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the proposed operating hours?” Comments submitted by 152 respondents have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity (111 comments)	Concerns about constant traffic movement and congestion. Concerns about excessive disruption, noise and light pollution. Concerns about visitor access to on-street parking, 7 days per week. Concerns about how it will affect the quality of life for residents. Inconsiderate and will impact residents’ leisure time and sleep, especially for young families, shift workers and the elderly. Concerns about the safety of children riding bikes around the block. Concerns about potential impact on property values in this area.
Operating hours are too long, starting too early and finishing too late (107 comments)	Proposed hours do not adhere to current EPA requirements. Proposed operating hours seem excessive are unreasonably long for a residential area. Too early and too late, 8am is too early for netball to start on weekends. Any activity after 8.00pm weekdays and 5.30pm weekends is unsatisfactory, especially in the winter months.
Generally oppose the proposed, project or site (19 comments)	This project is not suited to a residential area, an industrial area or the Wangara Road site would be a more suitable location. Stop this project, we object to this project.
No questions, comments or issues (11 comments)	No questions. No comments. No issues.
Generally supportive or positive feedback (2 comments)	Happy for the indoor courts to operate until 10.30pm. This is fair as schools have functions until 9pm and most tennis courts operate until 10.30pm in the Bayside area.

A total of **23 participants** posed questions regarding a variety of topics. The questions relating to the proposed operating hours for the Centre referred to topics including:

- Whether the proposed operating hours comply with EPA regulations
- How adherence with the operating hours will be monitored and whether penalties will be imposed if matches are played beyond the proposed times
- Why the proposed operating hours for the Holloway Road site differ from those proposed for Wangara Road site
- Whether residents have any influence on the timing of the operating hours
- When the community will have access to the netball courts and facilities
- Whether the operating hours apply every day and weekend for the entire year

5.3.8 Managing noise impacts from sporting activity

Prior feedback has indicated the noise that will be generated from sporting activity is a concern for adjacent residents. Sports facilities generate a level of noise from their activities and steps will be taken to mitigate this by complying with EPA noise regulations through volume management of audible systems and restricting use of whistles. The actions proposed to mitigate noise impact include:

- Complying with EPA noise regulations through volume management of audible systems.
- Minimise use of whistles during evening training sessions.

- Where possible landscaping will be included to reduce the impact of noise.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the impact of noise?” Comments submitted by **162 respondents** have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity (87 comments)	Concerns about constant traffic movement and congestion. Concerns about excessive disruption and noise pollution in a residential area. Concerns about potential impact on property values in this area. Concerns it will impact the residents’ leisure time and sleep, especially for young families, students, shift workers and the elderly. Concerns about how it will affect the quality of life for residents.
Concerns about noise impact from whistles and minimising the use of whistles (64 comments)	Noise from high-pitches whistles will travel and be intolerable. Concerns about whether it will be possible to minimise use of whistles in training sessions, matches and practice games, especially on weekends. Concerns there will be constant whistle blowing throughout the games, especially with multiple games being played at once.
Concerns about other sport-related noise impacts (58 comments)	Concerns about how loud noises from sirens and PA speakers will be minimised. Concerns about how noise made by referees, balls bouncing, players and cheering spectators will be minimised and what restrictions will be put in place. Concerns about how to minimise noise from traffic movements, cars arriving and departing and people closing car doors.
Concerns about compliance and enforcement (29 comments)	Concerns that it will not be possible to monitor and enforce the minimal use of whistles at training sessions. Concerns about how noise outputs from audible systems, sirens, games, spectators, and vehicles noise will be monitored. How will residents report issues, how non-adherence will be addressed and who will be fined. Need to strictly enforce appropriate behaviour after matches and when leaving the car park.
Comments about landscaping (26 comments)	Provide more landscaping information and ensure landscaping is done as soon as possible. Provide additional tree foliage and have trees lining the entire facility. Unsure how the landscaping will act as a noise buffer and concerns it will not be effective.
Generally oppose the proposed, project or site (16 comments)	This project is not appropriate and should not happen in this residential location. Stop the project, we are against the project.
Mitigate noise impact by reducing operating hours to be compliant with EPA regulations (14 comments)	Concerns the proposed operating hours are not compliant with Environment Protection (Residential Noise) Regulations 2018. Concerns that noise impact will occur before scheduled game times and that sporting activity may occur beyond suggested EPA times. Concerns that EPA noise levels may not be satisfied.
Concern about impact on birds, wildlife, heathland and dogs (12 comments)	Concerns about the noise impacts on birds, wildlife and the Bay Road Heathland Sanctuary. Concerns about the effects of sporting activity noise on domestic dogs.

No questions, comments or issues (12 comments)	No questions. No comments. No issues.
New suggestions to mitigate noise (10 comments)	Consider acoustic barriers and noise reduction barriers such as screening, fences, green walls, and vegetation. Consider sound-proofing the courts. Consider installing signage asking patrons to respect resident amenity when walking and driving around the centre
Request for access to more information and research (9 comments)	Concerns about lack of access to an acoustic assessment report and detailed independent information on anticipated noise for this site. Consider noise in the Environmental Impact Assessment for Bay Road Heathland Sanctuary. Concerns about the lack of solid evidence that the proposed actions will work. Provide a landscaping plan.
Concerns about consultation process and scope for resident influence (5 comments)	Lack of due process and consideration by Council. Concerns about residents' views not being heard or influential.
Generally supportive or positive feedback (1 comment)	It is good to hear children participating in outdoor physical activity and should be celebrated.

A total of **48 participants** posed questions regarding a variety of topics. The questions relating to managing noise impacts from sporting activity referred to topics including:

- How the use of whistles will be minimised at training sessions and matches, and the number of whistles per match and matches per session
- What is being proposed for landscaping, where it will be located and how it will mitigate noise impact
- The strategies that will be taken to restrict and monitor sport-associated noises such as sirens, PA systems and cheering spectators
- Whether an acoustic assessment and an environment protection assessment will be prepared for the reserve
- How noise impact on animals in the local area including the heathland sanctuary will be addressed
- How residents can raise complaints and whether noise-related fines will be issued

5.3.9 Managing light spill

Prior feedback has indicated that light spill is a concern for adjacent residents. The height and specific locations of lights will be determined during the design process and will be subject to court layout and meeting relevant Australian standards. It is proposed:

- Court lighting will operate between 5pm and 9.30pm from Monday to Friday and will supplement light from 5pm to 9.30pm on weekends.
- Modern court lighting systems, globes and reflectors will be designed to direct light to the court surface only, with minimal light spill and glare outside of this area.
- The effect of the directional lighting will create a dome-like effect over the court and the light spill will be less than the glare from a mobile phone.
- A standard streetlight will generate more spill and have greater impact on residential amenity than court lighting.

Survey respondents were asked “Do you have any further questions/comments you would like to make regarding the impact of light spill?” Comments submitted by 131 respondents have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions:

Response to proposal	Themes
Concerns about anticipated negative impacts on resident amenity (61 comments)	Concerns about how the light pollution will affect the quality of life for residents. Concerns about the excessive light spill in a residential area. Concerns about potential impact on property values in this area.
Concerns about light spill being under-estimated (32 comments)	Concerns that the impact of light spill has been under-estimated, due to exterior lighting and outdoor court light reflections. Concerns the light spill will be inappropriate even if lighting satisfies Australian standards.
Lights will be required and concerns that actions will not mitigate light spill (18 comments)	Lighting will be required for the courts to operate, personal safety and safe movements around the Centre. Concerns about the proposed actions will not mitigate light spill.
No questions, comments or issues (18 comments)	No questions. No comments. No issues.
Generally oppose the proposed, project or site (16 comments)	This project involves a loss of open space and is not appropriate for a residential area. The Wangara Road site is a more suitable location. Stop the project, we are against the project.
Concern about impact on birds, wildlife and heathland (14 comments)	Concerns about the light spill impacting birds, wildlife, flora, fauna, and the Bay Road Heathland Sanctuary.
Mitigate light spill by reducing non-daytime operating hours (10 comments)	It is not acceptable to have outdoor courts lit until 9.30pm, finish operations by 8pm with all lights off by 8.30 pm. Concerns that light spill will extend beyond approved finishing times, until the facility is vacated.
Request for access to more information and research (10 comments)	Consider light spill in the Environmental Impact Assessment for Bay Road Heathland Sanctuary. Concerns about the lack of solid evidence on the full extent of light pollution and that the proposed actions will work. Request reports prepared for the Wangara Road site to be repeated for the proposed site. Request for a review of complaints by residents living nearby other netball centres.
New suggestions relating to light spill (7 comments)	Facility lighting to be solar powered or powered by renewable energy. Incorporate tree foliage, an appealing or natural barrier/ wall and thick landscaping to reduce light spill. Make all courts indoor or cover the courts with a roof.
Need for further consultation and concerns about the consultation process (4 comments)	Request to further consult with, and listen to, affected and neighbouring residents. Concerns about lack of due process and consideration by Council.
Generally supportive or positive feedback	The lights are not generally of concern.

(1 comment)

A total of **19 participants** posed questions regarding a variety of topics. The questions relating to managing light spill referred to topics including:

- When an environment protection assessment and environmental impact study will be prepared for the reserve
- How light spill will impact on wildlife, particularly nocturnal animals, in the local area including the heathland sanctuary and how this will be addressed
- The extent to which light may shine upwards and into neighbouring residences, and strategies that will be taken to rectify unexpected light spill
- Times that the Centre, netball court and car park lighting will be turned off
- Whether some courts need to be positioned outdoors
- Other light mitigation options that may be possible and implemented
- Responsibility for paying lighting bills.

5.3.10 Other comments

Survey respondents were asked “Do you have any other comments?” Comments submitted by 169 respondents have been synthesised and summarised in the table below along with relevant feedback from the individual email submissions.

Only comments relating to other or new topics are reported. Responses reflecting the sentiment previously presented are not reported here:

Response to idea	Themes
New ideas for other potential sites and ways to create netball facilities for Bayside <i>(9 comments)</i>	Build a sporting precinct in the old Elsternwick golf club land (corner of Glenhuntly Road and Nepean Highway) Where space is in limited supply, disperse netball facilities across at least two sites Retain or refurbish all or some of the Thomas Street courts and install fewer courts at Sandringham Secondary College to spread the impact on local residents and fauna. Build a few courts at the very East end of the school grounds and fix the Wangara Road site. Relocate the baseball complex in Tulip Street and place the Netball Centre on this site. Build an athletics track facility at Sandringham Secondary College and then expand the Thomas Street netball facility on to the existing Athletics Track site. Build only netball courts, no cafes, club rooms or showers.
Comments on future consultation <i>(4 comments)</i>	Conduct a public meeting so everyone to be heard. Provide a letterbox drop of the entire suburb. Consult with households on the other side of Bluff Road from Holloway Road including Victoria Street, Medhurst Street and Rose Street as they will be impacted. Residents to have a say on the implementation of the research and design process of this project.
Concerns about loss of green/open space <i>(3 comments)</i>	Save the oval at Sandringham Secondary College for green space. Retain open grassy areas and precious green space at the school for the community.
Other <i>(3 comments)</i>	The water table on this land is very low, with multiple streams under the surface.

Council needs to take action to improve facilities for the female sporting population.

Challenges are anticipated managing the varying requirements of the school, Department of Education and the Netball Association.

A total of **55 participants** posed questions regarding a variety of topics. The questions referred to new topics including:

- Why this is being rushed and the decision on the Holloway site cannot be delayed pending technical reports and assessments (amenity impact assessment, sustainability report; environmental assessment; vegetation assessment, traffic assessment)
- How covering the green space with asphalt courts fits with Council's environmental stance
- Looking to the future, where netball will expand to if this precinct becomes too small
- Whether there will be access to the Netball Centre from Bay Road
- Why more detailed information has not been provided
- Why Council rejected the proposal at Firbank Grammar School on planning grounds
- Why Council would not want to upgrade or refurbish the Thomas Street facility, or incorporate it within this project to have fewer courts at Sandringham Secondary College
- What other locations that have been reviewed and why this proposal is not being built at the original Wangara Site, funds have already been invested
- Why significant ratepayer funding is being invested into a development that will be used by a minority of residents and is being constructed on non-Council land
- Why this facility is being built at Sandringham Secondary College when there is no College netball team
- Timelines for the project
- Whether any trees on the school site to the southern boundary of the conservation zone will be removed
- What further communications and consultation is planned a series of consultation for those directly affected by this proposal (i.e. letterbox-drop, meetings, forums with local residents, sporting clubs and organisations), in line with Council's Community Engagement Policy
- Whether Council will extend the consultation period until at least the end of January to allow for genuine consultation including public meetings which are now allowed under COVID restrictions
- Plans for the cricket clubs who currently play matches on the site
- Whether "organised community sport" refers to the sport of netball only

5.3.11 Discussion on social media

The discussion on the Council Facebook page largely related to concerns about the proposed location and impact on residential amenity. There were 35 Facebook user actions. A total of 16 (or 45.7% of) actions were not analysed as they were deemed unusable, duplicates or edits of a post or posts made by Council officers.

The sentiment in the remaining 19 (or 54.3% of) actions comprised:

- Holloway Road is inappropriate and the wrong location for the Netball Centre (7 or 36.8%)
- Concerns about impact on resident amenity (5 or 26.3%)
- Concerns about loss of green space (4 or 21.1%)
- Concerns about increased traffic and insufficient parking (4 or 21.1%)

6 Project evaluation

In terms of stakeholder reach, it was proposed that at least 100 contributions would be made via the online engagement platform *Have Your Say* (achieved – 197 contributions).

The conversion outcomes for visits to the *Have Your Say* project page are shown below:

Engagement Conversations

Information regarding how well your engagement websites converted Visitors to perform defined key actions.





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Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway
Road, Sandringham

Proposed Netball Courts

5/02/2021



Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



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Bayside Netball Centre – 11 Holloway Road, Sandringham

Proposed Netball Courts

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Executive Summary

Having visited the site, undertaken a car parking inventory and undertaken a detailed traffic engineering assessment the following conclusions are reached in relation to the proposed 12 court Bayside Netball Centre development (11 Holloway Road, Sandringham):

Car Parking Provision

1. The proposed netball centre is located on state government secondary school land and therefore the requirements of the Bayside Planning Scheme do not apply. In any event, the proposed use is innominate under Clause 52.06-5 of the Planning Scheme and accordingly, car parking would need to be provided to the satisfaction of the Responsible Authority.
2. On-site parking for the netball centre should be maximised and it is recommended that the on-site carpark is expanded to provide for approximately 114 car parking spaces.
3. The scheduling of netball matches should include a 'stagger' between match commencement times to reduce peak car parking demands as follows (based on 45 minute session times):
 - a. 4 Netball courts to start at commencement of session.
 - b. 4 Netball courts to start 15 mins after commencement of session.
 - c. 4 Netball courts to start 30 mins after commencement of session.
4. The peak parking demands expected with the inclusion of the above stagger times are as follows:
 - a. Saturday/Sunday (Competition):
 - i. 'Likely' Parking Demand - 216 spaces
 - ii. 'Sensitivity Test' Parking Demand – 288 Spaces
 - b. Weekday evening (Competition / Training):
 - i. 'Likely' Parking Demand - 162 spaces
 - ii. 'Sensitivity Test' Parking Demand – 216 Spaces
5. Based on the provision of 114 spaces on-site, an overflow parking demand of 48-102 spaces on weekday evenings and 102-174 spaces on Saturdays/Sundays is expected in the surrounding public parking resources.
6. To limit the impact to the adjacent residential area, it is recommended that netball centre parking demands are accommodated within 'suitable' non-residential frontages on Wangara Road, George Street and the existing carpark at the former Golf Driving Range.
7. These public parking spaces have a capacity of 151 spaces, with existing availability of 107-144 spaces. On this basis, there is sufficient capacity within the 'suitable' parking spaces to accommodate the 'likely' and weeknight 'sensitivity test' overflow demands associated with the netball centre.
8. However, the weekend 'sensitivity test' scenario would result in parking extending further into Wangara Road, George Street, Brixton Street and potentially Talinga Road. This would result in long walking distances for netball patrons. It is recommended that Council monitor the extent of overflow parking and if parking extends as predicted for the 'sensitivity test' scenario, consider the provision of additional parking on the former golf driving range site (closer proximity to the netball centre).

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9. To ensure vehicles associated with the netball centre utilise the 'suitable' parking spaces it is recommended that the following parking restrictions are installed in the local residential areas:
 - a. 'Permit Zone 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' one side
 - b. '1P 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' other side
 - c. Existing restrictions outside of these times would be retained
10. Council should monitor on-street parking demands in the area following the opening of the Netball Centre as consider the following amendments if required:
 - a. Potential inclusion of additional Permit Zone parking restrictions if parking availability is an issue within the residential streets.
 - b. Potential modifications of the days/times that the restrictions apply.
11. 'No Stopping' restrictions are recommended along the south side of Holloway Road to maintain two-way traffic flow and allow bus access. Additional 'No Stopping' restrictions are recommended on the south side of Wangara Road opposite the on-site carpark access to facilitate bus egress.

Car Parking Design

12. A concept plan has been prepared for a recommended on-site carparking arrangement catering for 114 spaces as follows:
 - a. One-way configuration (eastbound) with entry via Holloway Road and exit via Wangara Road.
 - b. An access control gate is included on the carpark access points to prevent access outside of the operating hours of the netball centre. It is recommended that Council monitor traffic volumes post development and if 'through' traffic utilising the carpark from Holloway Road to Wangara Road is identified, consider additional traffic management in the carpark and/or on Holloway Road / Wangara Road.
 - c. The entry via Holloway Road designed as left in only to encourage access via Bluff Road and Holloway Road.
 - d. 60 degree parking on both sides of the aisle to reinforce the one-way restriction.
 - e. A shared bus / patron pick-up / drop-off zone in a parallel arrangement adjacent to the site entry.
 - f. Traffic management in the form of road humps at regular intervals.
 - g. A footpath along the northern boundary of the carpark connecting the Holloway Road / Wangara Road footpath with the proposed centre entry.
13. A total of 3 accessible car spaces are provided for the development as required by the NCC (BCA).
14. A signage and linemarking plan should be prepared to formalise the carpark design.

Bicycle Parking

15. Whilst the proposal is not subject to the requirements of the Bayside Planning Scheme, Clause 52.34 has been utilised as a guide for the provision of bicycle parking.
16. The proposed netball centre is expected to generate a total demand for 36 bicycle parking spaces including 28 visitor spaces and 8 staff spaces.
17. It is recommended that visitor spaces are provided via rails in the vicinity of the centre entry and staff spaces are provided internally within a service area for the proposed stadium.

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Pedestrian Accessibility

18. A portion of patrons will park within the public parking resources in the surrounding road network and walk to the proposed netball centre.
19. This results in pedestrian demands, particularly towards the east of the centre crossing George Street and Wangara Road.
20. During peak Saturday activity, pedestrian movements between 56-264 pedestrians per hour are estimated on the north, south and west legs of the George Street / Wangara Road intersection.
21. These estimated pedestrian movements in combination with the traffic volumes meet the warrants for the provision of zebra crossings (without flashing lights).
22. On this basis, the following pedestrian upgrades are recommended:
 - a. Raised zebra crossing with kerb extensions on the west Wangara Road leg.
 - b. Raised zebra crossings without kerb extensions on the north and south George Street legs.
 - c. Reduction of the speed zoning along George Street from 60km/h to 50km/h
 - d. Road humps (speed cushions to accommodate truck movements) on the north and south approaches of George Street to further reinforce a slow speed environment in the vicinity of the crossings.
23. We note that the pedestrian volumes are based on a number of assumption and therefore the warrants for the implementation of zebra crossings cannot be categorically demonstrated to VicRoads at this point in time. On this basis, a practical approach to the implementation of the above treatments is to install the platforms initially without the zebra crossing and undertake pedestrian counts once the netball centre is operating, to confirm the requirements for zebra crossings.

Traffic Impacts

24. The use is assessed as generating peak hour traffic volumes as follows:
 - a. Saturday/Sunday (Competition):
 - i. 'Likely' Peak Hour Traffic Volume – 432 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 576 vehicles per hour
 - b. Weekday PM Peak (Competition / Training):
 - i. 'Likely' Peak Hour Traffic Volume – 324 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 432 vehicles per hour
25. The distribution of traffic to/from the proposed netball courts will occur with all entry movements via Holloway Road and all exit movements via Wangara Road due to the proposed one-way arrangement within the on-site carpark.
26. An assessment of daily traffic volumes has identified the following:
 - a. Whilst Holloway Road is classified as a local road, its land use and traffic flow arrangements are best classified between a local road (up to 3,000vpd) and a collector road (up to 7,000vpd).
 - b. Analysis of the of likely daily volumes associated with the proposed weekday operating hour (4pm-9:30/10:30pm) and weekend operating hours (8am-9:30/10:30pm) indicate the following daily traffic volumes:

Holloway Road:

 - i. Saturday – 3,655-4,668vpd
 - ii. Weekday – 1,986-2,667vpd

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**Wangara Road:**

i. Saturday – 3,239-4,202vpd

ii. Weekday – 1,321-1,611vpd

c. These daily volumes generally fall within the adopted environmental capacities for the surrounding road network.

d. An assessment of reduced weekend operating hours has been undertaken for 8am-6:30pm. The daily traffic volumes expected under this scenario are as follows:

Holloway Road:

i. Saturday – 2,926-3,817vpd

Wangara Road:

iii. Saturday – 2,510-3,230vpd

e. It is recommended to adopt the reduced weekend operating hours (8am-6:30pm) to reduce the daily traffic volumes on Holloway Road and Wangara Road.

27. The level of traffic generated based on the distribution assessment can be accommodated by the surrounding road network without causing an unreasonable impact on safety or operational efficiencies within the precinct.

28. The SIDRA intersection analysis confirms that the anticipated traffic generated by the Netball facility can be accommodated by the surrounding road network, without significant changes from current delays incurred and vehicle queue lengths that occur.

29. The intersection of Bay Road / Reserve Road operates over capacity in the existing conditions, with existing deficiencies. The traffic volumes generated by the netball centre through this intersection are relatively minor. It is recommended that Council liaise with VicRoads (DOT) to:

a. Review cycle and phase times based on most recent traffic volume data.

b. Potential physical changes to the intersection including dedicated right-turn lanes, left turn slip lanes etc.

c. Turn bans or two right-turn lanes from Reserve Road into Bay Road.

30. The intersection of Bluff Road / Holloway Road is expected to cater for the majority of the 'entry' movements towards the proposed netball centre. Whilst the SIDRA modelling suggests that the intersection will perform under acceptable conditions, it is noted that the traffic volume data was based on a number of assumptions due to COVID-19. It is recommended that Council undertakes additional modelling post COVID-19 when existing turning movements can be collected, to confirm the SIDRA results from this assessment.

Service Vehicle Access

31. The layout of the carpark has been designed to accommodate busses up to 14.5m long.

32. Emergency service vehicles can manoeuvre through the site, as required, given that they are smaller than the bus design vehicle.

33. Waste collection can occur on-site for vehicles up to 12.5m (HRV) in length which is satisfactory from a traffic engineering perspective. A WMP should be prepared to formalise waste collection arrangements.

34. All loading activities will be accommodated on-site.

Summary

Having undertaken all tasks necessary to adequately assess the traffic engineering impacts of the 12 Proposed Netball Courts at Bayside Netball Centre, we are satisfied that the proposed development is satisfactory.

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There are no reasons why the proposed development should not proceed, subject to the recommendations in this report.

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1 Introduction

The following Traffic Impact Assessment Report, reviews the critical matters pertaining to traffic engineering associated with the proposed Bayside Netball Centre at 11 Holloway Road, Sandringham.

The proposed Netball Centre is proposed to be located on the Sandringham Secondary College site, towards the eastern end.

This assessment, where appropriate has had regard to the previous assessments undertaken for the proposed site in Wangara Road (Driving Range site).

2 Proposal

The proposal is for the development of new netball courts, co-located on the existing Sandringham Secondary College site at 11 Holloway Road, Sandringham.

The netball courts are proposed on the eastern portion of the site, in the position of the existing western sporting oval. The existing on-site staff carpark at the school is proposed to be removed as part of the development, with school staff to utilise the proposed netball centre carpark during school hours.

Table 1 outlines the key attributes of the development from a traffic engineering perspective, based on the preliminary concept plans.

Table 1: Proposed Development Numbers

Attribute	Proposed
Land Use	
Netball Courts	3 indoor & 9 outdoor netball courts (12 courts)
Car Parking Provision	
Netball	98 car parking spaces, inclusive of 3 disabled spaces
Vehicle & Pedestrian Access	
Vehicle Access	<ul style="list-style-type: none"> 'Entry' crossover located on Holloway Road opposite Cooke Street 'Exit' crossover located at the existing court bowl termination of Holloway Road
Pedestrian Access	No specific pedestrian facilities are identified on the preliminary layout plans, however, all pedestrian access would be via Holloway Road.
Proposed Operational Characteristics	
Netball	7 players per team on the court (i.e. 14 players per court) 2 umpires per court Game times typically 40mins-1 hour depending on age/level.
Usage Periods	Saturdays / Sundays – Formal Competition: <ul style="list-style-type: none"> Outdoor Courts - 8am-9:30pm Indoor Courts – 8am-10:30pm Weekday evenings – Training / Formal Competition: <ul style="list-style-type: none"> Outdoor Courts – 4pm-9:30pm

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 Bayside Netball Centre – 11 Holloway Road, Sandringham



Attribute	Proposed
	<ul style="list-style-type: none"> Indoor Courts – 8am-10:30pm Weekdays – Sandringham Secondary College
Car Parking Restrictions	3 x disabled spaces Parallel drop-off/pick-up spaces adjacent to the proposed stadium entry.

The courts will be used for organised competitions on Saturdays/Sundays and formal training / competition on weeknights.

Outside of these periods the courts will be utilised by Sandringham Secondary College or other school groups during the school day.

3 Existing Conditions

3.1 Subject Site

The proposed development site is located on the Sandringham Secondary College site at 11 Holloway Road, Sandringham.

Table 2 outlines the key existing features of the development site.

Table 2: Existing Features of Subject Site

Site Feature	Detail
Municipality	
Municipality	Bayside City Council
Existing Use	
Subject Site	Sandringham Secondary College – Sporting Ovals
Zoning & Overlays	
Zoning	Public Use Zone - Education (PUZ2)
Overlays	Design & Development Overlay (DDO2) Development Contributions Plan Overlay (DCPO1) Special Building Overlay (SBO) Environmental Audit Overlay (EAO) Heritage Overlay (HO519)
PPTN Area	Yes
On-Street Car Parking	
Site Frontage	Holloway Road – approximately 47 spaces
Nearby Area	Typically unrestricted with sections/areas of No Stopping to facilitate vehicle flow at school pick up / drop off times.
Nearby Land Use	
Within 500m	Sandringham East Primary School – immediately west Commercial – to the north and east Residential – to the south

The site is currently utilised for sporting ovals associated with Sandringham Secondary College.

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



An aerial photograph and location map are provided at Figure 1 to Figure 2, respectively.



Figure 1: Aerial Photograph (source: www.nearmap.com)

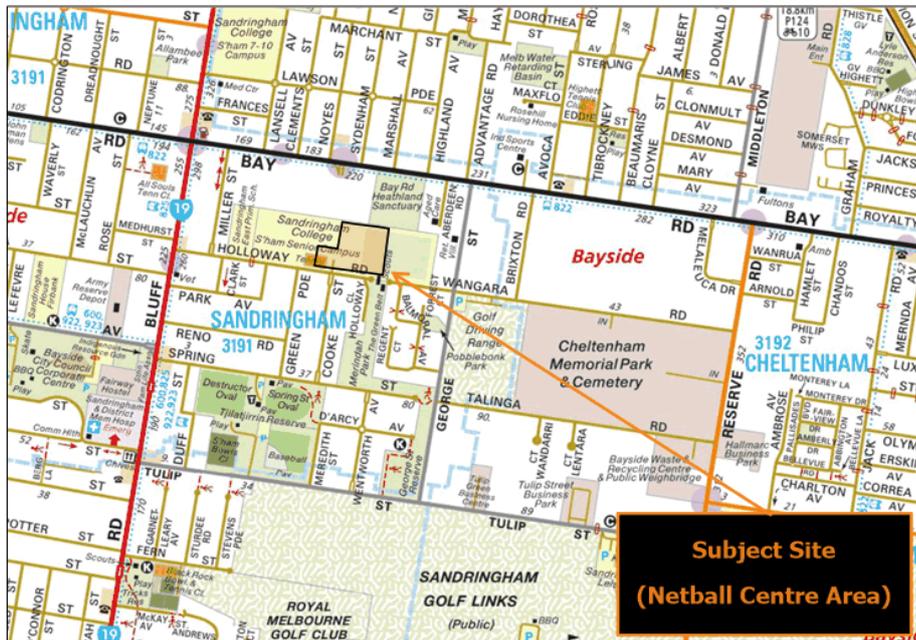


Figure 2: Location Map (Source: www.melway.com.au)

Traffic Impact Assessment Report
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3.2 Road Network

The following table outlines the key characteristics of the surrounding road network adjacent to the site.

Table 3: Adjacent Road Attributes

Attribute	Holloway Road	Wangara Road
Alignment	East-West	East-West
Extends Between	Bluff Road & East of Holloway Close	Reserve Road & West of Balmoral Avenue
Road Authority	Bayside City Council	
Carriageway Width	7.1m – allows for parking both sides and a single lane of traffic or parking 1 side and two-way unobstructed traffic flow	10m – allows for kerbside parking on both sides and two-way unobstructed traffic flow
Classification ⁽¹⁾	Local Road	Local Road
Clause 56.06-8 Classification	Access Street – Level 2	Connector Street – Level 2
Environmental Capacity	2,000-3,000 vpd	3,000-7,000 vpd
Footpaths	Both Sides	Both Sides
Speed Limit	40km/h adjacent to school	Default 50km/h
Parking Restrictions	Short term & No Stopping - School Times only	Unrestricted & No Stopping

Note 1: As per the Bayside Road Register (Version 1.4 dated December, 2009)

Photographs of the surrounding road network are provided from Figure 7 to Figure 8 respectively.



Figure 3: Holloway Road at Cooke Street (view east)



Figure 4: Holloway Road at Cooke Street (view west)

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



Figure 5: Holloway Road at End (view west)



Figure 6: Shared Path Btw Holloway Road and Wangara Road (view east)



Figure 7: Shared Path Btw Holloway Road and Wangara Road (view east)



Figure 8: Wangara Road at End (view east)

3.3 Existing Traffic Volumes

The recent COVID-19 pandemic has resulted in significant changes to travel patterns across metropolitan Melbourne.

At the time of this assessment, Melbourne was subject to Stage 4 lockdown restrictions, which limited movement to within 5km of homes and only permitted on premises employment for 'permitted workers'.

Under these restrictions, travel patterns in the local area would be significantly different to 'typical' conditions and therefore the collection of traffic data would be of no benefit to the study. On this basis, traffic volume information has been collated for the area surrounding the subject based on Council and VicRoads historical information prior to any impacts associated with COVID-19.

3.3.1 Holloway Road

Council has previously collected traffic count information for Holloway Road in March 2017, at the following locations:

- Between Bluff Road and Miller Street
- Between Park Avenue and Green Parade

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



The surveys were undertaken utilising automatic tube counts, which record volume and speed data for 24 hours / day across a 7 day period.

A summary of the key traffic volume information is presented in Table 4 below.

Table 4: Holloway Road – Traffic Volumes (March 2017)

Measure		Eastbound	Westbound	Combined
Between Bluff Road and Miller Street				
Daily Volume	Weekday Average	660	991	1,651
	Saturday	515	782	1,297
	Sunday	Tube Count Fault		
Peak Hour	Weekday Average AM	133 (8-9am)	159 (8-9am)	292 (8-9am)
	Weekday Average PM	74 (3-4pm)	121 (3-4pm)	195 (3-4pm)
	Saturday AM	76 (9-10am)	91 (9-10am)	167 (9-10am)
	Saturday PM	62 (2-3pm)	87 (2-3pm)	149 (2-3pm)
	Sunday AM	Tube Count Fault		
	Sunday PM	Tube Count Fault		
	Between Park Avenue and Miller Street			
Daily Volume	Weekday Average	598	517	1,115
	Saturday	403	363	766
	Sunday	293	284	577
Peak Hour	Weekday AM	123 (8-9am)	74 (8-9am)	196 (8-9am)
	Weekday PM	81 (3-4pm)	60 (3-4pm)	141 (3-4pm)
	Saturday AM	42 (9-10am)	40 (11-12noon)	77 (9-10am)
	Saturday PM	37 (2-3pm)	33 (2-3pm)	70 (2-3pm)
	Sunday AM	28 (9-10am)	31 (11-12noon)	48 (11-12noon)
	Sunday PM	29 (5-6pm)	27 (5-6pm)	56 (5-6pm)

A full copy of the traffic count information is provided in Appendix A.

It is noted that these surveys include the contribution associated with any existing uses in the study area including Sandringham Secondary College and the Japanese School held on weekends.

3.3.2 Bluff Road

VicRoads provides historical traffic volume information for the arterial road network via the 'Traffic Profile Viewer' platform.

For the subject length of Bluff Road between Bay Road and Balcombe Road, traffic volume information is only available for the northbound direction. A summary of the Bluff Road traffic provide for northbound vehicles is provided in Figure 9 below.

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham

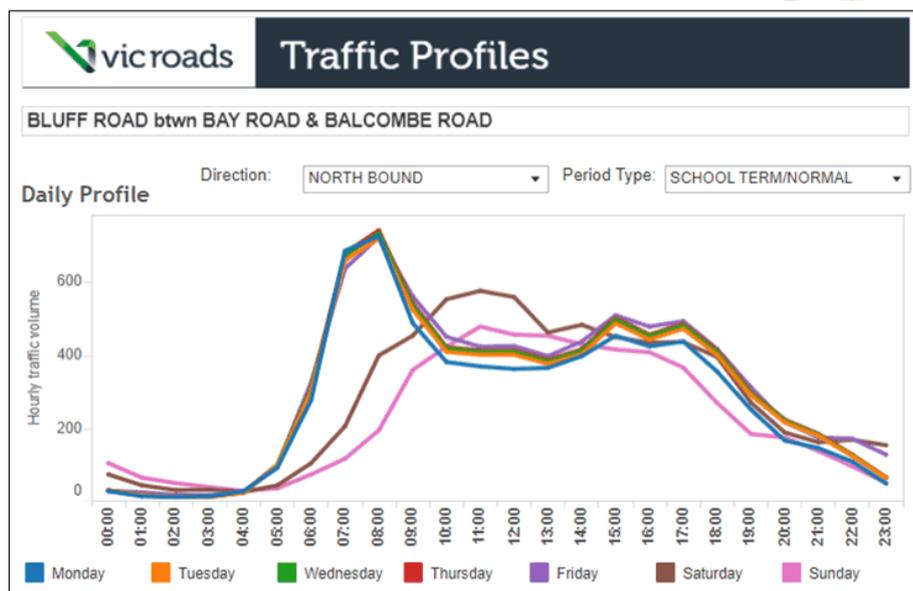


Figure 9: Bluff Road – Bay Road to Balcombe Road (Northbound)

VicRoads also has basic historical volume data for the arterial road network available via the DOT Open Data platform. This database indicates that Bluff Road has a two way AADT of 13,000 vehicle per day in the vicinity of Holloway Road.

Bluff Road / Holloway Road

Due to the current COVID-19 pandemic, representative turning movement count data at Bluff Road / Holloway Road is not able to be collected.

Therefore, for the purposes of this assessment, we have estimated indicative peak turning movements at the intersection of Bluff Road and Holloway Road. The volumes have been developed for the Saturday peak and the weekday PM commuter peak, which coincide with the peak operation of the proposed netball centre. Whilst it is noted that traffic volumes on Holloway Road typically peak between 3pm-4pm (school peak), the proposed netball centre will not be operating at a high level during these times (school activity only).

The key assumptions adopted to develop the data-set are follows:

- Bluff Road northbound volumes from Figure 9 above (peak between 11am-12noon on Saturday and between 5pm-6pm on a weekday evening).
- For the Saturday data set, Bluff Road southbound volumes assumed to be equal to the northbound volumes (Saturdays typically have more equal directions splits than weekday commuter peak periods).
- For the weekday PM peak, Bluff Road southbound volumes are assumed to approximate the northbound AM peak volumes, which assumes 'tidal' flow on the arterial road network.
- Holloway Road east-west volumes sources from the tube count information presented in Table 4, split 50%/50% north/south (i.e. same amount of cars

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



entering from north and south and same number of vehicles departing to the north as the south).

A summary of the indicative turning movements for the weekday PM peak and the Saturday Peak are shown in figure 11 below.



Figure 10: Bluff Road / Holloway Road – Indicative Turning Movements

3.3.3 Intersection Turning Movement Counts

A series of intersection turning movement counts were conducted in the local area to the east of the subject site on Wednesday 28th November and Saturday 1st December, 2018. The intersections counted include:

- Bay Street / George Street (unsignalised)
- Wangara Road / George Street (unsignalised)
- Wangara Road / Reserve Road (unsignalised)
- Bay Road / Reserve Road (traffic signals)

The overall peak hour for the weekday surveys occurred between 5pm-6pm, whilst the overall peak hour for the Saturday surveys occurred between 11am-12noon. As summary of the peak hour volumes at each intersection is provided in Figure 11 and Figure 12 below.

A full copy of the intersection turning movement count information is provided in Appendix B.

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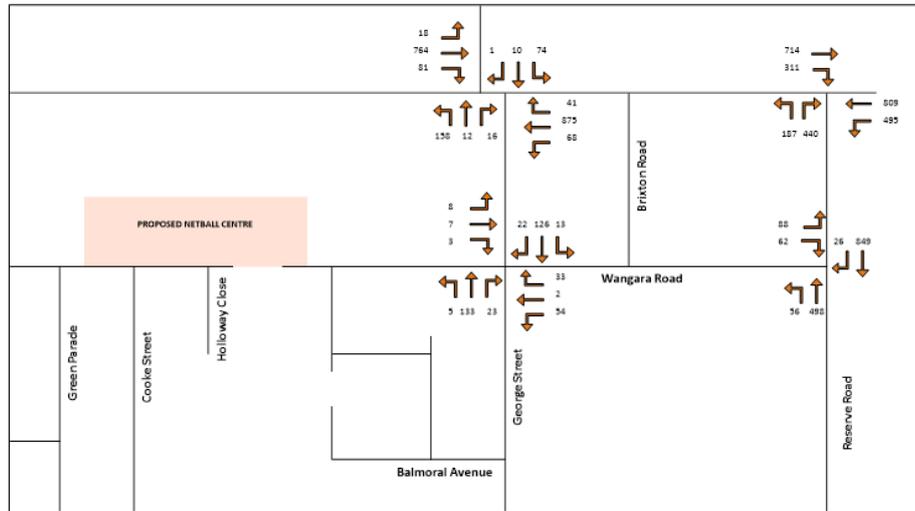
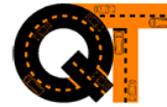


Figure 11: Turning Movement Counts – Wednesday 28/11/18 – 5pm-6pm

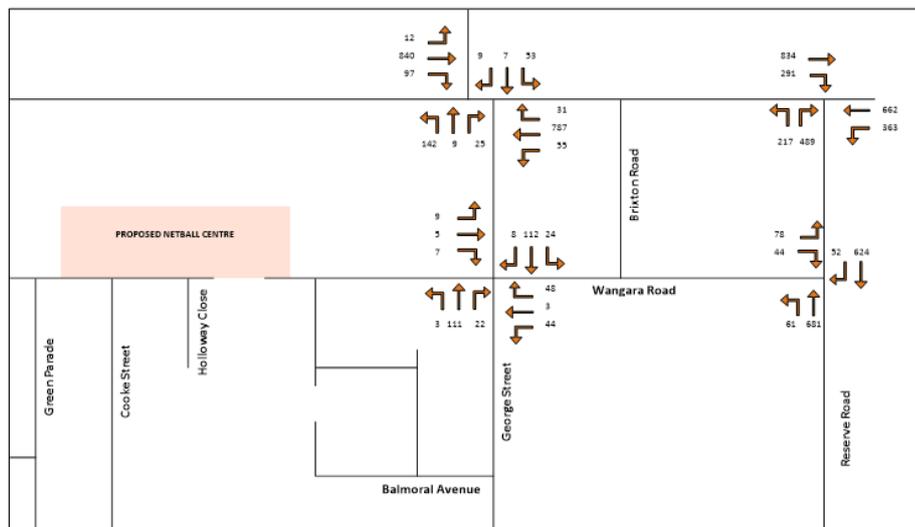


Figure 12: Turning Movement Counts – Saturday 1/12/18 – 11am-12noon

3.4 Existing Car Parking Conditions

3.4.1 Capacity and Restrictions

The existing on-street car parking in the vicinity of the subject site has been documented, including the capacity and restrictions.

A summary of the area reviewed for this study is shown in Figure 13 below.

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Bayside Netball Centre – 11 Holloway Road, Sandringham

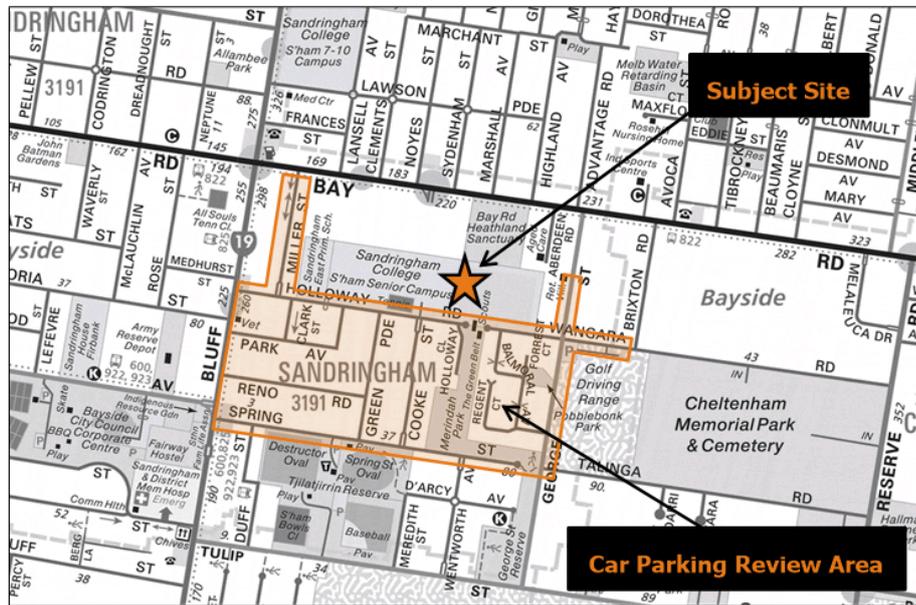


Figure 13: On-Street Car Parking Review Area (Source: www.melway.com.au)

A summary of the capacity and restrictions in the review area is provided in Table 5 below.

Table 5: On-Street Car Parking – Capacity & Restrictions

Street	U/R	No Stopping (School Times)	No Stopping (Weekend)	2P	P15 min / P2min (School Times)	Other (Disabled)	Total
Holloway Road (7.1m wide)							
North Side	-	14	-	-	41	2	57
South Side	-	19	-	-	-	-	19
Combined	-	33	-	-	41	2	76
Miller Street (7.1m wide)							
East Side	11	-	-	20	-	-	31
West Side	-	26	-	-	-	-	26
Combined	11	26	-	20	-	-	57
Clarke Street (3-8m wide – unsealed)							
East Side	-	11	-	-	-	-	11
West Side	-	8	-	-	-	-	8
Combined	-	19	-	-	-	-	19
Park Avenue (7-7.1m wide)							
N/W Side	21	8	-	-	-	-	29
S/E Side	37	-	-	-	-	-	37
Combined	58	8	-	-	-	-	66

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Street	U/R	No Stopping (School Times)	No Stopping (Weekend)	2P	P15 min / P2min (School Times)	Other (Disabled)	Total
Reno Road (6.8m wide)							
North Side	32	-	-	-	-	-	32
South Side	32	-	-	-	-	-	32
Combined	64	-	-	-	-	-	64
Spring Street (7.9m wide)							
North Side	49	-	-	28	-	-	77
South Side	94	-	-	-	-	-	94
Combined	143	-	-	28	-	-	171
Green Parade (7.1m wide)							
East Side	29	-	-	-	-	-	29
West Side	24	-	-	-	-	-	24
Combined	53	-	-	-	-	-	53
Cooke Street (7.1m wide)							
East Side	30	-	-	-	-	-	30
West Side	-	-	32	-	-	-	32
Combined	30	-	32	-	-	-	62
Holloway Close (5m wide)							
East Side	2	-	-	-	-	-	2
West Side	1	-	-	-	-	-	1
Combined	3	-	-	-	-	-	3
Balmoral Avenue (6.9m wide)							
W/S Side	22	-	-	-	-	-	22
North Ext.	3	-	-	-	-	-	3
E/N Side	19	-	-	-	-	-	19
Combined	44	-	-	-	-	-	44
Regent Court (5m wide)							
W/S Side	1	-	-	-	-	-	1
E/N side	4	-	-	-	-	-	4
Combined	5	-	-	-	-	-	5
Wangara Road (10m wide)							
North Side	41	-	-	-	-	-	41
South Side	29	-	-	-	-	-	29
Combined	70	-	-	-	-	-	70
George Street (10m wide)							
East Side	47	-	-	-	-	-	47
West Side	35	-	-	15	-	-	50
Combined	82	-	-	15	-	-	97
OVERALL	563	86	32	63	41	2	787

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The majority of the parking in the local area is unrestricted (72% of spaces), with a number of 'No Stopping' restrictions applying at school times in the vicinity of Sandringham Secondary College. Outside of school times, these spaces are unrestricted.

3.4.2 Spot Car Parking Occupancy Surveys

A spot parking occupancy surveys was undertaken between 11am-12:30pm on Tuesday, 20th October 2020. We note that Stage 4 COVID-19 restrictions were still in force at the time of the survey, which may result in some non-regular parking patterns as follows:

- Sandringham Secondary College was only partially operating and therefore the staff demands may be lower than 'typical' conditions.
- Residents were subject to 'work from home' restrictions apart from 'permitted workers' which is likely to lead to higher parking demands for residents.

To establish typical Saturday parking demands, we have reviewed parking occupancies based on historical aerial photographs utilising Nearmap.

The most recent Saturday aerial photograph was recorded on 25th November 2017 at 9:45am. At the time of this aerial photograph cricket matches were occurring on both school ovals and 'market' was occurring at the Primary School.

A summary of the observed parking occupancies for the overall survey as detailed previously in Figure 13, is shown in Figure 14 below.

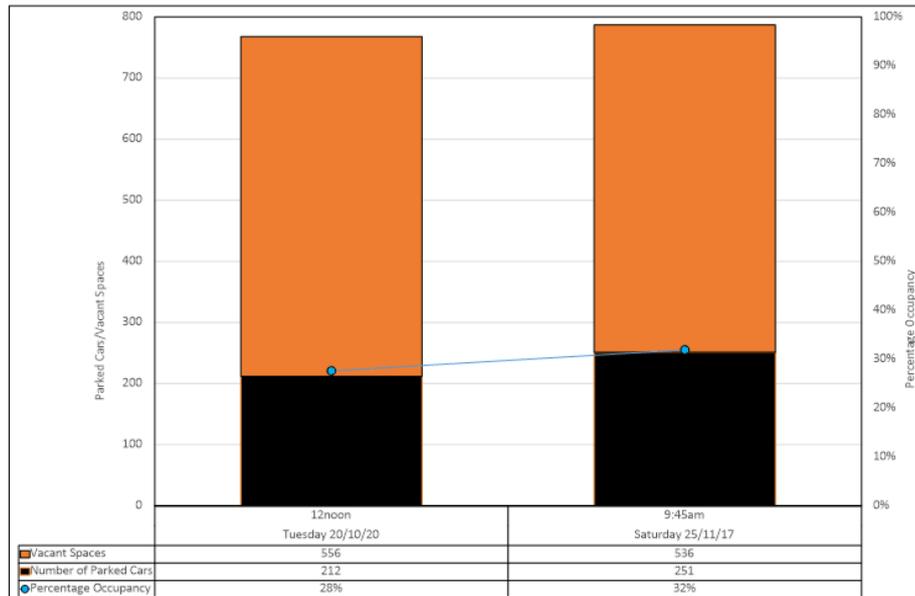


Figure 14: Parking Occupancy Surveys – Overall Summary

A copy of the parking occupancy survey data information is provided at Appendix C.

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



3.5 Road Safety Review

A road safety review has been undertaken for the key vehicle routes in/out of the local area, using the VicRoads crash stats database. The area is shown in the figure below.

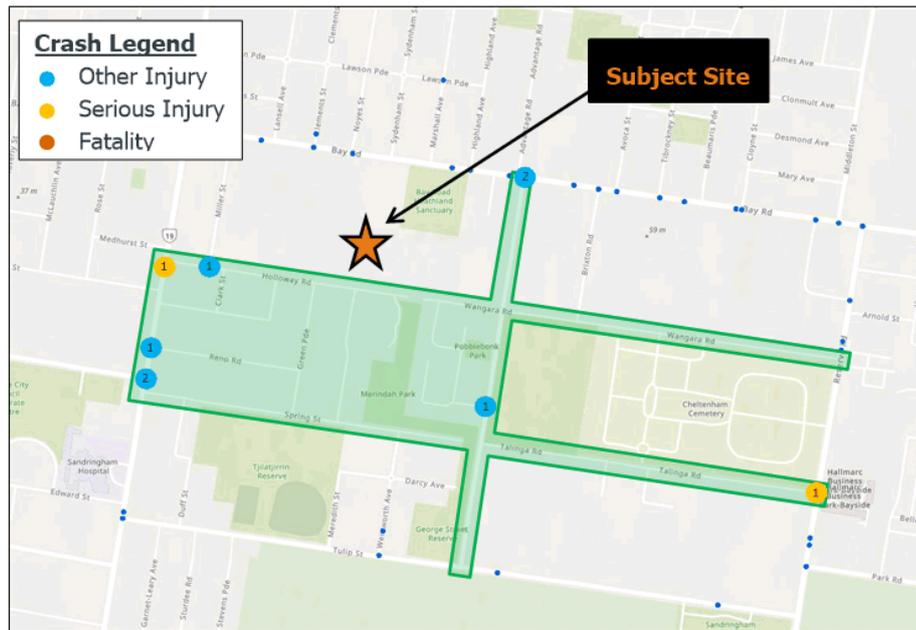


Figure 15: Road Safety Review Area

The period of recorded casualty crashes that has reviewed is between 2014-2018, which represents the latest 5 years of available data.

A total of 9 casualty crashes have been recorded, with a maximum of 2 casualty crashes in any one location. The remaining locations had 1 casualty crash only.

The Department of Infrastructure outlines the following with respect to 'Black Spots':

For individual sites such as intersections, mid-block or short road sections, there should be a history of at least three casualty crashes over a five-year period. For lengths of road, there should be an average of 0.2 casualty crashes per kilometre per annum over the length in question over five years.

Accordingly, none of the roads or intersections in this area would meet this requirement and therefore there is not considered an inherent safety concern in the review area as a whole or at any one location.

The majority of casualty crashes occur on Reserve Road and Bay Road outside of the review area. The higher traffic volumes on these arterial roads result in higher exposure and therefore higher likelihood of casualty crashes.

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Bayside Netball Centre – 11 Holloway Road, Sandringham



3.6 Sustainable Transport Infrastructure

The site has access to public transport infrastructure, including bus services operating along Bay Road and Bluff Road, within 550m of the site.

These services provide a connection to Sandringham Railway Station/Bus Terminus and Southland Shopping Centre/Bus Terminus, which provide a connection to a number of areas in the south-eastern suburbs as well as the CBD.

Figure 16 outline the nearby public transport services.

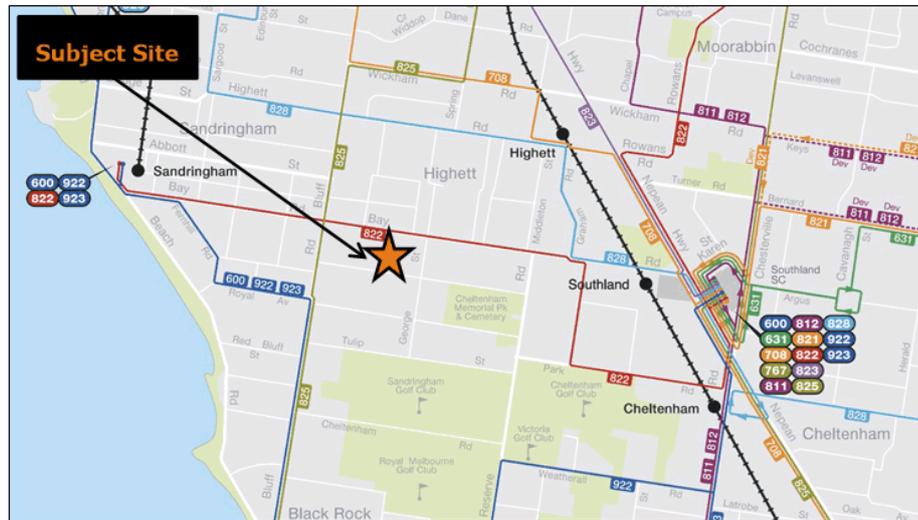


Figure 16: Public Transport Local Area Map (Source: www.ptv.com.au)

These services would not be unreasonably impacted on by the proposed development. Additionally, the proposed development would not trigger the need for additional public transport services in the area.

4 Car Parking Assessment

4.1 Statutory Car Parking Requirements

The proposed development will occur on a state government public school site. On this basis, the proposal is not subject to the planning requirement of the Bayside Planning Scheme, including Clause 52.06 (Car Parking).

For the purposes of this assessment, we have reviewed the requirements of Clause 52.06 of the Bayside Planning Scheme for context of the of the likely car parking demands.

The proposed netball courts fall under the 'Open Sports Ground' land use category which includes 'Land used for sport, but which is available for informal outdoor leisure or recreation when not being used or prepared for an organised game. It may include lights, changerooms, pavilions, and shelters'.

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Bayside Netball Centre – 11 Holloway Road, Sandringham



'Open Sports Ground' is not listed under Clause 52.06-5 of the Planning Scheme and hence, car parking is to be provided to the satisfaction of the Responsible Authority. Therefore, no specific car parking rate is required under Clause 52.06, with the provision of car parking subject to a Car Parking Demand Assessment.

4.2 Peak Operation Days / Times

The proposed facility will operate with the following typical arrangements:

- **Weekday (day period – school hours)** – Utilised by Sandringham Secondary College or other schools for sports activity.
- **Weekday (evening / night period)** – Limited competition and training for local sports clubs (approximately 75% of weekend activity).
- **Saturdays/Sundays (day period)** – Formal competition / matches for local sporting clubs.

During the weekday day period, when the courts are utilised by Sandringham Secondary College or other schools, parking demands are expected to be negligible. The staff and students associated with Sandringham Secondary College are already on-site and therefore do not generate any additional parking demands when utilising the courts. If activity associated with other schools was to occur, students from other schools would be likely to arrive by bus resulting in negligible parking demands.

For the local sporting club activity, peak operation will occur on Saturdays/Sundays when formal competition / matches occur. Parking demands for weeknight activity are expected to be 75% of the Saturday activity. This is due to the training component typically attracting less people, given that only a single team will operate in each court and no umpires or parent spectators are likely to be present.

In view of the above, the car parking demands for the proposed centre have been assessed for the peak Saturday/Sunday competition and the weeknight evening/night operation.

4.3 Peak Car Parking Demand Assessment

4.3.1 Saturday/Sunday Competition

The following outlines a first principles assessment of the likely peak car parking demand to be generated by the 12-netball court facility during competition / matches.

The following numbers form the basis of the assessment:

- 7 players per side resulting in 14 players per court
- 1 substitute per team resulting in 2 substitute players per court
- 2 umpires per court
- 15-30 spectators per court, typically 1 or 2 parents per child for junior matches. Spectators for seniors matches are negligible.
- **TOTAL people per court – 33-47 people**

With this type of use a number of players and umpires are likely to arrive by modes of transport other than individual cars, including:

- Walking and cycling from the nearby area

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- Players & umpires under 18 years of age or unlicensed and therefore dropped-off/picked-up by parent/sibling/friend/guardian etc.
- Public transport from bus stops along Bay Road connecting to Southland Shopping Centre/Bus Terminus and Sandringham Railway Station.
- Multiple team members arriving together (car-pooling)

Based on the above, and considering the type of use, an upper limit of 75% of players/umpires/staff etc. are expected to drive to the site individually. For the purposes of this assessment, we have also considered a 'sensitivity test' scenario, whereby 100% of players/umpires arrive in individual vehicles. On this basis, a summary of the parking demands per court is summarised in Table 6 below.

Table 6: Car Parking Demands – Per Court

Component	Size	Car Parking Rate	Car Parking Demand
Likley Parking Demand Per Court			
Players	16	0.75 spaces/player	12 spaces
Umpires	2	0.75 spaces/player	1.5 spaces
Spectators	15-30	Arrive in vehicle with players	-
TOTAL	33-47 per court	-	13.5 spaces/court
'Sensitivity Test' Demand Per Court			
Players	16	1 spaces/player	16 spaces
Umpires	2	1 spaces/player	2 spaces
Spectators	15-30	Arrive in vehicle with players	-
TOTAL	33-47 per court	-	18 spaces/court

Accordingly, when all 12 courts are being utilised an a likley parking demand of 162 cars would be expected and an upper 'sensitivity test' demand of 216 spaces could be expected.

The critical period for this type of use is the changeover period, when players from the next time slot are arriving while the players from the current time slot are still playing/finishing their games.

To manage the parking demands associated with the proposed facility, it is recommended that the session times for the games on the netball courts are staggered as follows (for 45 minute session times):

- 4 Netball courts to start at commencement of session.
- 4 Netball courts to start 15 mins after commencement of session.
- 4 Netball courts to start 30 mins after commencement of session.
- Not required for school sports where students/players generally arrive by bus.

Based on the above, the 'change over' demands will occur to 4 courts at any one time given the staggering of game session times.

Accordingly, the changeover demand would be the parking demand for the 12 courts (162-216 spaces), plus an additional 1/3 of this demand to account for the change over period of 4 courts at a time (54-72 car spaces).

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This equates to peak Saturday/Sunday changeover demand as follows:

- Saturday/Sunday: 'Likely' Peak Parking demand – **216 car spaces**
- Saturday/Sunday: 'Sensitivity Test' Parking Demand – **288 car spaces**

4.3.2 Weeknight Evening / Night Activity

The activity during weeknight evenings / nights will be a mixture of competition and training for the local sporting clubs.

The competition component (matches) is likely to have similar car parking demands as the weekend competition outlined in Section 4.3.1.

The training component typically results in much lower parking demands on the following basis:

- Each court typically occupies a single team training, rather than two teams during competition.
- Parents / spectators are less likely to watch training compared to match competition. Therefore, there is typically more 'drop-off' activity leading to lower parking demands during matches.
- There is typically no significant overlap between consecutive training sessions, resulting in less peak 'changeover'.
- No umpires are required for training activity.

Whilst the exact mixture of competition / training is not known, for the purposes of this assessment we have conservatively assumed that weeknight parking demand is up to 75% of peak weekend competition parking demands.

On this basis, the peak weekday evening parking demand is expected to be as follows:

- Weekday Evening: 'Likely' Peak Parking demand – **162 car spaces**
- Weekday Evening: 'Sensitivity Test' Parking Demand – **216 car spaces**

4.3.3 Comparison to Other Netball Facilities

It is difficult to utilise parking patterns associated with other netball facilities to determine the likely peak parking demand for the subject site. This is principally due to the key recommendation regarding the staggering of match session times.

Empirical data is typically collected by observing the peak carparking demands and dividing by the number of operational courts. As discussed above, the change over time between matches is critical for the peak carparking demands and therefore locations with little staggering will have much higher parking demands than locations with higher levels of staggering.

In view of the above, it is difficult to identify a representative site (similar suburban location, similar netball competition status, similar travel patterns) that also incorporates match start time staggering to the same degree that is recommended in this situation.

Therefore, as discussed above an approach assessing the 'likely' and 'sensitivity test' scenarios has been adopted to review the implications of a range of possible parking demand outcomes.

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4.4 On-Site Car Parking Provision

The current indicative site plan includes a total of 98 car parking spaces. Therefore, under the current arrangement a peak overflow of 118-190 spaces would occur in the surrounding on-street car parking resources during the peak Saturday/Sunday competition.

It is desirable to maximise the on-site car parking to reduce the level of car parking catered for in the surrounding public parking resources. We have reviewed the on-site car parking arrangements and have identified a number of recommended modifications to achieve additional on-site parking including:

- Relocate the site entry to the western boundary of the proposed car park and provide car parking spaces on the north side of the aisle.
- Provide additional spaces on the south side of the aisle in the location of the existing site entry.
- Extend the carpark with the exit to Wangara Road.
- Angle the parking spaces on both sides of the access aisle to 60 degrees to reinforce the one-way nature of the carpark.

We have prepared a concept plan showing the above recommended modifications in Figure 17 below, with a full size copy provided in Appendix D.

This reconfiguration of the on-site carpark results in approximately 114 on-site parking spaces which includes 109 60 degree angle spaces and 5 pick-up / drop-off spaces. We note that the bus parking and pick-up / drop-off spaces are proposed to be shared given that the peaks for these two components are not expected to coincide.



Figure 17: Recommended On-Site Car Parking Modifications (114 Spaces)

A summary of the on-site car parking supply following the above recommendations and the resultant overflow parking is provided in Table 7 below.

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Table 7: On-Site Car Parking Provision - Summary

Measure	Weekday Evenings	Weekends
On-Site Parking Provision (Maximised)	114 spaces	
Likely Peak Car Parking Demand	162 spaces	216 spaces
Likely Overflow Parking Demand	48 spaces	102 spaces
'Sensitivity Test' Peak Car Parking Demand	216 spaces	288 spaces
'Sensitivity Test' Overflow Parking Demand	102 spaces	174 spaces

In view of the above, the recommend on-site carpark layout changes would result in a likely overflow demand of 48 spaces during weeknight evenings and 102 spaces on weekends in the surrounding public parking resources.

The 'sensitivity test' assessment (100% arrival by individual vehicles) results in overflow demand of 102 spaces on weeknight evenings and 174 spaces on weekends.

4.5 Suitability of Public Parking in Surrounding Area

As discussed above, at peak times the proposed netball centre is expected to generate a likely car parking demand of 48-102 spaces in the public parking resources surrounding the subject site. The 'sensitivity test' analysis indicates that in the worst case up to 102-174 spaces could overflow to the surrounding parking resources.

If no formal parking restrictions are introduced, these parking demands will typically locate in the most proximate parking resources to the centre.

For the purposes of this assessment, a 250m radius from the proposed netball centre entry is shown on the aerial photograph below to indicate the most likely locations where on-street demands would occur.

We anticipate that parking would first occur on Holloway Road and Wangara Road given they are the most proximate spaces to the centre. Parking would then be likely to utilise the surrounding residential streets including Holloway Close, Cooke Street and Green Parade.

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Figure 18: On-Street Parking – Likely Locations Without Restrictions

These existing conditions would result in concentrated parking demands in the most proximate streets, with limited car parking opportunities for adjacent residents.

In order to avoid the above issues, it is recommended that parking demands associated with the proposed sporting activity occurs on non-residential frontages.

This approach limits the impacts on existing residential properties, whilst allowing for a level of utilisation of the on-street parking resources.

We have reviewed the public parking in the vicinity of the subject site and have identified the following 'suitable' resources along non-residential frontages in close vicinity of the subject site.



Figure 19: On-Street Parking – Suitable Spaces on Non-Residential Frontages

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A summary of the capacity and available spaces in these 'suitable' areas based on the parking occupancy surveys detailed in Section 3.4.2, is provided in Table 8 below. For the purposes of this assessment that parking demand during the weekday 'day' have been adopted for the weekday 'evening' analysis.

Table 8: 'Suitable' Public Car Parking - Summary

Road	Section	Side	Capacity	Spaces Available	
				Weekday (Day)	Weekend (Day)
Wangara Road	School Frontage	North Side	17	14	10
	George St to Brixton Rd	North Side	15	13	11
		South Side	14	14	9
George Street	NB #13 Wangara Rd to Wangara Rd	East Side	9	8	3
	Wangara Rd to Talinga Rd	East Side	38	37	38
Driving Range Carpark	Cnr Wangara Rd & George St	-	58	58	36
TOTAL			151	144	107
Likely Peak Overflow Parking Demand				48	102
Likely Post Development – Spaces Available				96	5
'Sensitivity Test' Peak Overflow Parking Demand				102	174
'Sensitivity Test' Likely Post Development – Spaces Available				42	-67

A summary diagram showing the capacity and available spaces for each section of 'suitable' public parking is shown in Figure 20 below.



In view of the above, the 'suitable' public parking spaces have sufficient capacity and available spaces to accommodate the likely overflow parking demands associated with the proposed netball centre and the weeknight evening 'sensitivity test' scenarios.

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However, under the weekend 'sensitivity test' scenario the public parking documented is 67 spaces short of accommodating the demand. Therefore, in this scenario parking would be likely to extend further along Wangara Road, George Street (north of Wangara Road), Brixton Street and potentially Talinga Road based on proximity to the netball centre. A summary of the extent of on-street parking is identified in Figure 21 below.



Figure 21: *Extent of Overflow Parking – 'Likely' vs. 'Sensitivity Test' Scenarios (Saturday/Sunday)*

In terms of suitability, the majority of these roads accommodate commercial properties and therefore there are no specific amenity impacts associated with overflow parking from the netball centre. Although, the key issue with the spread of carparking in the weekend 'sensitivity test' scenario is the walking distance to the netball centre (greater than 500-600m). The patrons required to utilise the furthest away spaces will be required to walk over 1km for the round trip.

The weekend 'sensitivity test' scenario assumes that all players and umpires drive individually to the site, which is not expected to occur in practice (due to carpooling, walking and cycling). However, it is recommended that Council monitor the extent of on-street parking post development. If parking demands do approach the extents predicted for the 'sensitivity test', it is recommended that additional off-street carparking is considered. The most likely location for additional carparking would be on the former golf driving range site at the corner of Wangara Road / George Street (Council owned). The existing carpark could be extended to provide parking in closer proximity to the netball centre.

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4.6 Recommended Parking Management Scheme

4.6.1 Restrictions for Residential Frontages

Type of Restrictions

In order to ensure that vehicles associated with the netball centre utilise the suitable public parking spaces identified above, parking management is required along the residential frontages in the local area.

Under the existing conditions, the majority of the streets in the local area are unrestricted or have 'No Stopping' restrictions that apply during school drop-off and pick-up times.

Netball centre patrons and local residents can be separated through the usage of parking restrictions, with residents exempt from restrictions through a permit system administered by Council. This can be achieved through time based parking restrictions or permit zone restrictions.

Time based restrictions are generally applied as 1 hour, 2 hour or 4 hour restrictions. Given the generally short nature of netball games/matches (approximately 40-60 minutes depending on age groups and competition) parking demands for netball patrons could be approximately 45-70 minutes.

Therefore, even with the usage of the shortest typical 1P parking restrictions, it is possible that some netball patrons may still utilise residential frontages.

On this basis, it is recommended that a combination of Permit Zone restrictions on one side of the street and 1P restrictions on the other side of the street are initially installed and reviewed following completion and operation of the netball centre. If netball centre parking is deemed to be an issue along residential frontages, additional Permit Zone restrictions could be considered for implementation as required.

It is noted that any existing restrictions that apply (such as school No Stopping restrictions) will be retained.

Periods of Restrictions

The other key aspect to the introduction of parking restrictions is the time / days that the restrictions apply. The peak overflow parking demands are expected to occur on the weekend, with lower overflow parking demands on weekday evenings.

Whilst the demands on weekday evening are expected to be lower, it is conservatively recommended to apply the restrictions across the general weekday and weekend peak times that netball centre is operating.

Whilst the currently proposal seeks to operate to 9:30pm/10:30pm on Saturday/Sunday, to reduce traffic impacts it is recommended to operate between 8am-6:30pm on Saturday/Sun (discussed in more detail in Section 8 below).

For the weekday night period, it is recommended that the restriction operate until 9:30pm, to match the potential use of all 12 courts. Between 9:30pm and 10:30pm, only the indoor courts (3 courts) are permitted to operate and parking demands would be comfortably accommodated on-site.

On this basis, the following times are recommended for the parking restrictions:

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- 8am-6:30pm, Sat-Sun
- 4pm-9:30pm, Mon-Fri

However again, parking demands should be monitored post development, with possible restriction modifications if required (i.e. modified times, reduced periods, etc).

Extent of Parking Restrictions

The proposed parking arrangements aim to direct netball centre users to the 'suitable' parking spaces along residential frontages. On this basis, it recommended that the parking restrictions are applied to the whole local area bounded by Bluff Road, Spring Street and George Street.

Furthermore, restrictions are recommended on the east side of George Street, between Wangara Road and Bay Road.

A summary of the recommended extent of parking restrictions is shown in Appendix E.

4.6.2 Restrictions to Maintain Traffic Flow / Facilitate Access

The 'suitable' public parking locations identified in Figure 19, were generally located on streets that can accommodate parking on both sides of the road and maintain simultaneous two-way traffic flow. These streets include Wangara Road and George Street.

However, additional traffic volumes including buses are expected on Holloway Road, which has a road width of 7.1m wide. This width allows for parking on one side of the road and simultaneous two-way traffic flow or parking on both sides of the road and a single lane of traffic.

Given the increase in traffic volumes and the increased level of bus movements, we recommend that 'No Stopping' restrictions are applied on the south side of Holloway Road. We note that 'No Stopping' restrictions already apply on the south side of Holloway Road at school drop-off / pick-up times. Residents will be able to utilise the parking on the north side of Holloway Road or within the adjacent side streets as required.

The proposed No Stopping restrictions will also facilitate bus entry movements into the on-site carpark. In additional, a small section of No Stopping to facilitate bus exit movements from the on-site carpark on Wangara Road is also recommended.

4.6.3 Summary of Recommendations

A summary of the proposed parking restriction scheme to be applied to the streets in the vicinity of the subject site is summarised Appendix E.

4.7 Car Park Design

4.7.1 Vehicle Access

The preliminary Master Plan shows vehicle access at two points to Holloway Road. The western access is for entry only and the eastern access provides for exit movements only. This results in the on-site carpark generally operating in a one-way arrangement (eastbound).

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As described in Section 4.4, it is recommended that the carpark is extended to the east with the eastern 'exit' point to Wangara Road. This allows for a larger on-site carpark, but also critically separates the 'In' movements via Holloway Road and the 'Out' movements via Wangara Road. The traffic volumes expected on the surrounding road network are discussed in Section 7 below.

To encourage vehicles to enter via Bluff Road / Holloway Road (rather than via the local road network to the south), it is recommended that the 'In' access points is designed as left in only. All exit movements must occur left out due to the existing road closure between Holloway Road and Wangara Road.

The largest vehicles the carpark will cater for are buses and larger service vehicles (i.e. waste collection). The access points should be designed to accommodate these vehicles.

The proposed vehicle access arrangements are satisfactory in dealing with the level of traffic expected to be generated by the proposed netball centre.

4.7.2 Vehicle Access Management

The proposed one-way configuration of the carpark results in a potential connection between Holloway Road and Wangara Road (eastbound). We note that Holloway Road / Wangara Road was historically closed, most likely due to traffic volumes travelling along the road.

In view of the above, it is important that the carpark is designed to avoid any 'through' traffic volumes utilising the carpark as a shortcut between Holloway Road and Wangara Road.

We recommend that an access control gate is included on the carpark access points to prevent access outside of the operating hours of the netball centre.

When the netball centre is operating, there obviously can't be any control of vehicle access differentiating netball users and through traffic. We note that the proposed carpark layout includes a series of road humps (refer to Section 4.7.6) which make the carpark route unattractive to through traffic. It is recommended that Council monitor traffic volumes post development and if through traffic is deemed an issue consider the provision of additional traffic management in the carpark and/or Holloway Road / Wangara Road.

4.7.3 Parking Spaces

As discussed previously in Section 4.4, we recommend that the parking spaces are modified to a 60 degree configuration. This would reinforce the one-way nature of the carpark with entry via Holloway Road and exit to Wangara Road.

The detailed carpark design should satisfy the requirements of Clause 52.06-9 of the Bayside Planning Scheme and AS2890.1:2004. The concept plan has been prepared with the following general carpark dimensions in accordance with User Class 2 (sports facilities):

- Space width – 2.6m
- Space Length – 6m (perpendicular to the kerb)
- Access Aisle – 4.6m

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4.7.4 Disabled Parking

Under the National Construction Code (NCC) formerly the BCA, accessibly designed car spaces are required at a rate of 1 space for every 50 car parking spaces proposed.

Given the recommendation to expand the on-site car parking to 114 spaces, a total of 3 accessible parking spaces are required (as shown on the recommended concept plan).

The disabled spaces should comply with the requirements of AS2890.6:2009.

4.7.5 Pedestrian Movements

Pedestrians movements to the netball centre will be driven by two distinct groups:

- Pedestrians to/from vehicles parked in the on-site carpark
- Pedestrians to/from the external road network including general pedestrian movement and to/from vehicles parked in the off-site public parking resources

On this basis, pedestrian movements can generally be expected from the east, west and south.

The pedestrian entry to the facility is proposed adjacent to the bus drop-off / pick-up point, on the northern side of the proposed carpark.

The most desirable pedestrian arrangement is to avoid pedestrian movements across the carpark access aisle, limiting the interaction between vehicles and pedestrians. This can be achieved for the external pedestrian movements in this layout via the provision of footpaths around the northern side of the carpark, linking to Holloway Road and Wangara Road.

Internal pedestrian movements to the individual car parking spaces are more difficult to manage, given that each parking space will have a differing travel desire lines between vehicles and the facility entrance. On this basis, it is difficult to provide a formal crossing within the car parking that would service these movements. Alternatively, it is recommended that traffic management (speed humps) is incorporated within the carpark to slow vehicle speed and therefore manage the interaction between pedestrians and vehicles.

A summary of the recommended pedestrian arrangements in the on-site car park are shown by the 'red' dashed lines in Figure 17 presented previously or in the concept plan in Appendix D.

4.7.6 Traffic Management

The recommended carpark layout includes a single straight access aisle, with an overall length of approximately 200m. As discussed above, pedestrian movements are expected across the access aisle between the centre entry and the parking spaces on the south side of the aisle. On this basis, we recommend that traffic management is included within the carpark to manage traffic speeds.

Traffic management within the carpark is best achieved through the provision of road humps at intervals of approximately 50m. Road humps do not impede access to the adjacent parking spaces, whilst providing effective speed control.

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A signage and linemarking plan should be prepared to formalise the car parking areas and maximise the efficiency. This should include but not be limited to:

- Clear signage designating the entry of the carpark from Holloway Road
- Appropriate signage / linemarking to highlight the one-way configuration of the carpark
- Appropriate car parking restriction signage to ensure there are adequate accessible car spaces and drop-off/pick-up facilities

4.8 Car Parking Assessment Summary

A summary of the car parking recommendations for the proposed Bayside Netball Centre is detailed below:

- On-site parking for the netball centre should be maximised and it is recommended that the on-site carpark is expended to provide for approximately 114 car parking spaces.
- The scheduling of netball matches should include a 'stagger' between session times to reduce peak car parking demands as follows:
 - 4 Netball courts to start at commencement of session.
 - 4 Netball courts to start 15 mins after commencement of session.
 - 4 Netball courts to start 30 mins after commencement of session.
- The peak parking demands expected with the inclusion of the above stagger times are as follows:
 - Saturday/Sunday (Competition):
 - 'Likely' Parking Demand - 216 spaces
 - 'Sensitivity Test' Parking Demand – 288 Spaces
 - Weekday evening (Competition / Training):
 - 'Likely' Parking Demand - 162 spaces
 - 'Sensitivity Test' Parking Demand – 216 Spaces
- Based on the provision of 114 spaces on-site, an overflow parking demand of 48-102 spaces on weekday evenings and 102-174 spaces on Saturdays/Sundays is expected in the surrounding public parking resources.
- To limit the impact to the adjacent residential area, it is recommended that netball centre parking demands are accommodated on 'suitable' non-residential frontages on Wangara Road, George Street and the existing carpark at the Golf Driving Range.
- These public parking spaces have a capacity of 151 spaces, with existing availability of 107-144 spaces. On this basis, there is sufficient capacity within the 'suitable' parking spaces to accommodate the 'likely' and weeknight 'sensitivity test' overflow demands associated with the netball centre.
- However, the weekend 'sensitivity test' scenario would result in parking extending further into Wangara Road, George Street, Brixton Street and potentially Talinga Road. This would result in long walking distances for netball patrons. It is recommended that Council monitor the extent of overflow parking and if parking extends as predicted for the sensitivity test, consider the provision of additional parking on the former golf driving range site (closer proximity to the netball centre).

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- To ensure vehicles associated with the netball centre utilise the 'suitable' parking spaces it is recommended that the following parking restrictions are installed in the local residential areas:
 - 'Permit Zone 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' one side
 - '1P 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' other side
 - Existing restrictions outside of these times would be retained
- Council should monitor parking demands in the area following the opening of the Netball Centre as consider the following amendments if required:
 - Potential inclusion of additional Permit Zone parking restrictions if parking availability is an issue within the residential streets.
 - Potential modifications of the days/times that the restrictions apply.
- 'No Stopping' restrictions are recommended along the south side of Holloway Road to maintain two-way traffic flow and allow bus access. Additional 'No Stopping' restrictions are recommended on the south side of Wangara Road opposite the on-site carpark access to facilitate bus egress.

5 Bicycle Parking Assessment

As discussed previously, the proposed netball centre is located on a state government high school site and therefore the proposal does not require a planning permit.

In view of the above, the proposal is not subject to Clause 52.34 (Bicycle Parking). However, the requirements of Clause 52.34 have been utilised as a guide to appropriate levels of bicycle parking for the netball centre.

Under Clause 52.34, the use falls under the term 'Minor Sports & Recreation Facility'.

Table 9 outlines an assessment of the bicycle parking provision against the statutory requirement prescribed under Clause 52.34 of the Bayside Planning Scheme adopting the 'Minor Sports & Recreation Facility' rate.

The assessment is made on the assumption of 2 staff per court (umpires) plus 6 management/other staff and each netball court having a Net Floor Area of 465m².

Table 9: Clause 52.34 Bicycle Parking Assessment

Use	Size/ No.	Statutory Bicycle Parking Rate	Requirement ⁽¹⁾
Motel			
Staff	30	1 to each 4 employees	8
Visitor	5,580m ²	1 to each 200m ² of NFA	28
TOTAL			36

Note 1: Non-whole numbers rounded mathematically to the nearest whole number as specified by Clause 52.34

In view of the above, it recommended that bicycle parking in the order of 36 spaces is provided for the netball centre.

The majority of demands are likely to be associated with visitors and therefore, these spaces are best provided via bicycle rails in the vicinity of the entry to the netball centre.

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A secure staff bicycle parking enclosure is also recommended, to facilitate longer term staff bicycle parking requirements.

Indicative locations for the recommended visitor bicycle parking spaces are shown on the carpark concept plan in Appendix D.

6 Broader Pedestrian Accessibility

The pedestrian movements within the on-site carpark were discussed in Section 4.6.7, however, a number of netball centre users will park in the surrounding public parking resources and walk to the subject site.

Based on the 'suitable' public parking spaces identified previously, pedestrians will need to cross George Street when parked on the eastern sections of Wangara Road, the east side of George Street or the driving range carpark as shown in Figure 21 below.



Figure 22: Pedestrian Desire Lines – Off-Site Parking

Under the existing conditions, pedestrian facilities at the George Street / Wangara Road intersection are limited to pram ramps on the north, east and west approaches to the intersection. No pram ramps are provided on the south side of the intersection.

We note that the George Street / Wangara Road intersection is unique, whereby it separates the residential area to the west and the commercial area to the east. From a design perspective, this means that the intersection needs to be able to accommodate heavy vehicle movements associated with the existing commercial area on the north, east and south legs. Heavy vehicle movements will be limited on the west leg to waste collection, smaller delivery trucks and buses from the proposed Netball Centre

An aerial photograph of the existing conditions is provided in Figure 22 below, which show a large semi-trailer turning from north to east.

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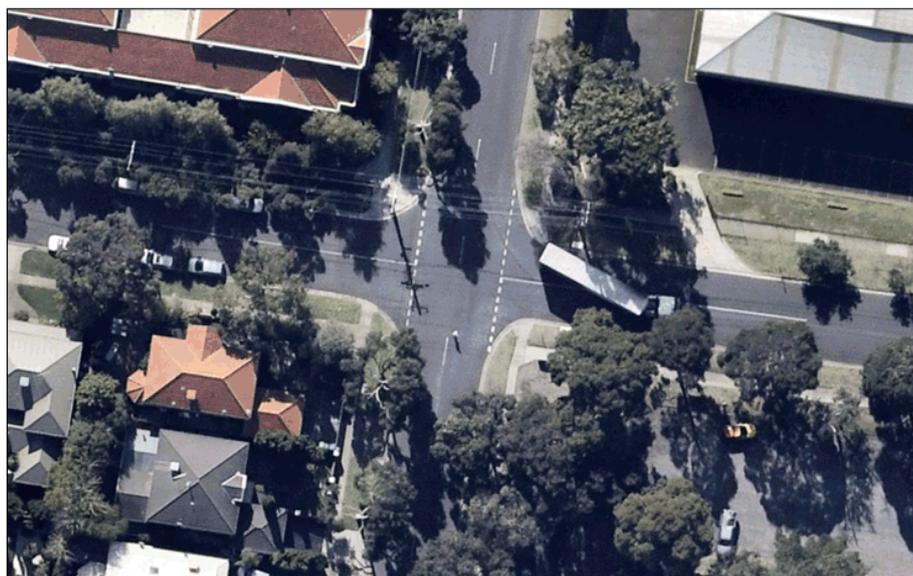


Figure 23: Existing Conditions – George Street / Wangara Road (Aerial: Nearmap)

George Street is classified as a collector roads and Wangara Road is classified as local road. The existing speed zone on George Street is 60km/h, whilst Wangara Road is subject to the default urban speed limit of 50km/h.

Pedestrian movements are only expected in this area during peak Saturday competition (when overflow parking occurs). The pedestrian volumes have been estimated based on the following key assumptions:

- The parking demand assessment presented previously, with vehicle assumed to utilise spaces based on their proximity to the netball centre the closest spaces.
- An average occupancy of 2 people per vehicle.
- Given the short duration of netball matches (40-60 minutes), it is conservatively assumed that during each hour throughout the competition day there will pedestrians arriving at the site and pedestrians departing the site.
- Pedestrians crossing on the south side of the intersection are assumed to have 80% of movements cross Wangara Road at the George Street intersection.

A summary of the post development traffic volumes and likely pedestrian volumes at the intersection are summarised in Table 10 below.

Table 10: George Street / Wangara Road – Post Development Volumes

Measure	George Street - North	George Street - South	Wangara Road - West
Peak Hour Traffic Volume (Saturday 11am-12noon)	384 veh/hr	371 veh/hr	251 veh/hr
Hourly Pedestrian Volume	56 ped/hr	264 ped/hr	211 ped/hr

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The Department of Transport (VicRoads) identifies thresholds for the provision of zebra crossings, however, no formal guidance is currently provided for signalised crossings. On this basis, we have reviewed the thresholds provided by RMS NSW and a general guide. A summary of the general thresholds for the installation of formal pedestrian crossing facilities is as follows:

- **Zebra Crossing (Static)**
 - 20 pedestrians / hour
 - 200 vehicles / hour
- **Zebra Crossing (Flashing Lights)**
 - 60 pedestrians / hour
 - 500 vehicles / hour
- **Pedestrian Operated Signals**
 - 175 pedestrians / hour
 - 600 vehicles / hour in each direction

In view of the above indicative pedestrian volumes, all legs at the intersection fall within the warrants for static zebra crossings.

As described previously, the design of pedestrian facilities are constrained by the need to continue access for larger vehicles on the north, south and east legs of the intersection. Therefore, kerb extensions or median islands are not possible on the north and south legs of the intersection. However, given the residential nature of the western leg, it is appropriate for the pedestrian crossing to include kerb extensions.

To improve general pedestrian safety the following general pedestrian treatments are recommended:

- Raised Zebra Crossing (without flashing lights) on the north and south George Street legs.
- Raised Zebra Crossing (without flashing lights) including kerb extensions on the west Wangara Road leg.
- Reduce speed zoning along George Street from 60km/h to 50km/h
- Provide advanced road humps (speed cushions to accommodate truck movements) on the north and south approaches of George Street to further reinforce a slow speed environment.

Given that the above assessments of pedestrian volumes are based on a range of assumptions, the warrants for the implementation of zebra crossings cannot be categorically demonstrated to VicRoads at this point in time. On this basis, a practical approach to the implementation of the above treatments is to install the platforms initially without the zebra crossing and undertake pedestrian counts once the netball centre is operating, to confirm the requirements for zebra crossings.

Given the potential amenity impacts associated with the proposed road humps, we recommend that Council consult with the adjacent property owners/occupiers.

A summary of the recommended pedestrian treatments are summarised in Figure 23 below.

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Figure 24: Recommended Pedestrian Treatments – George Street / Wangara Road (Aerial: Nearmap)

7 Traffic Impacts

7.1 Vehicle Access Arrangements

The proposal seeks to distribute traffic volumes in the local road network evenly between Holloway Road and Wangara Road.

This is achieved by the one-way designation of the on-site carpark, with entry movements via Holloway Road and exit movements via Wangara Road. This approach has a range of advantages including:

- Reducing the overall traffic volumes on any one road in the area, particularly Holloway Road.
- Results in all of the netball centre volumes travelling in the same direction, reducing conflict associated with vehicles travelling in opposing directions.
- Allows for multiple departure routes through George Street and Wangara Road, reducing the traffic capacity impacts at any one intersection.

The entry of vehicles via Holloway Road is considered important given the Holloway Road address for the site, as drivers using GPS directions will be guided through the correct road network via Holloway Road.

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7.2 Traffic Generation

The following outlines the expected traffic generation based on the full 12 courts being utilised as per the numbers and operational characteristics outlined previously (i.e. Saturday/Sunday competition).

The following is based on 45-minute time slots for games, which is conservative. If game slots are 50mins-1hour, the traffic generation will be less across the entire 'competition' period.

The traffic generation is based on the Parking Demand Assessment outlined at Section 4.3, with each full cycle of the courts generating 216 movement for the 'likley' scenario and 288 movements for the 'sensitivity test' scenario.

Based on this, the following traffic generation is anticipated, which represents the upper-limit of demands, assuming full utilisation of the 12 courts and 45-minute allowance for each game and the staggering of matches as discussed previously:

- The first 1-hour period of competition will include the arrival for all courts and the departure movements for the first 4 courts.
- After the first 1-hour period, traffic volumes will include the full arrival for 12 courts and the full departure for 12 courts.
- In the last hour of operation will include the arrival of last game time for 4 courts and departure movements for all courts.
- Council's current proposal sees operation of the courts between 8am-9:30/10:30pm during weekend competition and 4pm-9:30/10:30pm on weekday evenings. It is noted that the 3 x outdoor courts are proposed to operate for 1 hour longer than the 9 outdoor courts.

Activity on weekday evenings is expected to be approximately 75% of the peak Saturday activity identified above.

A summary of the peak hour and daily traffic generation for the 'likley' and 'sensitivity test' scenarios is outlined in Table 11 and below.

Table 11: Traffic Generation – Saturday / Sunday

Hour	'Likley' Traffic Generation			'Sensitivity Test' Traffic Generation		
	Arrival	Departure	Total Movements	Arrival	Departure	Total Movements
7-8am	54	0	54	72	0	72
8-9am	216	54	270	288	72	360
9-10am	216	216	432	288	288	576
10-11am	216	216	432	288	288	576
11-12pm	216	216	432	288	288	576
12-1pm	216	216	432	288	288	576
1-2pm	216	216	432	288	288	576
2-3pm	216	216	432	288	288	576
3-4pm	216	216	432	288	288	576
4-5pm	216	216	432	288	288	576

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'Likley' Traffic Generation				'Sensitivity Test' Traffic Generation		
Hour	Arrival	Departure	Total Movements	Arrival	Departure	Total Movements
5-6pm	216	216	432	288	288	576
6-7pm	216	216	432	288	288	576
7-8pm	216	216	432	288	288	576
8-9pm	203	216	419	270	288	558
9-10pm	41	203	243	54	270	324
10-11pm	0	41	41	0	54	54
Daily	2,889	2,889	5,778	3,852	3,852	7,704

Table 12: Traffic Generation – Weekday

'Likley' Traffic Generation				'Sensitivity Test' Traffic Generation		
Hour	Arrival	Departure	Total Movements	Arrival	Departure	Total Movements
3-4pm	41	0	41	54	0	54
4-5pm	162	41	203	216	54	270
5-6pm	162	162	324	216	216	432
6-7pm	162	162	324	216	216	432
7-8pm	162	162	324	216	216	432
8-9pm	152	162	314	203	216	419
9-10pm	30	152	182	41	203	243
10-11pm	0	30	30	0	41	41
Daily	871	871	1,742	1,161	1,161	2,322

It is noted that traffic generation associated with any weekday school activity during business hours is expected to be negligible.

7.3 Traffic Distribution

Based on the configuration of the proposed on-site carpark, all vehicle movements are expected to arrive via Holloway Road (from Bluff Road) and exit to Wangara Road (to George Street, Bay Road, Reserve Road, Tulip Street).

Given the regional nature of the netball facility, we have assumed a generally even distribution of traffic movements in the surrounding road network.

In particular the following outlines the rationale of the distribution model:

Arrival Movements (Holloway Road)

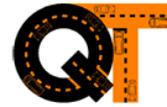
- 50 % from the north (Bluff Road)
- 50 % from the south (Bluff Road)

Departure Movements (Wangara Road)

- 33% to the east (Wangara Road to Reserve Road)
- 33% to the north (George Street to Bay Road)
- 33% to the south (George Street to Talinga Road / Tulip Street)

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This is shown diagrammatically in the figure below with the arrival percentages shown in 'blue' and the departure percentages shown in 'orange'.

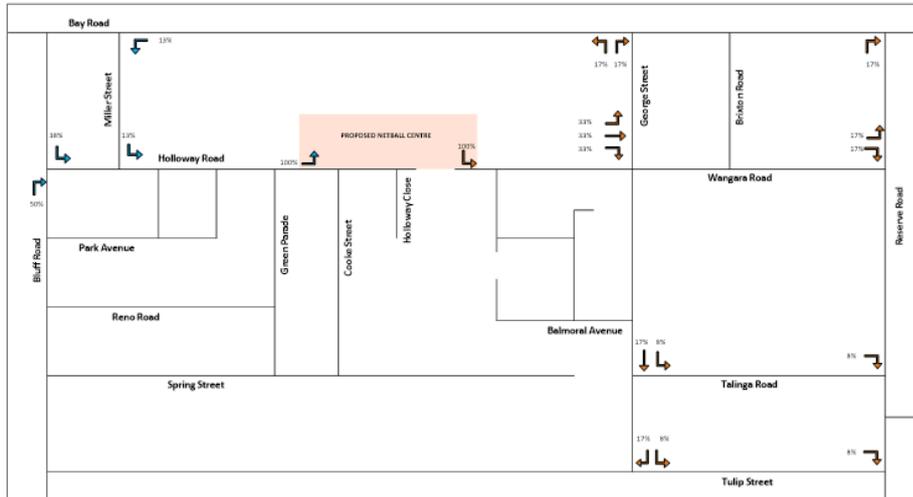


Figure 25: Traffic Distribution Diagram (percentages)

Based on the traffic distribution outlined at Figure 24 and the upper-limit hourly traffic generation of 432-576 movements for Saturdays and 324-432 for weekday evenings, the following development traffic volumes are provided which form the basis of the peak hour capacity impact analysis.

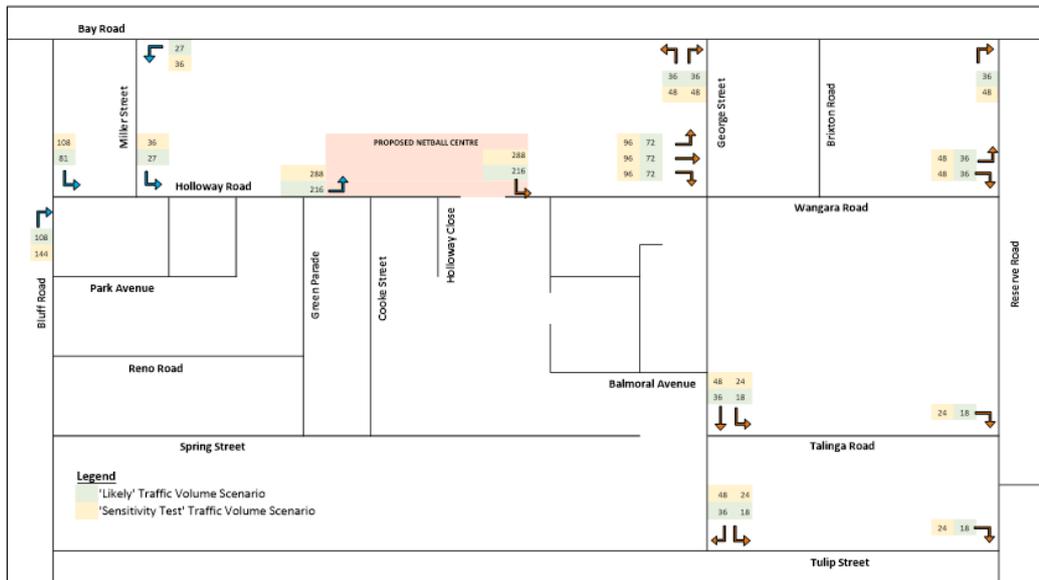


Figure 26: Development Traffic Generation Diagram – Saturday Peak

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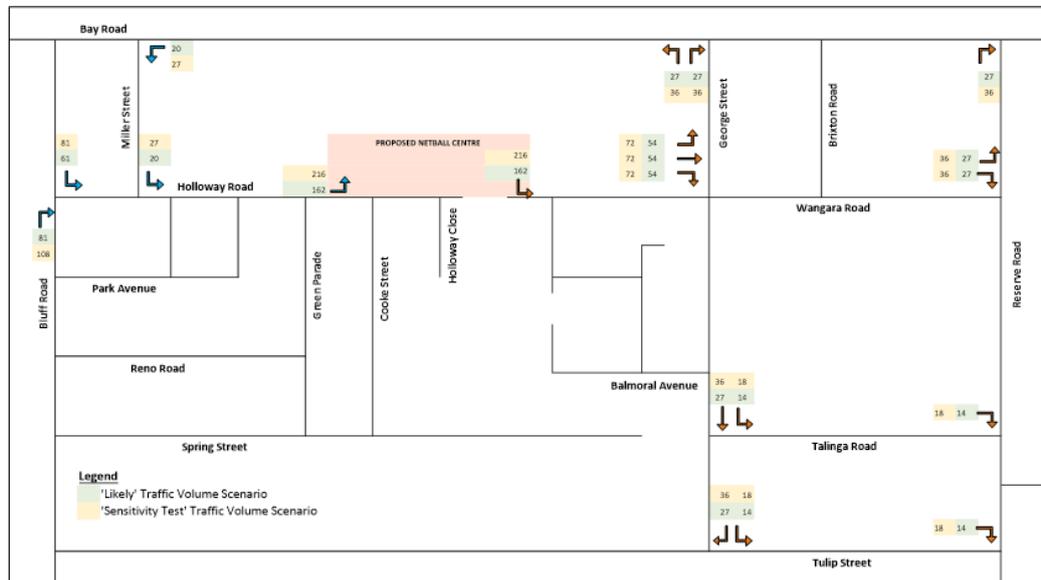


Figure 27: Development Traffic Generation Diagram – Weekday Evenings Peak

These development traffic volumes have superimposed onto the existing traffic volumes in the local area. This 'post development' traffic volume diagrams are provided at Appendix F.

8 Daily Traffic Volumes

The daily traffic volume is used as a measure of amenity for adjacent residents, with the 'environmental capacity' established to set acceptable daily traffic volumes for various road classifications.

The 'environmental capacity' represents a reduced volume compared to the pure traffic capacity and considers factors such as amenity and accessibility for adjacent properties. In the local area, the following environmental capacities apply for the key roads based on Council's road register:

- Holloway Road – 2,000-3,000 vehicles per day
- Wangara Road – 3,000-7,000 vehicle per day

It is noted that whilst Holloway Road is classified as a local road under Council's road register, it has a number of features consistent with a higher environmental capacity including:

- **Land Use:** The majority of the north side of Holloway Road is adjacent to the Secondary School, with residential uses in the remaining sections. The amenity impacts associated with higher traffic volumes are less applicable to non-residential land uses.
- **Traffic Flow:** A typical 'local street' provides for on-street parking on one side of the road, resulting in single lane flow when parking occurs. This situation is one of the key reasons for the application of 3,000 vehicles per day

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environmental capacity to manage the interaction of vehicles approaching in opposing directions. Whilst Holloway Road has a similar cross-section to typical local streets, the current proposal seeks to introduce 'No Stopping' restrictions on the south side of the road. This allows for simultaneous two-way traffic flow and therefore the ability to cater for additional traffic volumes.

In view of the above, it is appropriate to treat Holloway Road as falling between a local road (up to 3,000vpd) and a collector road (up to 7,000vpd).

In this case, Holloway Road and Wangara Road will experience the highest traffic volumes associated with the proposed netball centre given the location of the vehicle access points. All of the remaining roads that serve as vehicle access for the proposed netball centre are fully or partially adjacent to commercial properties and the 'environmental capacity' does not specifically apply.

A summary of the existing daily volume, the daily volume generated by the proposed netball centre and the post development volumes are presented in Table 13 below. The daily volume for Wangara Road has been estimated from the turning movement count data, with the peak hour assumed to represent 10% of the daily volume which is typical for local street environments.

Table 13: Daily Traffic Volume Assessment – 'Likley' Traffic Volume

Road	Section	Existing Volume	Development Volume	Post Development Volume
Saturday (Peak Activity) – 8am-9:30/10:30pm				
Holloway Road	Bluff Road to Miller Street	1,297 vpd	2,528 vpd	3,825 vpd
	Park Avenue to Green Parade	766 vpd	2,889 vpd	3,655 vpd
Wangara Road	Balmoral Avenue to Green Parade	350 vpd	2,889 vpd	3,239 vpd
Weekday (Evening Netball Activity) – 4pm-9:30/10:30pm				
Holloway Road	Bluff Road to Miller Street	1,651 vpd	762 vpd	2,413 vpd
	Park Avenue to Green Parade	1,115 vpd	871 vpd	1,986 vpd
Wangara Road	Balmoral Avenue to Green Parade	450 vpd	871 vpd	1,321 vpd

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Table 14: Daily Traffic Volume Assessment – ‘Sensitivity Test’ Traffic Volume

Road	Section	Existing Volume	Development Volume	Post Development Volume
Saturday (Peak Activity) – 8am-9:30/10:30pm				
Holloway Road	Bluff Road to Miller Street	1,297 vpd	3,371 vpd	4,668 vpd
	Park Avenue to Green Parade	766 vpd	3,852 vpd	4,618 vpd
Wangara Road	Balmoral Avenue to Green Parade	350 vpd	3,852 vpd	4,202 vpd
Weekday (Evening Netball Activity) – 4pm-9:30/10:30pm				
Holloway Road	Bluff Road to Miller Street	1,651 vpd	1,016 vpd	2,667 vpd
	Park Avenue to Green Parade	1,115 vpd	1,161 vpd	2,276 vpd
Wangara Road	Balmoral Avenue to Green Parade	450 vpd	1,161 vpd	1,611 vpd

In view of the above, the expected post development volumes (including the contribution from the Netball Centre) are within the adopted ‘environmental capacity’ thresholds for Holloway Road and Wangara Road.

We understand that Council is considering reducing the hours of operation for the Saturday / Sunday competition to approximately 8am-6:30pm. We have reviewed implications of the reduced traffic volumes associated with this change of operating hours in Table 15 below.

Table 15: Daily Traffic Volume Assessment – Reduced Weekend Operating Hours

Road	Section	Existing Volume	Development Volume	Post Development Volume
‘Likely’ Traffic Volumes - Saturday (Peak Activity) – 8am-6:30pm				
Holloway Road	Bluff Road to Miller Street	1,297 vpd	1,890 vpd	3,187 vpd
	Park Avenue to Green Parade	766 vpd	2,160 vpd	2,926 vpd
Wangara Road	Balmoral Avenue to Green Parade	350 vpd	2,160 vpd	2,510 vpd
‘Sensitivity Test’ Traffic Volumes - Saturday (Peak Activity) – 8am-6:30pm				
Holloway Road	Bluff Road to Miller Street	1,297 vpd	2,520 vpd	3,817 vpd
	Park Avenue to Green Parade	766 vpd	2,880 vpd	3,646 vpd
Wangara Road	Balmoral Avenue to Green Parade	350 vpd	2,880 vpd	3,230 vpd

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The reduced weekend operating hours result in reduced daily traffic volumes generally between 3,000-3,800vpd on Holloway Road. From a traffic engineering perspective, we recommend that the reduced Saturday/Sunday operating hours are adopted to reduce the daily traffic volumes.

9 Intersection Analysis

The following sections assess the capacity impacts at the key intersections in the vicinity of the subject site. The assessment reviews the existing traffic volumes and operational characteristics compared to what is anticipated to be generated by the proposed Netball Centre.

It needs to be considered what impacts the proposed development(s) have on key intersections compared to existing conditions and if there are any mitigating measures that would be required as a direct result of the proposed development.

9.1 SIDRA Modelling

Sidra Intersection 8.0 traffic modelling software has been used to model the performance of the following intersections:

- Bluff Road / Holloway Road (unsignalised)
- Wangara Road / George Street (unsignalised)
- Bay Road / George Street (unsignalised)
- Wangara Road / Reserve Road (unsignalised)
- Bay Road / Reserve Road (traffic signals)

The capacity analysis software allows estimations of key operating parameters including (but are not limited to) the following:

- **Average Delay** – in seconds for vehicles on a particular movement
- **Queue length (95th percentile)** – where 1 vehicle equates to 7m
- **Level of Service (LOS)** – Rating of intersection operation based on delay
- **Degree of Saturation** – A ratio of demand/capacity

The following table outlines the generally accepted Degree of Saturation and Level of Service thresholds for intersection analysis.

Table 16: Degree of Saturation/Level of Service Measures

Level of Service		Intersection Degree of Saturation	
		Unsignalised	Signalised
A	Excellent	<= 0.6	<= 0.6
B	Very Good	0.6-0.7	0.6-0.7
C	Good	0.7-0.8	0.7-0.9
D	Acceptable	0.8-0.9	0.9-0.95
E	Poor	0.9-1.0	0.95-1.0
F	Very Poor	>= 1.0	>= 1.0

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9.2 Capacity Analysis - 'Likely' Volumes

The following provides a summary of the SIDRA results comparing the existing conditions and the ultimate conditions with the Bayside Netball Centre operating ('likely' traffic generation).

We have assessed the following key time periods:

- **Saturday Peak** – when the proposed netball centre is expected to generate peak volumes, but traffic volumes on the surrounding road network are lower than the peak.
- **Weekday PM Peak** – when the proposed netball centre is expected to generate lower volumes, but the surrounding road network is experiencing peak volumes.

A summary of the SIDRA results for the two peak periods are presented in Table 14 and Table 14 below.

Table 17: Saturday Peak including Existing & Netball Centre Attributed Demands

Intersection	Leg	Delay		Queue Length		DoS	
		Existing	Netball	Existing	Netball	Existing	Netball
Bay Road/ George Street	Bay Rd (E)	0 sec	0 sec	0 veh	0 veh	0.26	0.26
	Bay Rd (W)	3 sec	4 sec	1 veh	2 veh	0.37	0.37
	George St (S)	15 sec	21 sec	3 veh	3 veh	0.23	0.52
George Street/ Wangara Road	George St (S)	1 sec	1 sec	0 veh	0 veh	0.08	0.08
	Wangara Rd (E)	7 sec	7 sec	0 veh	0 veh	0.10	0.11
	George St (S)	1 sec	1 sec	0 veh	0 veh	0.08	0.08
Wangara Road/ Reserve Road	Wangara Rd (W)	6 sec	7 sec	0 veh	1 veh	0.02	0.25
	Reserve Rd (S)	1 sec	1 sec	0 veh	0 veh	0.42	0.42
	Reserve Rd (N)	3 sec	3 sec	2 veh	2 veh	0.43	0.43
Bay Road/ Reserve Road	Wangara Rd (W)	15 sec	17 sec	1 veh	1 veh	0.23	0.41
	Reserve Rd (S)	49 sec	54 sec	31 veh	35 veh	0.95	0.97
	Bay Rd (E)	69 sec	56 sec	37 veh	33 veh	0.97	0.94
Bluff Road / Holloway Road	Bay Rd (W)	30 sec	45 sec	33 veh	46 veh	0.83	0.92
	Bluff Rd (S)	0 sec	3 sec	0 veh	2 veh	0.17	0.25
	Holloway Rd (E)	23 sec	33 sec	1 veh	1 veh	0.25	0.38
	Bluff Rd (N)	0 sec	1 sec	0 veh	0 veh	0.17	0.19

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Table 18: Weekday PM including Existing & Netball Centre Attributed Demands

Intersection	Leg	Delay		Queue Length		DoS	
		Existing	Netball	Existing	Netball	Existing	Netball
Bay Road/ George Street	Bay Rd (E)	0 sec	0 sec	0 veh	0 veh	0.30	0.30
	Bay Rd (W)	3 sec	3 sec	3 veh	3 veh	0.36	0.36
	George St (S)	15 sec	19 sec	1 veh	2 veh	0.29	0.38
George Street/ Wangara Road	George St (S)	1 sec	1 sec	0 veh	0 veh	0.09	0.09
	Wangara Rd (E)	7 sec	7 sec	0 veh	0 veh	0.09	0.10
	Wangara Rd (W)	6 sec	7 sec	0 veh	1 veh	0.02	0.20
Wangara Road/ Reserve Road	Reserve Rd (S)	1 sec	1 sec	0 veh	0 veh	0.31	0.31
	Reserve Rd (N)	1 sec	1 sec	1 veh	1 veh	0.50	0.50
	Wangara Rd (W)	16 sec	19 sec	1 veh	2 veh	0.36	0.52
Bay Road/ Reserve Road	Reserve Rd (S)	42 sec	42 sec	24 veh	26 veh	0.89	0.90
	Bay Rd (E)	45 sec	45 sec	39 veh	39 veh	0.91	0.91
	Bay Rd (W)	41 sec	80 sec	25 veh	40 veh	1.06	1.22
Bluff Road / Holloway Road	Bluff Rd (S)	1 sec	3 sec	1 veh	1 veh	0.16	0.23
	Holloway Rd (E)	29 sec	36 sec	1 veh	2 veh	0.35	0.44
	Bluff Rd (N)	0 sec	1 sec	0 veh	0 veh	0.22	0.23

Based on the above, the changes are minimal associated with the inclusion of the Bayside Netball Centre into this area.

It is noted that the existing intersections, particularly the Bay Road/Reserve Road intersection services a large vehicle volume during peak periods.

The signalised intersection in particular, is already operating at 'poor' to 'very poor' conditions and will continue to do so regardless of the Netball Centre being approved/refused.

This intersection should be reviewed by VicRoads to determine any changes that may be necessary to this intersection. This includes but is not limited to the following:

- Revised cycle and phase times based on most recent traffic volume data.
- Potential physical changes to the intersection including dedicated right-turn lanes, left turn slip lanes etc.
- Turn bans or two right-turn lanes from Reserve Road into Bay Road.

The other critical intersection is Bluff Road / Holloway Road, which is expected to cater for the majority of the 'entry' movements towards the proposed netball centre. Whilst the SIDRA modelling suggests that the intersection will perform under acceptable conditions, it is noted that the traffic volume data was based on a number of assumptions due to COVID-19. On this basis, it is recommended that Council undertakes additional modelling post COVID-19, when existing turning movements can be collected to confirm the SIDRA results from this assessment.

Overall, the netball centre is located in an inner suburban location where people accessing the site can choose a range of travel paths for both arrival and departures.

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9.3 Capacity Analysis - 'Sensitivity Test' Volumes

We have undertaken additional SIDRA analysis utilising the 'sensitivity test' traffic volumes, to understand the potential implications in the 'worst case' traffic volume scenario.

A summary of the SIDRA results utilising the 'sensitivity test' traffic volumes is presented in Table 19 and Table 20 below.

Table 19: SIDRA Capacity Summary Saturday Peak – 'Sensitivity Test' Analysis

Intersection	Leg	Delay	Queue Length	DoS
Bay Road/ George Street	Bay Rd (E)	0 sec	0 veh	0.26
	Bay Rd (W)	3 sec	3 veh	0.37
	George St (S)	24 sec	2 veh	0.63
George Street/ Wangara Road	George St (S)	1 sec	0 veh	0.08
	Wangara Rd (E)	7 sec	0 veh	0.12
	George St (S)	1 sec	0 veh	0.08
Wangara Road/ Reserve Road	Wangara Rd (W)	7 sec	1 veh	0.33
	Reserve Rd (S)	1 sec	0 veh	0.42
	Reserve Rd (N)	3 sec	2 veh	0.43
Bay Road/ Reserve Road	Wangara Rd (W)	18 sec	2 veh	0.48
	Reserve Rd (S)	61 sec	38 veh	0.99
	Bay Rd (E)	56 sec	33 veh	0.94
Bluff Road / Holloway Road	Bay Rd (W)	47 sec	48 veh	0.93
	Bluff Rd (S)	3 sec	2 veh	0.28
	Holloway Rd (E)	38 sec	2 veh	0.43
	Bluff Rd (N)	1 sec	0 veh	0.20

Table 20: SIDRA Capacity Summary Weekday PM Peak – 'Sensitivity Test' Analysis

Intersection	Leg	Delay	Queue Length	DoS
Bay Road/ George Street	Bay Rd (E)	0 sec	0 veh	0.30
	Bay Rd (W)	3 sec	3 veh	0.36
	George St (S)	20 sec	2 veh	0.46
George Street/ Wangara Road	George St (S)	1 sec	0 veh	0.09
	Wangara Rd (E)	7 sec	0 veh	0.10
	George St (S)	1 sec	0 veh	0.09
Wangara Road/ Reserve Road	Wangara Rd (W)	7 sec	1 veh	0.26
	Reserve Rd (S)	1 sec	0 veh	0.31
	Reserve Rd (N)	1 sec	1 veh	0.50
Bay Road/ Reserve Road	Wangara Rd (W)	19 sec	2 veh	0.57
	Reserve Rd (S)	47 sec	28 veh	0.93
	Bay Rd (E)	45 sec	39 veh	0.91
	Bay Rd (W)	80 sec	40 veh	1.22

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Intersection	Leg	Delay	Queue Length	DoS
Bluff Road / Holloway Road	Bluff Rd (S)	3 sec	1 veh	0.26
	Holloway Rd (E)	40 sec	2 veh	0.49
	Bluff Rd (N)	1 sec	0 veh	0.24

In view of the above, the 'sensitivity test' SIDRA results are generally similar to the 'likley' traffic volume results. There are no differences in the recommendations regarding intersection capacity discussed previously in Section 9.2 above.

10 Service Vehicles

10.1 Busses

It is anticipated that busses will be utilised by groups in accessing the site for certain organised competitions.

This will primarily be for school groups/interschool sports competitions.

The recommended on-site carpark includes a pick-up / drop-off area that can service bus movements.

Bus storage will occur off-site. The best location for this is along the west side of George Street adjacent to the driving range site given the wide nature of the road.

No stopping restrictions are proposed opposite the site access and egress and generally along the south side of Holloway Road to ensure exiting busses can exit to the east, as desired.

Accordingly, we are satisfied that this size bus can be accommodated on-site.

10.2 Waste Collection

The current concept plan does not show a specific waste storage area or proposed waste collection area.

We expect waste collection will occur on-site utilising standard waste collection vehicles, outside of the typical operating times for the netball centre.

On this basis, the waste vehicle will be able to utilise the empty parking spaces to facilitate waste loading.

A Waste Management Plan (WMP) should be prepared to formalise this arrangement and nominate specific waste storage and loading areas.

10.3 Emergency Service Vehicles

The proposed car parking layout can accommodate MFB, ambulance and police vehicles as required (given they are all smaller than the bus design vehicle).

Overall, we are satisfied that the carpark can accommodate emergency service vehicles, when required.

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10.4 Loading

Given the carpark will be designed to cater for buses (14.5m), we are satisfied that loading vehicles will be able to enter/exit the site in a forwards direction.

Overall, we are satisfied that any loading activities associated with the proposed development will be met on-site and all delivery vehicles will be able to enter and exit the site in a forward direction.

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11 Conclusions

Having visited the site, undertaken a car parking inventory and undertaken a detailed traffic engineering assessment the following conclusions are reached in relation to the proposed 12 court Bayside Netball Centre development (11 Holloway Road, Sandringham):

Car Parking Provision

1. The proposed netball centre is located on state government secondary school land and therefore the requirements of the Bayside Planning Scheme do not apply. In any event, the proposed use is innominate under Clause 52.06-5 of the Planning Scheme and accordingly, car parking would need to be provided to the satisfaction of the Responsible Authority.
2. On-site parking for the netball centre should be maximised and it is recommended that the on-site carpark is expanded to provide for approximately 114 car parking spaces.
3. The scheduling of netball matches should include a 'stagger' between match commencement times to reduce peak car parking demands as follows (based on 45 minute session times):
 - a. 4 Netball courts to start at commencement of session.
 - b. 4 Netball courts to start 15 mins after commencement of session.
 - c. 4 Netball courts to start 30 mins after commencement of session.
4. The peak parking demands expected with the inclusion of the above stagger times are as follows:
 - a. Saturday/Sunday (Competition):
 - i. 'Likely' Parking Demand - 216 spaces
 - ii. 'Sensitivity Test' Parking Demand – 288 Spaces
 - b. Weekday evening (Competition / Training):
 - i. 'Likely' Parking Demand - 162 spaces
 - ii. 'Sensitivity Test' Parking Demand – 216 Spaces
5. Based on the provision of 114 spaces on-site, an overflow parking demand of 48-102 spaces on weekday evenings and 102-174 spaces on Saturdays/Sundays is expected in the surrounding public parking resources.
6. To limit the impact to the adjacent residential area, it is recommended that netball centre parking demands are accommodated on 'suitable' non-residential frontages on Wangara Road, George Street and the existing carpark at the Golf Driving Range.
7. These public parking spaces have a capacity of 151 spaces, with existing availability of 107-144 spaces. On this basis, there is sufficient capacity within the 'suitable' parking spaces to accommodate the 'likely' and weeknight 'sensitivity test' overflow demands associated with the netball centre.
8. However, the weekend 'sensitivity test' scenario would result in parking extending further into Wangara Road, George Street, Brixton Street and potentially Talinga Road. This would result in long walking distances for netball patrons. It is recommended that Council monitor the extent of overflow parking and if parking extends as predicted for the 'sensitivity test' scenario, consider the provision of additional parking on the former golf driving range site (closer proximity to the netball centre).

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9. To ensure vehicles associated with the netball centre utilise the 'suitable' parking spaces it is recommended that the following parking restrictions are installed in the local residential areas:
 - a. 'Permit Zone 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' one side
 - b. '1P 4pm-9:30pm Mon-Fri, 8am-6:30pm Sat-Sun' other side
 - c. Existing restrictions outside of these times would be retained
10. Council should monitor on-street parking demands in the area following the opening of the Netball Centre as consider the following amendments if required:
 - a. Potential inclusion of additional Permit Zone parking restrictions if parking availability is an issue within the residential streets.
 - b. Potential modifications of the days/times that the restrictions apply.
11. 'No Stopping' restrictions are recommended along the south side of Holloway Road to maintain two-way traffic flow and allow bus access. Additional 'No Stopping' restrictions are recommended on the south side of Wangara Road opposite the on-site carpark access to facilitate bus egress.

Car Parking Design

12. A concept plan has been prepared for a recommended on-site carparking arrangement catering for 114 spaces as follows:
 - a. One-way configuration (eastbound) with entry via Holloway Road and exit via Wangara Road.
 - b. An access control gate is included on the carpark access points to prevent access outside of the operating hours of the netball centre. It is recommended that Council monitor traffic volumes post development and if 'through' traffic utilising the carpark from Holloway Road to Wangara Road is identified, consider additional traffic management in the carpark and/or on Holloway Road / Wangara Road.
 - c. The entry via Holloway Road designed as left in only to encourage access via Bluff Road and Holloway Road.
 - d. 60 degree parking on both sides of the aisle to reinforce the one-way restriction.
 - e. A shared bus / patron pick-up / drop-off zone in a parallel arrangement adjacent to the site entry.
 - f. Traffic management in the form of road humps at regular intervals.
 - g. A footpath along the northern boundary of the carpark connecting the Holloway Road / Wangara Road footpath with the proposed centre entry.
13. A total of 3 accessible car spaces are provided for the development as required by the NCC (BCA).
14. A signage and linemarking plan should be prepared to formalise the carpark design.

Bicycle Parking

15. Whilst the proposal is not subject to the requirements of the Bayside Planning Scheme, Clause 52.34 has been utilised as a guide for the provision of bicycle parking.
16. The proposed netball centre is expected to generate a total demand for 36 bicycle parking spaces including 28 visitor spaces and 8 staff spaces.
17. It is recommended that visitor spaces are provided via rails in the vicinity of the centre entry and staff spaces are provided internally within a service area for the proposed stadium.

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



Pedestrian Accessibility

18. A portion of patrons will park within the public parking resources in the surrounding road network and walk to the proposed netball centre.
19. This results in pedestrian demands, particularly towards the east of the centre crossing George Street and Wangara Road.
20. During peak Saturday activity, pedestrian movements between 56-264 pedestrians per hour are estimated on the north, south and west legs of the George Street / Wangara Road intersection.
21. These estimated pedestrian movements in combination with the traffic volumes meet the warrants for the provision of zebra crossings (without flashing lights).
22. On this basis, the following pedestrian upgrades are recommended:
 - a. Raised zebra crossing with kerb extensions on the west Wangara Road leg.
 - b. Raised zebra crossings without kerb extensions on the north and south George Street legs.
 - c. Reduction of the speed zoning along George Street from 60km/h to 50km/h
 - d. Road humps (speed cushions to accommodate truck movements) on the north and south approaches of George Street to further reinforce a slow speed environment in the vicinity of the crossings.
23. We note that the pedestrian volumes are based on a number of assumption and therefore the warrants for the implementation of zebra crossings cannot be categorically demonstrated to VicRoads at this point in time. On this basis, a practical approach to the implementation of the above treatments is to install the platforms initially without the zebra crossing and undertake pedestrian counts once the netball centre is operating, to confirm the requirements for zebra crossings.

Traffic Impacts

24. The use is assessed as generating peak hour traffic volumes as follows:
 - a. Saturday/Sunday (Competition):
 - i. 'Likely' Peak Hour Traffic Volume – 432 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 576 vehicles per hour
 - b. Weekday PM Peak (Competition / Training):
 - i. 'Likely' Peak Hour Traffic Volume – 324 vehicles per hour
 - ii. 'Sensitivity Test' Peak Hour Traffic Volume – 432 vehicles per hour
25. The distribution of traffic to/from the proposed netball courts will occur with all entry movements via Holloway Road and all exit movements via Wangara Road due to the proposed one-way arrangement within the on-site carpark.
26. An assessment of daily traffic volumes has identified the following:
 - a. Whilst Holloway Road is classified as a local road, its land use and traffic flow arrangements are best classified between a local road (up to 3,000vpd) and a collector road (up to 7,000vpd).
 - b. Analysis of the of likely daily volumes associated with the proposed weekday operating hour (4pm-9:30/10:30pm) and weekend operating hours (8am-9:30/10:30pm) indicate the following daily traffic volumes:

Holloway Road:

 - i. Saturday – 3,655-4,668vpd
 - ii. Weekday – 1,986-2,667vpd

Wangara Road:

Traffic Impact Assessment Report

Bayside Netball Centre – 11 Holloway Road, Sandringham



- i. Saturday – 3,239-4,202vpd
 - ii. Weekday – 1,321-1,611vpd
 - c. These daily volumes generally fall within the adopted environmental capacities for the surrounding road network.
 - d. An assessment of reduced weekend operating hours has been undertaken for 8am-6:30pm. The daily traffic volumes expected under this scenario are as follows:
 - Holloway Road:**
 - i. Saturday – 2,926-3,817vpd
 - Wangara Road:**
 - i. Saturday – 2,510-3,230vpd
 - e. It is recommended to adopt the reduced weekend operating hours (8am-6:30pm) to reduce the daily traffic volumes on Holloway Road and Wangara Road.
27. The level of traffic generated based on the distribution assessment can be accommodated by the surrounding road network without causing an unreasonable impact on safety or operational efficiencies within the precinct.
28. The SIDRA intersection analysis confirms that the anticipated traffic generated by this Netball facility can be accommodated by the surrounding road network, without significant changes from current delays incurred and vehicle queue lengths that occur.
29. The intersection of Bay Road / Reserve Road operates over capacity in the existing conditions, with existing deficiencies. The traffic volumes generated by the netball centre through this intersection are relatively minor. It is recommended that Council liaise with VicRoads (DOT) to:
- a. Review cycle and phase times based on most recent traffic volume data.
 - b. Potential physical changes to the intersection including dedicated right-turn lanes, left turn slip lanes etc.
 - c. Turn bans or two right-turn lanes from Reserve Road into Bay Road.
30. The intersection of Bluff Road / Holloway Road is expected to cater for the majority of the 'entry' movements towards the proposed netball centre. Whilst the SIDRA modelling suggests that the intersection will perform under acceptable conditions, it is noted that the traffic volume data was based on a number of assumptions due to COVID-19. It is recommended that Council undertakes additional modelling post COVID-19 when existing turning movements can be collected, to confirm the SIDRA results from this assessment.

Service Vehicle Access

- 31. The layout of the carpark has been designed to accommodate busses up to 14.5m long.
- 32. Emergency service vehicles can manoeuvre through the site, as required, given that they are smaller than the bus design vehicle.
- 33. Waste collection can occur on-site for vehicles up to 12.5m (HRV) in length which is satisfactory from a traffic engineering perspective. A WMP should be prepared to formalise waste collection arrangements.
- 34. All loading activities will be accommodated on-site.

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Summary

Having undertaken all tasks necessary to adequately assess the traffic engineering impacts of the 12 Proposed Netball Courts at Bayside Netball Centre, we are satisfied that the proposed development is satisfactory.

There are no reasons why the proposed development should not proceed, subject to the recommendations in this report.

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix A

Automatic Traffic Counts

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix B

Turning Movement Counts

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix C

Parking Surveys

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix D

Recommended On-site Carpark – Concept Plan

QUANTUM TIAR (Bayside Netball Centre - V2D)

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix E

Recommended Parking Restrictions

QUANTUM TIAR (Bayside Netball Centre - V2D)

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix F

Post Development – Traffic Volume Diagrams

Traffic Impact Assessment Report
Bayside Netball Centre – 11 Holloway Road, Sandringham



Appendix F

SIDRA Results

Sandringham Outdoor Netball Project

Acoustic Report

Prepared for: Bayside City Council

Attention: Sara Townsend

Date: 22/02/2021

Prepared by: Saliha Kiraz

Ref: 301150136

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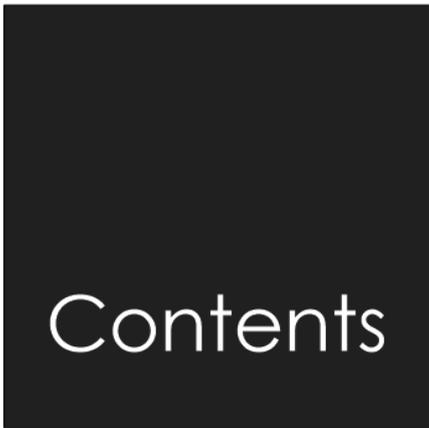
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Revision

Revision	Date	Comment	Prepared By	Approved By
2	22/02/2021	Issued for comments	Saliha Kiraz	André Verstappen
1	19/02/2021	Issued for comments	Saliha Kiraz	André Verstappen



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Design with **community** in mind

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Design with **community** in mind

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1. Introduction

Stantec have been engaged by Bayside City Council to provide acoustic services for the proposed outdoor netball courts associated with the Sandringham College Community Sport Facility located on Holloway Road.

This report presents the noise emission design targets applicable to the project and assesses the likely noise impact of the proposed outdoor netball courts on nearby residential land uses. Acoustic design targets presented in this report are based upon the EPA Publication 1254 October 2008 Noise Control Guidelines, World Health Organization guidelines and Stantec experience.

The objectives of this report are to:

- Establish relevant environmental noise targets to limit noise impact from the project upon sensitive receivers.
- Identify critical noise sources potentially affecting the residences.
- Evaluate the likely noise impact from these noise sources on the nearest sensitive receivers.
- Provide preliminary mitigation measures where noise emissions from the future Netball courts are predicted to exceed established noise emission targets.

This document has been prepared considering Sandringham College Community Sport Facility Schematic Design Report 2021 prepared by LAW Architects (dated 15/01/21).

It is noted that Stantec has received an acoustic report for this project prepared by Waveform acoustics on behalf of the residents of 223 Bay Rd, however the scope of the Stantec report does not include a formal peer review of that document.

The acoustic terms used in this report are presented in Appendix A.

This report relates to this particular project and must not be applied to any other project without consultation with Stantec. Project designs and conditions can vary between projects causing significant variations in acoustic performance and relevant subsequent advice to one project may not apply to another.



2. Project Overview

2.1 Project description

The proposed Netball facility is to be located at the community sport facility near Sandringham College, North of Holloway Road. The facility will consist of 12 netball courts, 3 of them indoors, with open air Covered Outdoor Learning Areas. The proposed facility is split into 2 sections, Project A and Project B.

Figure 1 below provides an overview of the currently planned layout for the proposed development. The nine outdoor courts associated with Project B (as highlighted grey in Figure 1) are considered in the acoustic assessment provided within this report. Assessment of noise associated with activity from the other elements of the broader project are beyond the scope of this document and are not discussed.

Figure 1 Layout of the proposed development

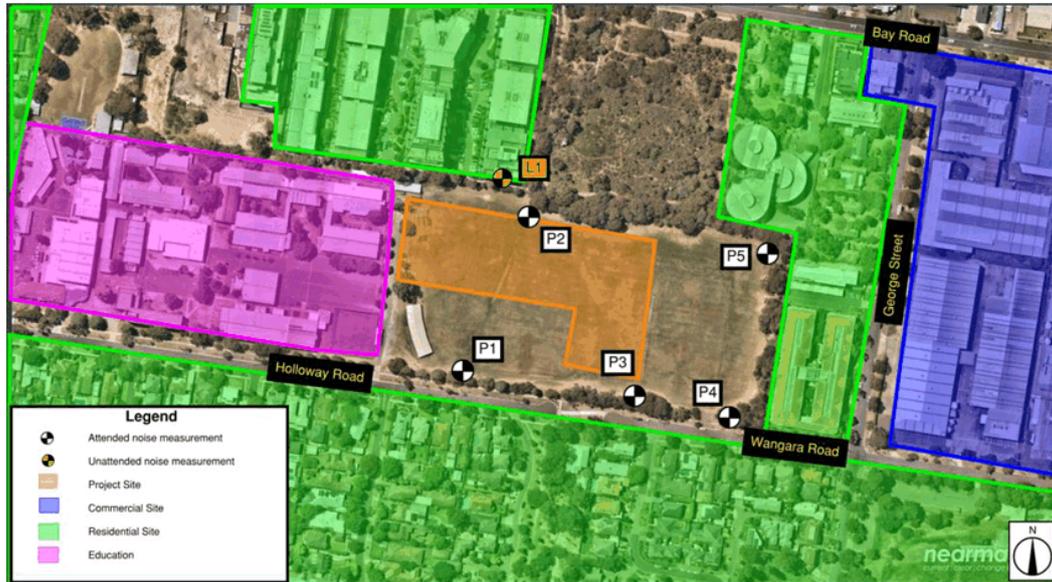


Source: Law Architects Schematic design report

2.2 Surrounding area and sensitive receivers

Overlays showing the surrounding area composition can be seen in Figure 2. Residential receivers are shown in green, commercial sites are marked in blue overlay, and Sandringham College is marked pink. The approximate extent of the proposed project site is shown in orange. Attended and unattended measurement locations are also noted within the figure.

Figure 2 Aerial view of the site



Source: Nearthmaps/Stantec

As Figure 2 shows, the Project site is bounded by:

- Residential buildings (6 to 8 levels) to the north of the site.
- Holloway Rd with existing residential buildings (1-2 storeys) beyond to the south of the site.
- Sandringham College to the west of the site.
- Residential buildings (1 to 3 levels) to the east of the site.

It is noted that apartments immediately to the north of the site are multistorey buildings overlooking the proposed site. Due to the aspect of these buildings and the project site layout, these properties are considered the most sensitive receivers to activity noise from the proposed outdoor netball courts.

2.3 Key Acoustic Issues

The key acoustic issues associated with the project are as follows:

- External noise associated with the future activity of the proposed outdoor netball courts should not adversely affect the residential receivers located along Holloway Rd, George St and Bay Rd.

2.4 Hours of Operation

It is understood that the outdoor netball courts will be operating during the following hours:

- Weekdays 4pm to 8.30pm
- Saturday 8am to 8pm
- Sunday 9am to 4pm
- School holidays 9am to 8.30pm (weekdays only assumed)
- Tournament days 8am to 6pm (5 instances per year)

Consequently, the above hours have been considered in the assessment detailed in this report.

3. Noise Survey

An environmental noise survey was conducted around the proposed development site as per VIC EPA Guidelines. Stantec undertook attended and unattended noise measurements.

The noise survey was undertaken to characterise the noise environment around the site and provide acoustic recommendations for amenity. The following equipment was used for the noise surveys:

- Sound Calibrator, Pulsar Model 105, S/N 72910.
- NTI XL2 Noise logger, S/N A2A-14215-E0
- B&K Sound Level Meter Model 2250, S/N 86300.

All equipment was calibrated before and after the measurements and no significant drift was found. Data affected by rainfall has been excluded from the calculations and it's shown as shaded grade in the logger graph in Appendix B.

3.1 Noise measurement locations

Attended and Unattended noise measurements were conducted between 5 and 10 February 2021 in order to determine the existing background noise levels present at the site and at nearest sensitive receivers. The noise survey locations are presented in Figure 2 and correspond to:

L1: Noise logger installed on second floor balcony of 265/223 Bar Road apartment overlooking the project site. This is considered a suitable location for assessing noise at the most sensitive receiver.

P1-P5: Attended short term noise measurement locations to characterise various locations around the future site.

3.2 Attended noise survey results

Attended noise measurements were conducted on two days at several locations around the future project site as seen as Figure 2. The noise values presented in this section are intended to aid in characterisation of the noise environment around the site. Table 1 presents the results of attended short-term ambient (L_{Aeq}) and background (L_{A90}) noise levels, and observations of the soundscape around the site.



Table 1 Summary of short-term attended measurement- Overall levels

Location	Date & Time	Duration [mm:ss]	Ambient Noise Level L _{Aeq,t} dB(A)	Background Noise Level L _{A90,t} dB(A)	Noise ambient comment
P1	05/02/2021 10:41am	09:29	54	49	Fresh wind, birds, people pass by
P2	05/02/2021 12:08pm	10:02	51	43	Fresh wind, crickets, bird, distant construction noise (excluded)
P3	05/02/2021 12:24pm	07:44	50	44	Fresh wind, birds, wind, leaves
P4	10/02/2021 12:39	10:02	44	38	Light wind, bird, leaves, light-no traffic
P5	10/02/2021 12:50	00:10:02	45	41	Light wind, birds, crickets and leaves

3.3 Unattended noise survey results

Unattended noise measurements were taken from 5th February to 10th February at 265/226 Bay Road, Sandringham, second floor balcony facing the site. The measurement location is provided in Figure 2 and Figure 3. A summary of the unattended noise measurements are provided shown in Table 2 and in the logger trace in Appendix B.

Figure 3 Measurement location



Source: Stantec

Table 2 Summary of unattended long-term ambient (overall LAeq,period) and background (Average LA90,15min) noise levels

Day	Period ¹	Ambient Noise Level LAeq,period in dB(A)	Background Noise Level Average LA90,15min over time period in dB(A)
Friday 05/02/21	Day (partial): 12pm – 6pm	52	41
	Evening: 6pm – 8.30pm	51	43
Saturday 06/02/21	Day: 8am – 1pm	51	39
	Evening: 1pm – 6pm	54	41
	Night: 6pm – 8pm	51	39
Sunday 07/02/21	Evening: 9am – 4pm	51	44
Monday 08/02/21	Day: 9am – 6pm	50	42
	Evening: 6pm – 8.30pm	47	41
Tuesday 09/02/21	Day: 9am – 6pm	49	42
	Evening: 6pm – 8.30pm	53	44
Average	Day	51	41
	Evening	52	42
	Night	51	39
	All periods	51	42

Note 1: Noise periods have been extracted from EPA State Environment Protection Policy No. N-1 (SEPP N-1). While SEPP N-1 is not applicable to this assessment, the noise periods defined within are considered appropriate for application to this project. Details of the periods are provided in Table 3 below.

Table 3 SEPP N-1 applicable time periods for noise limit selection

Time Period for Noise Limits Selection	Time
Day	07.00 am to 18.00 pm Monday to Friday 07.00 am to 13.00 pm Saturdays
Evening	18.00 pm to 22.00 pm all days 13.00 pm to 18.00 pm Saturdays 07.00 am to 18.00 pm Sundays and Public Holidays
Night	22.00 pm to 07.00 am all days



4. Acoustic Design Principles and Noise Criteria

It should be noted that there is no mandatory EPA noise criterion applicable to activity noise from a sport facility upon sensitive receivers. In the absence of specific criteria, design targets for limiting noise emission from the proposed development have been established to minimize the risk of complaints from the sensitive receivers. Additionally, based on current information, playback of music at the outdoor courts is not planned. Consequently, no assessment of music noise emissions for compliance with SEPP N2 has been conducted.

4.1 VIC EPA Publication 1254 October 2008-Noise Control Guidelines

The Victoria EPA define guidelines for noise control in the Publication 1254 October 2008. Section 13 of this document covers noise control for Public Address (PA) systems associated with sporting activities. This document states the following:

'(...)the environmental objective should be noise intrusion of not more than 5 dB(A) above background at any affected residences or other noise sensitive locations. Corrections for tonal or impulsive noise usually are not necessary, and further tolerance of up to 5 dB(A) may be allowed for unique or very infrequent activities with recognised social merit. Amplifier level settings must be minimised whilst ensuring conveyance of information to audience or participants is adequate. Restrictions on the times of use of public address systems should be considered. Noise from PA systems must not be audible inside a residential dwelling during normal sleeping hours.'

Consequently, based on the results from the noise survey and considering an additional +3dB allowance to account for the social benefits of the proposed development, the design target applicable to the PA associated with the project is proposed as per below:

Table 4 Applicable ambient noise target to the project

Period	Background Noise Level Average $L_{A90,15min}$ over time period in dB(A)	Allowance above the existing background	Proposed design target $L_{Aeq,15min}$ dB(A) ¹
Day	41	+8	49
Evening	42	+8	50
Night	39	+8	47

Note 1: Publication 1254 does not prescribe the duration over which values of L_{Aeq} should be assessed. Stantec proposes a 15-minute period is suitable to capture PA events (one quarter of a netball game) for evaluation of all present noise sources and to provide a reasonable overall noise level assessment.

In the absence of additional guideline for noise impact for other noise sources associated with a sport facility, the above design target for noise has been extended to all noise sources from the proposed netball courts.

4.2 World Health Organization (WHO) Europe-Night Noise Guidelines for Europe 2009

Considering the proposed hours of operation of the netball courts, it is reasonable to consider potential noise impact of the development in regard to sleep disturbance for the nearby receivers. This is relevant only for game operations starting before 9am, particularly on weekends (Saturday only). While the only 'night period' operation occurs on Saturday between 6pm and 8pm, it is reasonable to anticipate that some residents may still be sleeping at 8am.



The World Health Organization (WHO) Europe-Night Noise Guidelines for Europe 2009 provides guidelines for noise control especially in relation with sleep disturbance. The document refers to the Guidelines for community noise (WHO, 1999) which evaluates the impact of night-time exposure to noise and sleep disturbance:

"If negative effects on sleep are to be avoided the equivalent sound pressure level should not exceed 30 dBA indoors for continuous noise. If the noise is not continuous, sleep disturbance correlates best with L_{Amax} and effects have been observed at 45 dB or less. This is particularly true if the background level is low. Noise events exceeding 45 dBA should therefore be limited if possible. For sensitive people an even lower limit would be preferred. It should be noted that it should be possible to sleep with a bedroom window slightly open (a reduction from outside to inside of 15 dB). To prevent sleep disturbances, one should thus consider the equivalent sound pressure level and the number and level of sound events. Mitigation targeted to the first part of the night is believed to be effective for the ability to fall asleep."

However, the document recognises that in the light of more recent studies the thresholds are now known to be lower than L_{Amax} of 45 dB at the bed head for a number of effects. Furthermore, the document established a threshold of 42dBA L_{Amax} inside for awakening during the night and/or too early in the morning.

Considering a 10dB reduction between façade incident level and internal noise level from an open window, a design target of 52dBA L_{Amax} at the façade of the residences is proposed for impulsive noise. Compliance with such design target is anticipated to address sleep disturbance at the nearby receivers for early morning games. It is noted that in the event that the façade windows/doors are closed, the internal noise levels are likely to be even lower.

4.3 AS2107:2016 Internal Noise levels

Internal noise levels are subject to the guidelines outlined in Australian Standard AS2107-2016: Recommended design sound levels and reverberation times for building interiors. The internal noise levels provided in AS2107:2016 are intended for steady-state or quasi-stead noise sources. This includes control of continuous intrusive noise through the building envelope but excludes impulsive noise.

Table 5 AS 2107 Internal Acoustic Design Requirements

Type of Occupancy / Activity	Recommended Design Sound Level Range, $L_{eq, dB(A)}$
Living areas	30 to 40
Sleeping areas (night-time only)	30 to 35

Considering a maximum of 40dBA inside a living space as per the table above and a 10dB reduction between facade incident noise levels and internal noise levels for an open window, 50dBA $L_{Aeq,T}$ should be targeted at the façade of the receivers to maintain the recommended internal noise level to living areas

Compliance with the criteria presented in Section 4.1 will automatically provide compliance with the criterion presented above.

Due to the proposed operating hours of the facility, steady-state noise exposure during night-time is not applicable and sleep arousal is addressed with the L_{Amax} criterion in Section 4.2.



4.4 Summary of the design targets applicable to the project

Based on the noise criteria presented above, the following design targets have been applied to the project:

Table 6 Proposed acoustic design targets for the project

Noise Character	Proposed Criterion (Assessed at the façade of the nearest receivers)	
Ambient noise levels	Day	49 dB(A), $L_{Aeq,15min}$
	Evening	50 dB(A), $L_{Aeq,15min}$
	Night	47 dB(A), $L_{Aeq,15min}$
Impulsive Events	Between 10pm – 9am	52 dB(A) L_{Amax}

5. Environmental Noise Assessment

5.1 Noise Sources from the future netball courts

Following information provided by the client and considering the proposed arrangement of the new netball outdoor courts, the receivers are predicted to be acoustically exposed to the following noise sources:

- Impulsive events:
 - Whistling from the referee
 - Sirens at the start and end of games
- Ambient noise levels:
 - Public Address (PA) system
 - General noise from voices of players and spectators
 - Whistles and sirens

Whistles and sirens are by nature impulsive and short events. The repetitions of occurrences of such events during use of the facilities are, on average, also contributing to the overall ambient noise emissions from the proposed development. Therefore, they have also been considered as noise sources for ambient noise levels with assumptions made on the durations and number of occurrences.

Ambient noise levels should be assessed against the design target established for ambient noise levels whereas impulsive events should be compared with noise criteria to prevent sleep disturbance in terms of L_{max} .

For the purpose of the assessment, a number of reasonable assumptions in relation to the noise sources listed above has been made. It should be noted that a conservative approach has been taken for these assumptions, in order to consider a robust case. These assumptions are presented for each noise source in the sections below.

5.1.1 PA System

The following assumptions has been made for the PA system:

- One bollard speaker will be located adjacent to either end of the shelters (i.e. two bollards per shelter) situated next to each court, at a height of 0.9m above local ground level.
- Each bollard speaker presents an omni-directional sound source with equal noise emission in all directions.



- The sound power level of each PA loudspeaker has been calibrated to achieve on average L_p 61dB(A) on all courts, at a height of 1.6m. Such a sound pressure level, being 10dB above the existing ambient noise level, is considered as sufficient to be clearly audible for all players. A sound power of 90dB(A) with a spectrum shape equivalent to a male (worst-case) normal vocal effort has been used to satisfy the above and is consistent with "normal vocal effort" according to ISO 9921-1.
- The PA will operate for 10% of the time during the hours of operation.

5.1.2 Siren

It is understood that the primary function of the siren is to alert the referees to start and end of game quarters. The following assumptions have been made for the siren:

- The siren will run through the same bollard speakers as the PA system and will be subject to the same output levels as the PA system.
- Each court will be served by the two (2) bollard loudspeakers associated with the closest courtside shelter and pairs of bollards operate independently.
- The sound power level of the siren loudspeakers has been calibrated to achieve no less than L_p 61dB(A) on each court, at a height of 1.6m with the closest pair of bollard loudspeakers operating. Such a sound pressure level being 10dB above the existing ambient noise level is considered as sufficient to be audible for all players and will present a higher signal level for referees located closer to the bollards. A sound power of 91dB(A) with a flat spectrum signature has been used to satisfy the above.
- The siren will play 8 times per hour, once for the start and stop of each game's quarter.

5.1.3 Noise from voices of players and spectators

Predictions of the likely noise emissions due spectators located at the spectator viewing area and players on courts have been conducted based on the methodology described in technical paper 'Predictions of Noise from Small to Medium Sized Crowds' (M.J. Hayne , J.C. Taylor, R.H. Rumble and D.J. Mee) and a number of reasonable assumptions:

- 30 spectators, and 5 players per court, talking simultaneously
- All courts are active for the entirety of the operating hours

The above has been used to model horizontal area sources at the spectator viewing area and on each court at a height of 1.6m above ground level.

5.1.4 Whistles

The following assumptions has been made for the whistling from the referees:

- One whistle at a time will occur.
- As a worst case the referee will be located adjacent to the closest netball court to the receivers.
- 30 whistling events per 15 minutes, per court, will occur

One whistle has been modelled as an omnidirectional point source located adjacent to the closest court to the receivers at a height of 1.6m above ground level.

The noise emission level from a whistle can vary depending on the type of whistle and the strength of blow. Reference is made to noise emissions data from Table 4 given for various types of whistles and blown at low, moderate and high strength. The loudest measured whistle (ACME Thunderer) presents sound pressure levels of 91dBA, 88dBA and 77dBA at 10m and has been used in the assessment as a worst case to provide a conservative approach. To account for the strong tonal character of the whistle, a spectrum shape concentrating most of the spectral energy in the 2k and 4kHz octave bands has been used.



Table 7 Measured Noise levels of various whistle blows

Description of Noise Source	Distance from source	Measured L _{Amax} dBA
ACME Tornado MUGA Peas-less Whistle blown with low strength	10m	77
ACME Tornado MUGA Peas-less Whistle blown with medium strength	10m	85
ACME Tornado MUGA Peas-less Whistle blown with hard strength	10m	87
ACME Thunderer Official Referee Whistle blown with low strength	10m	80
ACME Thunderer Official Referee Whistle blown with medium strength	10m	88
ACME Thunderer Official Referee Whistle blown with hard strength	10m	91
Sifflet Whizzball Hand Held Whistle blown with low strength	10m	61
Sifflet Whizzball Hand Held Whistle blown with medium strength	10m	66
Sifflet Whizzball Hand Held Whistle blown with hard strength	10m	77

Source: Acoustic Dynamics report, *Churchill Place Courts Project 2823*

An adjustment of +3dB to account for the impulsive nature of the whistle has been used in the assessment of the ambient noise emissions from the site.



5.2 Noise Modelling

Further to the information above, Stantec has conducted noise modelling and calculations to determine predicted noise emissions levels at the nearest sensitive receiver's location resulting from the use of the proposed outdoor netball courts.

5.2.1 Model Considerations

To provide accurate noise emission predictions for the proposed facility, a 3D acoustic model of the facility and surrounding areas was created in acoustic modelling software package Cadna-A. The 3D model provides accurate site and equipment layouts relative to the various noise sensitive receivers, along with atmospheric effects, acoustic screening provided by built structures, and local topography.

Noise emission levels as discussed in Section 5.1 have been used as the input for the noise model.

Figure 4 below provides a snapshot of the facility as per current design. Surrounding sensitive receiver structures are shown in the background. Noise data for the various noise sources has been included in the model, along with their locations and the facility envelope structure. Point noise sources are indicated as blue crosses in the figures below, blue rectangles are horizontal area sources and the spheres indicate noise receivers at the residences or on the proposed development site as used for calibration of the model.

Figure 4 Cadna-A noise model - 3D View



Source: CadnaA/Stantec

5.2.1 Predicted noise levels – No mitigation treatment

Predicted noise levels due to activity occurring at the proposed netball courts are presented in Table 8 below for various noise sources. The sound pressure levels $L_{Aeq,15min}$ from impulsive events like whistles and sirens have been calculated based on the impulsive noise levels L_{Amax} , averaged over a 15min period, for a number of occurrences of the event as per assumptions detailed in section 5.1.



Table 8 Predicted noise levels due to the proposed netball courts at the nearest receivers

Noise Source	Predicted noise Level at receivers $L_{Aeq,15min}$ or L_{Amax} (dBA)	Design target $L_{Aeq,t}$ or L_{Amax} (dBA)	Exceedance
Extended events	$L_{Aeq15min}$ at the façade of the receivers		
PA ¹	47	Day 49 Evening 50 Night 47	-2 -3 0
Spectators and players	58	Day 49 Evening 50 Night 47	9 8 11
Whistle ²	69	Day 49 Evening 50 Night 47	20 19 22
Siren ³	39	Day 49 Evening 50 Night 47	-10 -11 -8
All combined	69	Day 49 Evening 50 Night 47	20 19 22
Impulsive events	L_{Amax} at the façade of the receivers (10pm – 9am)		
Whistle:			
• 91dBA @ 10m	82	52	30
• 88dBA @ 10m	79		27
• 77dBA @ 10m	68		16
Siren	56	52	4
Whistle +Siren			
• 91dBA @ 10m	82	52	30
• 88dBA @ 10m	79		27
• 77dBA @ 10m	68		16

Note 1: Noise levels for the PA are based on the PA operating for 10% of the assessment period time. The instantaneous levels at the façade during PA use will be up to 10 dB higher.

Note 2: Based on loudest whistle type (ACME Thunderer) blown with hard strength and 30x 0.5 second events in a 15 minute period (all courts).

Note 3: Based on 2x 3 second siren soundings in a 15 minute period (all courts)



As seen in Table 8, the noise emissions associated with the use proposed netball courts are predicted to be exceeding the established design targets. The greatest contributors to exceedance are whistles and voices from players and spectators.

Noise from all considered noise sources are anticipated to be audible at the nearest receivers and present a high risk of disturbance at these locations. Additionally, impulsive events from whistles are expected to cause sleep disturbance for games occurring early on Saturday morning.

These results indicate that the noise emissions resulting from the use of the proposed netball courts are predicted to adversely affect the nearest receivers and mitigation measures should be implemented.

5.3 Mitigation Measures & Recommendations

5.3.1 Voices from Players and Spectators

The only methods for reducing impact of voices from a sporting venue is to provide increased distance separation between the source of noise and sensitive receivers or introduce acoustic barrier elements between the source and receiver.

Due to the arrangement of the site and height of the nearest sensitive apartment buildings along Bay Road, mitigation by installation of a noise barrier is not a practical solution as the barrier would be required to span a significant height to produce any meaningful shielding (>10m).

Additional distance separation would only be possible through rearrangement of the site plan, and this solution alone is unlikely to reduce noise emission levels sufficiently to achieve the proposed noise emission criteria.

5.3.2 PA System and Siren

Noise emission from the PA and siren systems could be controlled through re-selection of loudspeaker type and installation of a noise limiter.

Bollard speakers present an equal dispersion of sound in all directions. Alternative loudspeaker types (e.g. horn speakers) can be selected to present a more directional sound emission pattern which reduces noise to areas behind the speaker location. Additionally, noise limiters can be installed to control the maximum output of loudspeakers, and if necessary, process the signal to reduce low frequencies which propagate further and are less easy to direct away from sensitive locations.

While the current PA and siren emission levels achieve compliance for ambient levels over a 15 minute period, it is noted that instantaneous noise levels at the nearest receivers during PA use will result in higher noise levels which may result in disturbance to the residential receivers.

It is recommended that a combination of noise limiter installation, selection of PA loudspeaker type, and strategic location of loudspeakers should be employed to achieve the design criteria at all effected residential receivers. It is expected that appropriate consideration of these variables will enable a functional PA system at the venue while minimizing disturbance to residents.

5.3.3 Whistles

It is clear from data provided within Table 7 that selection of whistles can significantly reduce the noise emission from whistle events. As it is unreasonable to assume that referees could be expected to consistently produce low strength whistle output, selection of a quieter whistle type (e.g. Sifflet Whizzball Hand Held) is recommended to most effectively reduce impact from whistle events. Management controls to ensure use of quieter whistles at the site are recommended to this end.

It is highlighted that selection of a quieter whistle will not currently result in compliance for ongoing noise or impulsive noise at the proposed site.

5.3.4 Hours of operation

To avoid potential sleep disturbance events, it is recommended that the operating hours of the venue be altered so no games begin before 9am (currently only Saturday morning and tournament days). This would remove the impulsive noise (sleep disturbance) criteria. It is noted that in the event that the Saturday games finish by 6pm, the nighttime criteria will no longer be required.



5.3.5 Site layout

As mitigation of whistle noise and voices from players and spectators cannot be addressed through traditional means (noise barrier) with the current site layout, it is suggested that to achieve the proposed design criteria at residential receivers the site would require rearrangement to provide the following conditions:

- Indoor court buildings moved to the north-west of the proposed site to provide screening of the multi-storey apartment buildings on Bar Road from the outdoor netball courts.
- Location of outdoor courts central to the site location to keep distance separation from residences across Holloway Road and Wangara Road.
- Installation of a noise barrier to the south of the outdoor courts to protect residential receivers across Holloway Road and Wangara Road.

6. Conclusion

An acoustic assessment for the proposed outdoor netball facilities, to be located at the current site of Sandringham sports facility, East of Sandringham College, has been conducted to evaluate the potential noise impact associated with operation of the facilities upon the adjacent residential receivers.

No mandatory noise emission criteria are applicable to activity noise from a sport facility upon sensitive receivers. In the absence of specific criteria, design targets for limiting noise emission from the proposed development have been established to minimize the risk of disturbance to sensitive receivers. Design targets are presented following recommendations in EPA Publication 1254 for PA systems, WHO guidelines for sleep disturbance, and are based on the results of a noise survey exercise undertaken on site.

An assessment of the likely noise impact of the outdoor netball courts upon sensitive receivers has been conducted with the use of a noise model. The assessment is based on a number of assumptions detailed in this report corresponding to a conservative approach.

Results from the noise model indicate exceedance above the stated design target, inducing risk of disturbance for the occupants of the adjacent receivers if no acoustic mitigation is carried out.

With the present arrangement of the proposed site and aspect of overlooking multi-storey apartment buildings along the northern site boundary, limited mitigation measures are possible:

- Installation of an acoustic barrier is not practical to protect residents to the north due to the required height of the barrier (>10m)
- PA and siren noise can be controlled to achieve the proposed criteria through appropriate equipment selection, installation of noise limiters, and considered location of PA loudspeakers.
- Whistle noise can only be controlled as far as whistle type, and will not achieve the proposed criteria even with a quieter whistle selection.
- Voices from players and spectators cannot be mitigated through traditional means without rearrangement of the site layout.

To achieve compliance to the proposed noise emission criteria, it is Stantec's opinion that the site layout would require rearrangement to present:

- Indoor court buildings moved to the north-west of the proposed site to provide screening of the multi-storey apartment buildings on Bar Road from the outdoor netball courts.
- Location of outdoor courts central to the site location to keep distance separation from residences across Holloway Road and Wangara Road.
- Installation of a noise barrier to the south of the outdoor courts to protect residential receivers across Holloway Road and Wangara Road.



Appendix A Glossary of Acoustic Terms

Term	Definition
Adverse Weather:	Weather conditions that affect noise (wind and temperature inversions) that occur at a particular site for a significant period of time. The previous conditions are for wind occurring more than 30% of the time in any assessment period in any season and/or for temperature inversions occurring more than 30% of the nights in winter).
Acoustic Barrier:	Solid walls or partitions, solid fences, earth mounds, earth berms, buildings, etc. used to reduce noise.
Ambient Noise:	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Assessment Period:	The period in a day over which assessments are made.
Assessment Location	The position at which noise measurements are undertaken or estimated.
Background Noise:	Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L90 noise level.
Decibel [dB]:	The units of sound pressure level.
dB(A):	A-weighted decibels. Noise measured using the A filter.
Extraneous Noise:	Noise resulting from activities that are not typical of the area. Atypical activities include construction, and traffic generated by holidays period and by special events such as concert or sporting events. Normal daily traffic is not considered to be extraneous.
Free Field:	An environment in which there are no acoustic reflective surfaces. Free field noise measurements are carried out outdoors at least 3.5m from any acoustic reflecting structures other than the ground
Frequency:	Frequency is synonymous to pitch. Frequency or pitch can be measured on a scale in units of Hertz (Hz).
Impulsive Noise:	Noise having a high peak of short duration or a sequence of such peaks. A sequence of impulses in rapid succession is termed repetitive impulsive noise.
Intermittent Noise:	Level that drops to the background noise level several times during the period of observation.



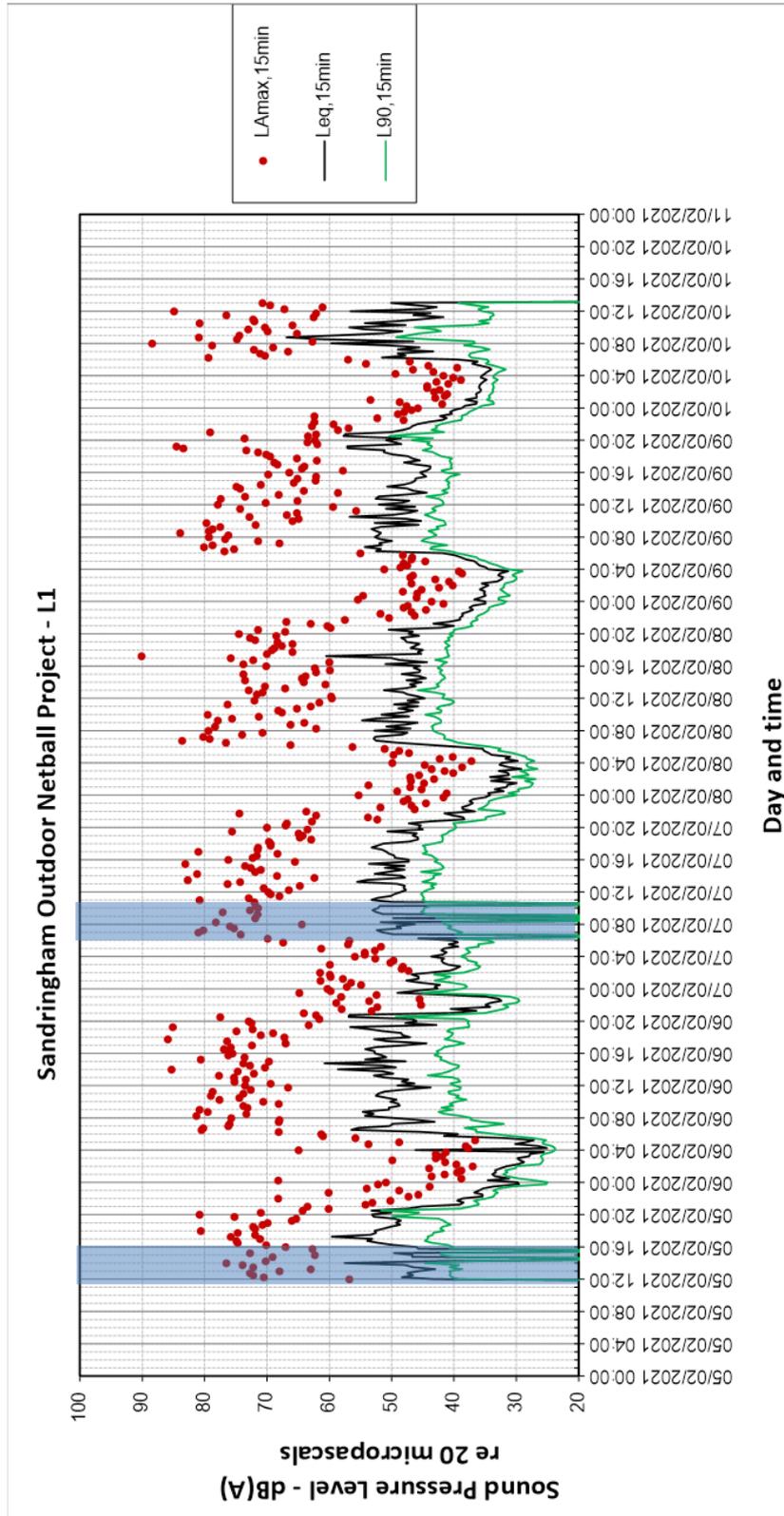
Sandringham Outdoor Netball Courts

L _{Amax}	The maximum A-weighted sound pressure level measured over a period.
L _{Amin}	The minimum A-weighted sound pressure level measured over a period.
L _{A1}	The A-weighted sound pressure level that is exceeded for 1% of the time for which the sound is measured.
L _{A10}	The A-weighted sound pressure level that is exceeded for 10% of the time for which the sound is measured.
L _{A90}	The A-weighted level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L ₉₀ noise level expressed in units of dB(A).
L _{Aeq}	The A-weighted "equivalent noise level" is the summation of noise events and integrated over a selected period of time.
L _{AeqT}	The constant A-weighted sound which has the same energy as the fluctuating sound of the traffic, averaged over time T.
Reflection:	Sound wave changed in direction of propagation due to a solid object met on its path.
R-w:	The Sound Insulation Rating R-w is a measure of the noise reduction performance of the partition.
SEL:	Sound Exposure Level is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain L _{eq} sound levels over any period of time and can be used for predicting noise at various locations.
Sound Absorption:	The ability of a material to absorb sound energy through its conversion into thermal energy.
Sound Level Meter:	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.
Sound Pressure Level:	The level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound Power Level:	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.
Tonal noise:	Containing a prominent frequency and characterised by a definite pitch.



Sandringham Outdoor Netball Courts

Appendix B Measurements Results – Logger Trace



Highlighted areas correspond to periods when there was rain near Sandringham. The corresponding measurements have been excluded from our analysis.



Sandringham Outdoor Netball Courts

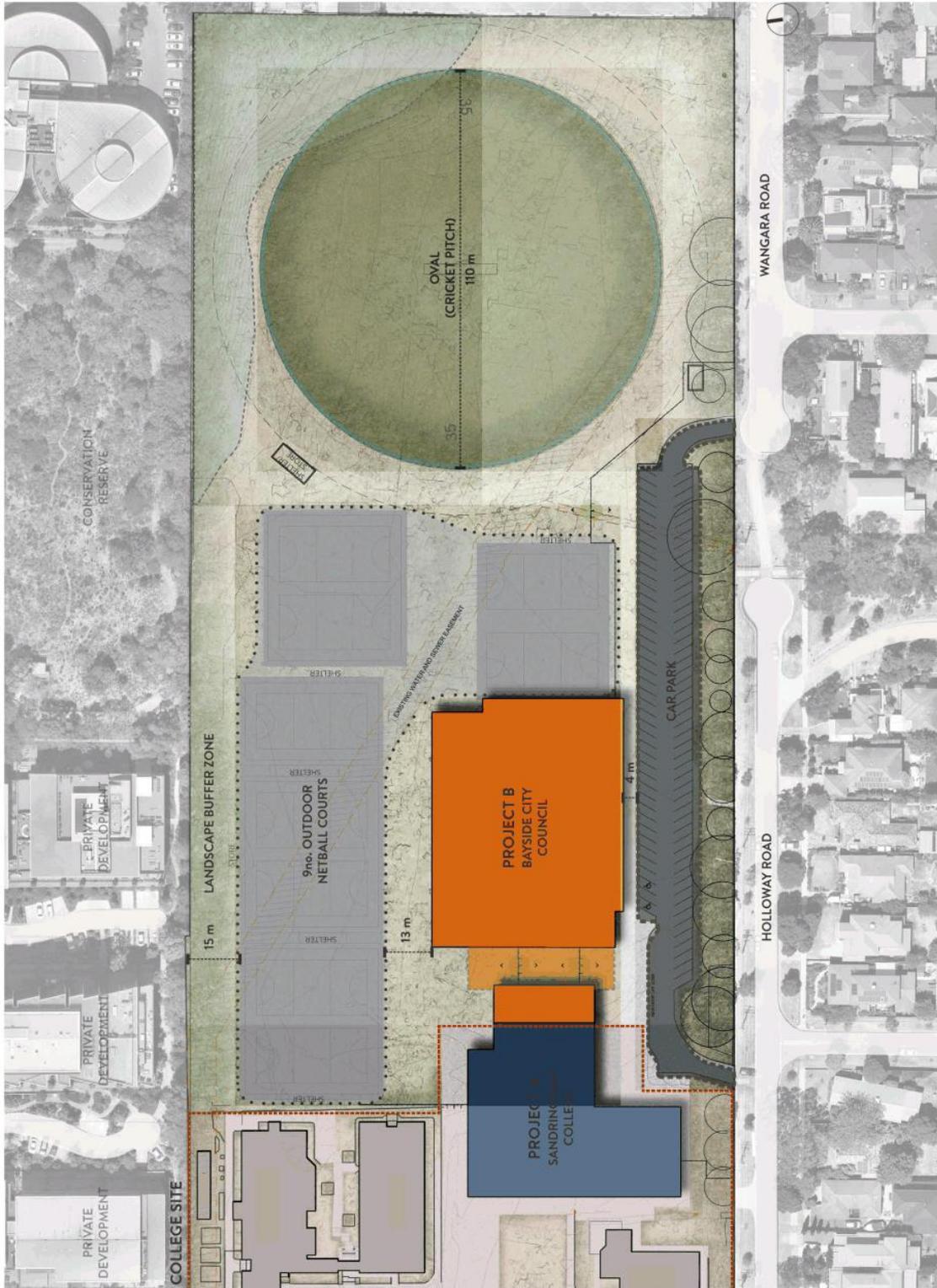
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SITE CONTEXT PLAN

