City of Ryde

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26 JUNE 2019

NOTICE OF MEETING

You are advised of the following meeting:

THURSDAY 4 JULY 2019.

City of Ryde Local Planning Panel Meeting No. 5/19

Council Chambers, Level 1A, 1 Pope Street, Ryde - 5.00pm

English
If you do not understand this letter, please come to the 1 Pope Street, Ryde (within Top Ryde Shopping Centre), Ryde, to discuss it with Council Staff who will arrange an interpreter service. Or you may ring the Translating & Interpreting Service on 131 450 to ask an interpreter to contact you. Council's phone number is 9952 8222. Council office hours are 8:30am to 5:00pm, Monday to Friday.

Arabic
إذا لـم تفهـم محتـوى هـذه الرسـالة، يرجـى الحضـور إلـى 1 Pope Street، Ryde (فـي Top Ryde Shopping Centre)، Ryde، لمناقشتها مـع موظفـي المجلـس الذيـن سـوف يرتبـون للاسـتعانة بمترجـم شـفهي. أو قد يمكنـك الاتصـال بخدمـة الترجمـة التحريريـة والشـفهية علـى الرقـم 131 450 لتتطلـب مـن المترجـم الاتصـال بـك. رقـم هاتـف المجلـس هـو 9952 8222. سـاعات عمـل المجلـس هـي 8:30 صباحـاً حتـي 5:00 مسـاءً، من الاثنين إلى الجمعة.

Armenian
Եթե դուք չեք հասկանում սույն նամակի բովանդակությունը, խնդրում ենք այցելել 1 Pope Street, Ryde (որը գտնվում է Top Ryde Shopping Centre-ի մեջ), Ryde, քննարկելու այն Քաղաքային Խորհրդի անձնակազմի հետ, ովքեր ձեզ համար կապահովեն թարգմանչական ծառայություն: Կամ կարող եք զանգահարել Թարգամչական Ծառայություն 131 450 հեռախոսահամարով և խնդրել, որ թարգմանիչը ձեզ զանգահարի: Խորհրդի հեռախոսահամարն է 9952 8222: Խորհրդի աշխատանքային ժամերն են՝ առավոտյան ժամը 8:30-ից մինչև երեկոյան ժամը 5:00, երկուշաբթիից մինչև ուրբաթ:

Chinese
如果你不明白这封信的内容，敬请前往1 Pope Street，Ryde（位于Top Ryde Shopping Centre内），向市政府工作人员咨询，他们会为您安排口译服务。此外，您也可以拨打131 450联络翻译和口译服务，要求口译员与您联系。市政府电话号码为9952 8222。市政府办公时间为周一至周五上午8:30至下午5:00。

Farsi
لطفا اگـر نمـی توانیـد مندرجـات ایـن نامـه را درک کنیـد، بـه نشـانی 1 Pope Street، Ryde (در Top Ryde Shopping Centre) در Ryde مراجعـه کنیـد تـا بـا اسـتفاده از یـک مترجـم دراین بـاره بـا یکـی از کارکنـان شـورای شـهر گفتگـو کنیـد. یـا آنکـه مـی توانیـد بـا خدمـات ترجمـه کتبـی و شـفاهی بـه شـماره 131 450 تمـاس گرفتـه و بخواهیـد کـه بـه یـک مترجـم ارتبـاط داده شـوید. شـماره تمـاس شـورای شهر 9952 8222 و ساعات کاری آن از 8:30 صبح تا 5:00 بعد از ظهر روزهای دوشنبه تا جمعه است.

Italian
Se avete difficoltà a comprendere questa lettera, venite in 1 Pope Street, Ryde (dentro al Top Ryde Shopping Centre), Ryde, per discutere con il personale del Comune che organizzerà un servizio di interpretariato. Potete anche contattare il Servizio di Traduzione e Interpretariato al 131 450 per chiedere a un interprete di contattarvi. Il numero di telefono del Comune è il 9952 8222. Gli orari di ufficio del Comune sono dalle 8.30 alle 17 dal lunedì al venerdì.

Korean
이 서신을 이해할 수 없을 경우, 1 Pope Street, Ryde (Top Ryde Shopping Centre 내)에 오셔서 통역사 서비스를 주선할 시의회 직원과 논의하십시오. 혹은 통번역서비스에 131 450으로 전화하셔서 통역사가 여러분에게 연락하도록 요청하십시오. 시의회의 전화번호는 9952 8222입니다. 시의회 사무실 업무시간은 월요일에서 금요일, 오전 8시 30분에서 오후 5시까지입니다.

City of Ryde
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City of Ryde Local Planning Panel
AGENDA NO. 5/19

Meeting Date: **Thursday 4 July 2019**
Location: **Council Chambers, Level 1A, 1 Pope Street, Ryde**
Time: **5.00pm**

NOTICE OF BUSINESS

Item **Page**

DECLARATIONS OF INTEREST

DEVELOPMENT APPLICATIONS

PLANNING PROPOSALS

DEVELOPMENT APPLICATIONS

1 442 LANE COVE ROAD, MACQUARIE PARK (TUCKWELL PARK) - FOUR NEW 22M HIGH LIGHT POLES WITH ASSOCIATED TRENCHING TO SERVICE THE POLES - lda2019/0092

Report prepared by: Creative Planning Solutions
Report approved by: Manager - Development Assessment; Director - City Planning and Environment
Report dated: 25 June 2019 **File Number:** GRP/09/6/12/1/2 - BP19/732

City of Ryde
Local Planning Panel Report

DA Number	LDA2019/0092
Site Address & Ward	442 Lane Cove Road, Macquarie Park NSW 2113 Central Ward
Zoning	RE1 Public Recreation Zone
Proposal	Four (4) new 22m high light poles at Tuckwell Park, along with associated trenching to service the poles. The proposed hours of operation of the lights are: - Winter (April to August) Monday to Thursday 4pm to 9:30pm; and - Summer (September to March) Monday to Thursday 6pm to 9pm.
Lodgement Date	21 March 2019
Property Owner	City of Ryde Council
Report Author	Ben Tesoriero – Consultant Planner
Applicant	City of Ryde Council
No. of Submission	Thirteen (13) submissions, eleven (11) of which are in objection, and two (2) in support.
Cost of Works	$100,000.00
Reason for Referral to LPP	Conflict of Interest – development for which the applicant or land owner is the council. Contentious development – 10 or more unique submissions by way of objection.

ITEM 1 (continued)

Recommendation	Approval
Attachments	**Attachment 1** Draft Conditions of consent **Attachment 2** Plans & SEE including Reports

1. Executive Summary

LDA2019/0092 seeks consent for the installation of four (4) x 22m high light poles with associated luminaries at each corner of the Tuckwell Park sports field. Also proposed is trenching for the installation of cables and conduits to service the light poles.

Currently the sports field is not illuminated.

The proposed hours of operation for the lights are:

- Winter (April to August) Monday to Thursday 4pm to 9:30pm; and
- Summer (September to March) Monday to Thursday 6pm to 9pm.

The subject development application (DA) was advertised in the *Northern District Times* on the 3 April 2019. The owners of surrounding properties were given notice of the application on 29 March 2019, with the notification period for submissions closing on 24 April 2019. In response to this notification/advertisement of the DA, thirteen (13) submissions were received, of which eleven (11) submissions objected to the proposal, and two (2) submissions were received in support of the DA.

The objections were generally based on the following grounds:

- Noise impacts
- Light spill
- Traffic and parking
- Hours of operation
- Security and privacy
- Enforcement of mitigation measures

Submissions in support of the DA generally focused on how the proposal will help augment existing sporting infrastructure to cater for increased demand for such facilities in the City of Ryde local government area.

A preliminary assessment was undertaken, and the DA was generally found to be satisfactory, except for the proposed light pole locations not having been sensitively placed with regard to existing trees. Accordingly, on 12 April 2019 an

ITEM 1 (continued)

email was issued to the applicant requesting the relocation of the light poles to minimise such impacts.

On 16 May 2019, amended plans were received which demonstrated the following:

- Pole 2 has been moved inside of the exiting perimeter pathway to avoid conflict with existing trees.
- Pole 3 has been relocated eastward which now creates a sufficient separation distance from existing trees;
- Pole 4 has been relocated westward to avoid conflict with existing trees. However, it is noted some minor pruning may still be required to accommodate Pole 4 in its new location.

The amended proposal has been assessed having regard to the matters for consideration under Section 4.55 of the *Environmental Planning and Assessment Act 1979* (the Act).

The assessment has determined the impacts of the proposal are satisfactory, that the proposal is suitable for the site, and that approval of the DA would be in the public interest.

As a result, this assessment recommends LDA2019/0092 be APPROVED, subject to the recommended conditions of consent.

2. The Site and Locality

Tuckwell Park comprises the following allotments:

- Lot 1 DP 578025
- Lot 72 DP 598636
- Lot 2 DP 587346

Tuckwell Park has a street address of 442 Lane Cove Road, Macquarie Park, and includes one (1) sports field which is currently used for soccer and cricket sporting activities - refer to ***Figure 1*** and ***Figure 2*** below. The park also includes a basketball court, one (1) playground, walking and cycling pathways, public toilet facilities and a car park. Security fencing is located along the eastern and southern sides of Tuckwell Park, which are bounded by Lane Cove Road and Fontenoy Road.

Vehicular access to Tuckwell Park's carpark is via the driveway and crossover to Fontenoy Road. The car park has a capacity of 50 car spaces, which includes two (2) disabled spaces.

ITEM 1 (continued)

The sports field occupies most of the park area, and is located within the central to south-eastern portion of the park.

To the north of the sports field is an open grassed area with large trees. This area slopes down significantly towards a driveway providing access to medium/high density residential accommodation at 12-14 Tuckwell Place and 448 Lane Cove Road, Macquarie Park – see ***Figures 3-5*** below. The residential boundary to 12-14 Tuckwell Place is around 25-40m from the northern side of the sports field. The residential boundary to 448 Lane Cove Road is around 10-20m from the north-eastern side of the sports field.

To the west of the sports field, adjacent to the playground, is an open grassed area which slopes down towards the residential car parking areas of 1-15 Tuckwell Place. These residences comprise of four (4) detached low rise residential flat buildings - refer to ***Figure 6-8.*** The residential boundary is around 35-60m from the western side of the sports field.

Large trees and mature vegetation are located along the southern and eastern sides of the sports field - refer to ***Figure 9***. To the east of Tuckwell Park is Lane Cove Road, and further to the east is the Lane Cove National Park.

To the south of Tuckwell Park, on the opposite site of Fontenoy Road, is a mix of medium to high density residential development located at 1-15 Fontenoy Road, Macquarie Park.
An aerial image of the site and surrounds, along with photographs captured during the site inspection are included below.

Figure 1 – Aerial Image of the subject site and surrounds.

ITEM 1 (continued)

Source: https://maps.six.nsw.gov.au/

Figure 2 – Image captured on the eastern of the Tuckwell Park Sports Field looking west.
Source: CPS, April 2019

Figure 3 – Image of the multi-dwelling housing development at 12 Tuckwell Place to the north of Tuckwell Park.
Source: CPS, April 2019

ITEM 1 (continued)

Figure 4 – Image of the multi-dwelling housing development at 14 Tuckwell Place located to the north of Tuckwell Park.
Source: CPS, April 2019

Figure 5 – Image of the multi-dwelling housing development at 448 Lane Cove Road located to the north-east of the Tuckwell Park sports field.
Source: CPS, April 2019

ITEM 1 (continued)

Figure 6 – Image of the low-rise residential flat building at 1-15 Tuckwell Place located behind the large trees and vegetation to the west of Tuckwell Park sports field.
Source: CPS, April 2019

Figure 7 – Image of the low-rise residential flat building at 1-15 Tuckwell Place located behind the large trees and vegetation to the west of Tuckwell Park sports field.
Source: CPS, April 2019

ITEM 1 (continued)

Figure 8 – Image of the low-rise residential flat building at 1-15 Tuckwell Place located to the west of Tuckwell Park sports field.
Source: CPS, April 2019

Figure 9 – Image of the Tuckwell Park sports field looking south-east at the large trees and mature vegetation surrounding the sports field.
Source: CPS, April 2019

ITEM 1 (continued)

3. The Proposal

LDA2019/0092 seeks consent for the following:

- Installation of four (4) x 22m high light poles at each corner of the Tuckwell Park sports field.
- Trenching excavation works to install cables and conduits to provide power to the light poles.

The lights are only proposed to be used for training and social sport purposes. LDA2019/0092 seeks consent for the following hours of operation:

- Winter (April to August): Monday to Thursday – 4pm to 9:30pm.
- Summer (September to March): Monday to Thursday – 6pm to 9pm.

It is noted that the sports field is not currently illuminated.

4. Background

The subject DA was lodged with Council on 21 March 2019.

The DA was advertised in the *Northern District Times* on the 3 April 2019. The owners of surrounding properties were given notice of the application on 29 March 2019, with the notification period for submissions closing on 24 April 2019. In response to this notification/advertisement of the DA, thirteen (13) submissions were received, of which eleven (11) submissions objected to the proposal, and two (2) submissions were received in support of the DA.

The objections were generally based on the following grounds:

- Noise impacts
- Light spill
- Traffic and parking
- Hours of operation
- Security and privacy
- Enforcement of mitigation measures

Submissions in support of the DA generally focused on how the proposal will help augment existing sporting infrastructure to cater for increased demand for such facilities in the City of Ryde local government area.

On the 12 April 2019, a preliminary assessment of the DA was completed. The preliminary assessment identified the following issues requiring additional information:

ITEM 1 (continued)

- The level of impact to be sustained to existing trees on site was unable to be determined, given the basic sketch mark-ups of the pole locations.
- Insufficient level of detail had been provided within the submitted documentation relating to the extent of the lighting pad/footings required.
- Elevations of the light poles had not been provided, therefore the extent of canopy clearance required to accommodate the light poles was unclear.
- That canopy pruning of 2 x Sydney Blue Gums (Eucalyptus saligna) would likely be required with the originally proposed pole locations. These trees were noted as being part of a Critically Endangered Ecological Community.

Given the above issues, it was recommended the applicant consider repositioning the light poles to minimise impacts on vegetation.

On 16 May 2019, amended plans were received which demonstrated the following:

- Pole 2 has been moved inside of the exiting perimeter pathway to avoid conflict with existing trees.
- Pole 3 has been relocated eastward which now creates sufficient separation distance from existing trees;
- Pole 4 has been relocated westward to avoid conflict with existing trees. However, it is noted some minor pruning may still be required to accommodate Pole 4 in its new location.

The original location of the light poles and the amended locations are demonstrated in Figure 10.

The relocated poles not only have the effects of being repositioned away from their impact on trees, but have generally been positioned further away (albeit marginally) from nearby residences. As such, the light spill impacts on residences is not considered to have increased.

The assessment herein is based on the amended plans received on 16 May 2019.

ITEM 1 (continued)

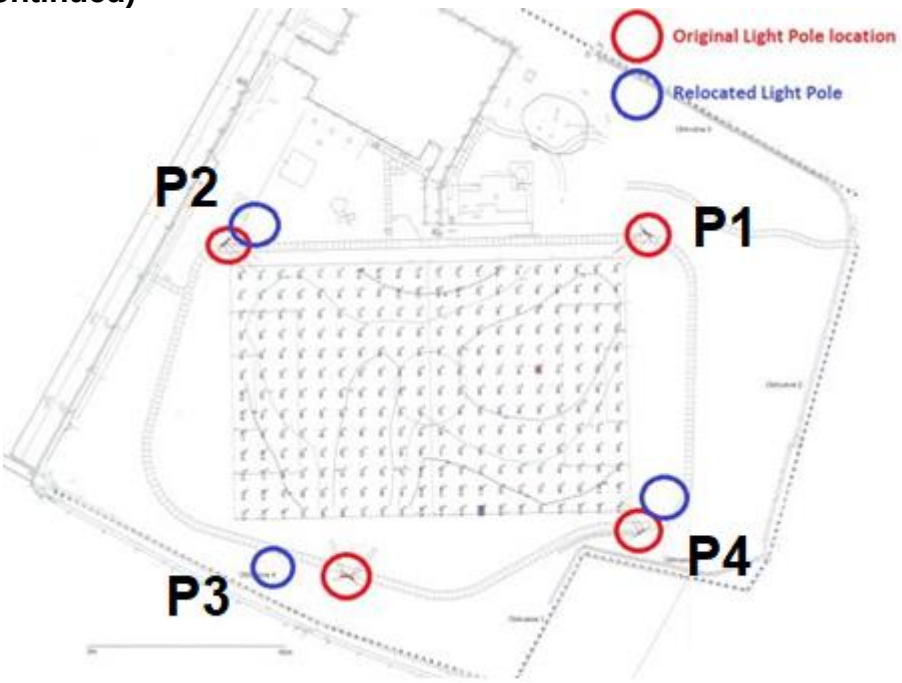


Figure 10 – Diagram showing the original light pole locations in red, and the amended light pole locations in blue. Noted light pole 'P1' has not been relocated.
Source: CPS, April 2019

5. Planning Assessment

SECTION 4.15 HEADS OF CONSIDERATION

(a) The provisions of

(i) Any environmental planning instrument:

Ryde Local Environmental Plan 2014

The subject site is zoned 'RE1 – Public Recreation' under the provisions of the *Ryde Local Environmental Plan 2014* (LEP2014) – refer to **Figure 11** below. The proposal is development for the purposes of "recreation facilities (outdoor)", which is a form of development that is permitted with consent in the RE1 zone.

The following is a table summarising key development standards in the LEP2014:

RYDE LEP 2014	PROPOSAL	COMPLIANCE
4.3(2) Height of buildings	The subject site is not prescribed a building height limit under LEP2014. It is noted however the four (4)	N/A

ITEM 1 (continued)

	proposed light poles are to be 22m in height. The light poles will not be inconsistent with the desired future building heights of the local area, given this land includes building height limits of 26m.	
5.10 Heritage Conservation	The subject site does not contain an item of heritage nor is the subject site located within a heritage conservation area. The subject site is located within 130m of Lane Cove National Park. Located between the subject site and the Lane Cove National Park is Lane Cove Road. This is a dual carriageway, six-lane road that is lined with light poles which heavily illuminate the road alignment. As such, the proposed light poles at Tuckwell Park are not considered to negatively impact upon the Lane Cove National Park heritage item 130m away. Refer to ***Figure 12*** and ***13*** below.	Yes
6.1 Acid sulfate soils This clause seeks is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.	The subject site is not mapped as containing any Acid Sulfate Soils.	N/A
6.2 Earthworks	The proposed earthworks will be limited to the relatively small footprint of	Yes

ITEM 1 (continued)

	the light pole footings, and associated trenches for the conduits. As such, these works are not anticipated to have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.	
6.9 Development in Macquarie Park Corridor	Although the subject site is within Macquarie Park, the site is not within the Macquarie Park Corridor Precinct as per Sheet MPC_008 of LEP2014.	N/A

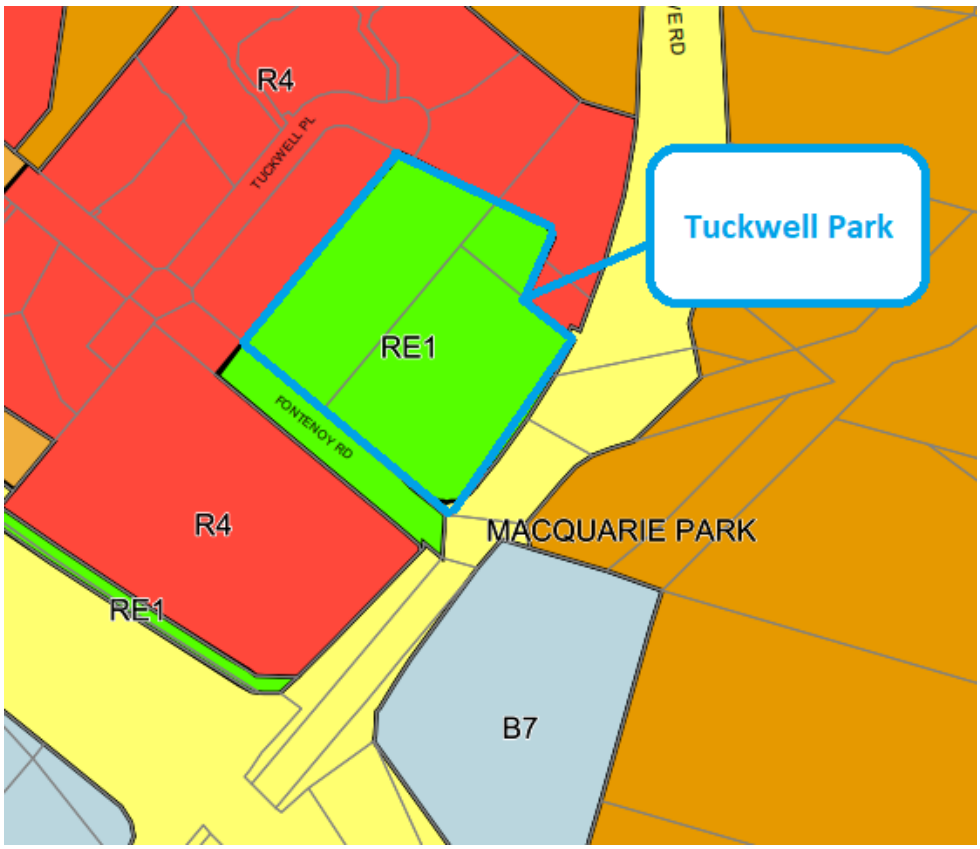


Figure 11 – LEP2014 Zoning map extract. Tuckwell Park is located within the central portion of the above image and is zoned RE1 Public Recreation.
Source: https://www.legislation.nsw.gov.au/

Aims and objectives for the RE1 – Public Recreation zone:

ITEM 1 (continued)

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*

The DA is capable of satisfying the objectives of the RE1 zone, as the proposal will:

- continue to improve the use of Tuckwell Park for public open space and recreational purposes;
- provide for, and allow an expansion of, recreational activities to be undertaken at Tuckwell Park that are compatible with surrounding land uses; and
- not detract significantly from the natural environment of Tuckwell Park or its surrounds.

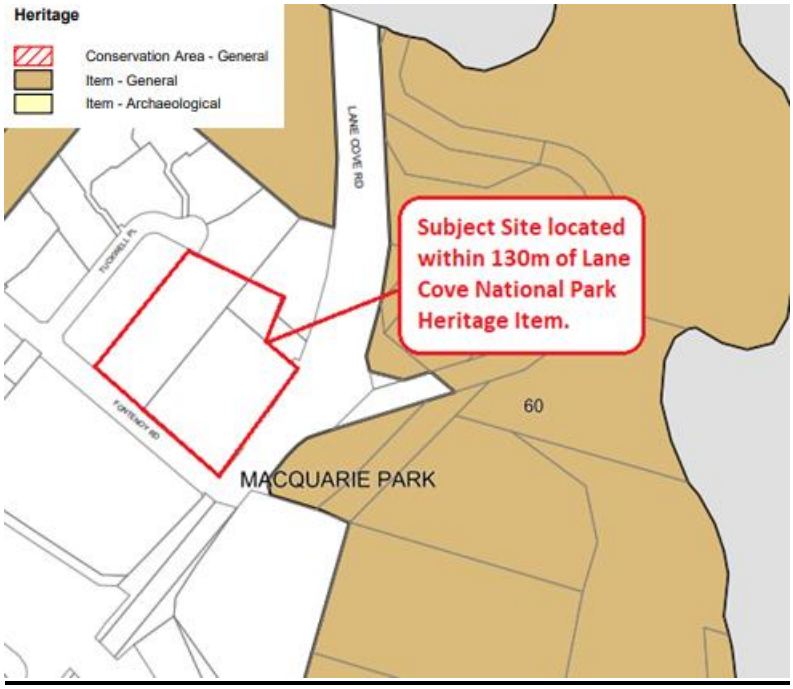


Figure 12 – LEP2014 Heritage map extract. Tuckwell Park is located 130m from Lane Cove National Park which is listed as a heritage item.
Source: https://www.legislation.nsw.gov.au/

ITEM 1 (continued)

Figure 13 – Image from the centre of Lane Cove Road looking south. To the right of frame is Tuckwell Park, and to the left of frame is the Lane Cove National Park 130m from the site. Noted in this image are the streetlight poles which heavily illuminate the road corridor and help diffuse impacts associated with the proposed development on the nearby heritage item.
Source: https://www.legislation.nsw.gov.au/

5.1 State Environmental Planning Instruments

No draft environmental planning instruments have been identified that would impact on the proposal.

5.2 Development Control Plans

Ryde Development Control Plan 2014

A review of the *Ryde Development Control Plan 2014* (DCP2014) having regard to the proposed development has not revealed any specific development controls that would be applicable to sports field lighting. The proposed development is considered to satisfy the general objectives of the DCP2014 for the following reasons:

- The modification will enhance the existing amenity of the City of Ryde by providing improved opportunities for its residents to participate in organised sport programs and activities at Tuckwell Park.
- The proposal can help contribute to the vibrancy of the area by servicing demand for sporting facilities that can be made available to local sporting groups of an evening. Additionally, the extra illumination of the park will allow curtilage areas of the sports field to also be used for other general recreational purposes – i.e. the perimeter walking track by the local community.
- The proposed light poles are considered appropriate for its location given the existing use of the land as a sports field used for organised sport. The proposal will only seek to enhance the usability of this community space, rather than introduce a new land use to the site.

ITEM 1 (continued)

5.3 Planning Agreements OR Draft Planning Agreements

No planning agreements or draft planning agreements are in place for the proposed development on the subject site.

5.4 Any matters prescribed by the regulations

No relevant provisions of the Regulations have been identified as pertinent in the assessment of the proposed development on the subject site.

6. The likely impacts of the development

Likely impacts on the natural and built environment:
Built Environment Impact

The DA will allow for the expanded use of the sports field at Tuckwell Park, which would enable further evening use of the field throughout the year.

As such the proposal must be considered in terms of its impact on the surrounding built environment.

- **Land Use** – The additional illumination time does not change the use of Tuckwell Park as a public recreation area – accordingly no impact on the built environment in terms of the type of land use is anticipated.

- **Duration of Use** – The existing sports field is currently used during daylight hours throughout the week. When measured from 'civil twilight' the proposed hours of illumination of the sports field will correlate to at least 21 minutes of additional usage in summer and not more than 4 hours and 10 minutes of additional usage in winter. It is therefore evident the proposal will result in an intensification of the use of Tuckwell Park. The appropriateness of the intensified use is explored below when having regard to the associated impacts – i.e. traffic and parking, light spill and noise.

  Note – Civil twilight is generally regarded as the period after sunset where there is enough sunlight during this period that artificial light may not be required to carry out outdoor activities.

- **Traffic and Parking** – The applicant has submitted a Traffic and Parking Assessment by Bitzios Consulting (dated 18 November 2018). Multiple site visits were undertaken by Bitzios to observe traffic and parking conditions on Fontenoy Road.

  The results of the parking occupancy surveys revealed that the car park did not reach greater than 66% of its total parking capacity, during peak periods.

ITEM 1 (continued)

As such, from a parking perspective, Bitzios claim the existing capacity to be sufficient, and no additional car parking bays would be required.

The Bitzios assessment also concludes that, while evening sporting matches may prolong the amount of traffic pressure on Fontenoy Road, the installation of the light poles would cause negligible traffic related issues based on the satisfactoriness of the existing road infrastructure capacity.

The existing traffic and parking impacts are already established in this locality from the day time usage of the sports field. The traffic and parking impacts associated with the proposal are unlikely to be dissimilar to the impacts already experienced throughout other times of day. With an increasing population throughout the Ryde LGA, it is expected that the demands on community facilities, such as public parks and sporting facilities would increase over time, and the associated impact on parking is not unexpected in streets surrounding local sports facilities.

As part of the assessment of the DA, the proposal was referred to Council' City Work & Infrastructure (CW&I) officers for comment. The referral response identified that the changeover period between sports field use is the primary cause of disruption for the local road network. To help mitigate this, Council have traditionally recommended conditions of consent that require 'a minimum of 20 minutes is to be maintained between sessions to facilitate the efficient use of off-street parking spaces'. By imposing a similar condition on the subject DA, this will minimise the likelihood of traffic and parking disruptions to the local road network. (See condition 41).

- **Light Spill** – Sports field lighting has the potential to impact on the built environment in terms of the obtrusive effects of outdoor lighting, particularly on nearby residential accommodation.

  Importantly, the subject site is not considered to be located in overly dark surrounds. As outlined earlier in this report, the subject site is bounded to the east by the Lane Cove Road corridor, which is a six-lane dual-carriageway classified road. The road is aligned on both sides by street light poles which heavily influence the illumination of the local area at night.

  AS 4282-1997 Australian Standard. Control of the obtrusive effects of outdoor lighting states that the maximum vertical lux level at residential boundaries shall be less than 10 lux for non-commercial boundaries. The applicant's submitted Tender Specification Report seeks to improve on the level of performance specified by AS 4282-1997 by indicating the verticals along all residential boundaries shall be kept below 5 lux to limit light spill and glare.

  The applicant has submitted a Lighting Assessment by Gary Roberts and Associates which assesses the light spill proposed by the new flood lights. The lighting assessment predicts that the proposed new flood lights would result in

ITEM 1 (continued)

a 2.5 lux maximum at the residential property boundaries abutting Tuckwell Park, thus achieving compliance with the 10 lux limit set by AS 4282-1997, and also the stricter 5 lux limit specified within the applicants submitted Tender Specification Report.

As covered in the background section this report, amended plans have been submitted by the applicant which reposition the light poles to minimise conflicts with existing vegetation. Despite this relocation, an amended Lighting Assessment has not been requested by the applicant. This is because the proposed light poles have been relocated further away from the residential boundaries, thus not giving rise to an increase in light spill impacts.

Despite the above, a condition of consent requiring compliance with AS 4282-1997 has been imposed, along with a verification report confirming compliance with AS 4282-1997 before commencing use of the lights for night-time sporting activities at the sports field.

> ***Light Spill Validation Report –*** *A validation report must be obtained from a suitably qualified and experienced lighting engineer prior to commencing use of the light poles at the playing fields for sporting activities. The report shall demonstrate and certify that light spill impacts comply with the Australian Standard AS4282-1997 'Control of Obtrusive Effects of Outdoor Lighting'. In the event the report fails to demonstrate and certify that the lights comply with the Australian Standard, a modification application to the installation of the lighting is to be made and accompanied by a report from a suitably qualified and experienced lighting engineer to Council demonstrating that the modified lighting complies with the Australian Standard. The lighting shall not be used until such time that compliance with the Australian Standard is met.*

- **Noise Impacts** – As pointed out above, the subject site borders Lane Cove Road, and is therefore already subject to significant traffic noise from motor vehicles.

  The DA is however accompanied by an acoustic assessment prepared by EMM Consulting, dated 3 December 2018. The report assesses the potential impacts on nearby residences from the proposed extension to the sports field hours of operation.

  Noise sensitive receivers were placed at residential locations surrounding Tuckwell Park. The acoustic assessment modeled two (2) scenarios which include the typical use of the Park, (half the field occupied) and the worst-case scenario (maximum noise levels associated with a full soccer match and a large number of spectators).

  The predicted noise levels in relation to the modelled worst-case scenario revealed that the residences to the north, south and west of the Tuckwell Park sports field will not trigger noise level exceedances in the extended evening

ITEM 1 (continued)

periods. However, to the north-east of the Tuckwell Park sports field, a noise logger placed at 448 Lane Cove Road revealed a 1dB exceedance. However, the acoustic assessment states that a 1-2dB exceedance is negligible, and is not perceptible to the human ear.

Notwithstanding, the acoustic assessment includes the following noise management recommendations:

- Management should be employed during the evenings such that spectators are instructed to be positioned on the western side lines to maximise the distance between nearest residential properties and therefore minimise noise; and

- Persons who use the field should be encouraged to keep noise to a minimum during the evening period (after 6pm) when transiting from the fields to the car park.

The first recommendation requires management to be employed to ensure spectators are sitting in the appropriate location. The management is in respect to the sporting organisation using the park. The sporting organisation is to identify one of their members to be responsible for ensuring that when the field is in use, spectators are instructed to be positioned on the western side lines to maximise the distance between the nearest residential properties and therefore minimize noise. These recommendations have been included in the draft conditions. (See condition number 42).

The acoustic assessment report by EMM will form part of the consent, and as such these recommendations will need to be complied with. In addition, the following condition requiring preparation of validation report is also recommended:

> ***Acoustic/Noise Validation Report –*** *A validation report must be obtained from a suitably qualified and experienced acoustic engineer prior within three (3) months of the commencement of the use of the light poles at the playing fields for sporting activities. The report shall demonstrate and certify that the proposal achieves compliance with the noise prediction results contained within the Tuckwell Park Lighting Installation Acoustic Assessment (Report No. J180301 RP1) dated 3 December 2018, prepared by EMM.*

The following additional consent conditions will also be imposed to further minimise potential noise impacts on nearby residences:

> ***Automatic light switch –*** *An automated curfew switch is to be installed, along with manual off switches, for each light pole.*

ITEM 1 (continued)

Light curfew – *The sports field lights are to be automatically extinguished by 9:30pm in the winter season, and 9:00pm in the summer season. Should use of the playing fields conclude earlier, the lights are to be extinguished at the earlier concluding time.*

Natural Environment Impact

While there will be minimal physical change to the Tuckwell Park sports field, the proposed flood lights and extended hours of use must be considered in terms of its potential impact on the surrounding natural environment.

The Statement of Environmental Effects (SEE) submitted with the DA provides a comprehensive assessment of the proposal's potential impact on the natural environment, and identifies there to be no threatened species or communities having potential to occur in the park.

In addition, the amended plans have now seen the light poles repositioned to minimise impacts on vegetation. Further discussion on this matter, along with recommended conditions of consent, is included in the Consultant Landscape Architect referral response later in this report.

The subject site is partially located on bush fire prone land (vegetation buffer). As part of the assessment of the DA, the proposal was referred to Council's bush fire consultant for comment. In their referral response it was concluded that the proposed development conforms to the specifications and requirements of the *Planning for Bushfire Protection 2006* – see referral response later in this report for further details.

Social Impact

The proposed lighting will extend the overall availability of the Tuckwell Park sports field, benefiting not only the sporting teams that will use the field during these hours but also the members of the wider public that will also be able to use the curtilage areas of the field – i.e. the perimeter walking path. This will create a range of social benefits such as additional capacity for sporting teams in Ryde, and the associated physical and mental health benefits that arise from participation in sports.

While it is acknowledged that the intensification of the use of the sports field has the potential to give rise to negative impacts (i.e. noise, light spill etc.), with the imposition of appropriate consent conditions, these impacts can be mitigated to within acceptable limits.

Therefore, on balance, the social impacts of the proposal are positive.

Economic Impact

ITEM 1 (continued)

The proposal is likely to contribute to a range of economic benefits in the Ryde LGA through:

- More efficient use of land resources, existing infrastructure and existing services; and
- Allowing additional sporting team capacity in the area due to the prolonged availability of the sports field into the evening.

The proposal is considered unlikely to result in any significant negative economic impacts.

7. Suitability of the site for the development

For the following reasons, Tuckwell Park is suitable for the proposed development:

- The site contains an existing underutilised sport field.
- The subject site is not unduly constrained, and will therefore unlikely have any significant impacts on the natural or built environment.
- The light poles and sports field are positioned a sufficient distance from adjoining residential boundaries, therefore helping mitigate potential acoustic or light spill impacts.
- The proposal will help facilitate recreational activities on land zoned for public recreational purposes in an area where increasing demand for such facilities has arisen.

8. The Public Interest

Having regard to the assessment contained in this report, it is considered that approval of the development is in the public interest.

9. Submissions

The subject DA was advertised in the *Northern District Times* on the 3 April 2019. The owners of surrounding properties were given notice of the application on 29 March 2019, with the notification period for submissions closing on the 24 April 2019. In response to this notification/advertisement of the DA, thirteen (13) submissions were received, of which eleven (11) submissions objected to the proposal, and two (2) submissions were received in support of the DA.

The objections raised in the submissions are covered below, followed by a comment from the assessing planner:

A. Noise impacts – Noise from the extended use of the Tuckwell Park will impact on nearby residences.

Comment: Reference is made to the comments earlier in this assessment report, and also the findings of the EMM acoustic assessment which

ITEM 1 (continued)

identified the proposal being able to comply with the acoustic criteria at all noise sensitive locations, with the exception of a 1dB exceedance at 448 Lane Cove Road. The acoustic assessment notes however that a 1-2dB exceedance is not perceptible to the human ear.

Nonetheless, the noise management procedures of the acoustic assessment have been included as part of the conditions of consent, along with additional conditions which have been recommended by this assessment report to ensure curfew and automatic-off switches are placed on the lights.

Objectors at 26/1-15 Tuckwell Place Macquarie Park have also raised concerns regarding the additional noise as a result of the players hanging around the car park after games.

***Comment**:* The acoustic assessment prepared by EMM includes noise mitigation recommendations, specifically, management will be employed to ensure people who use the field will be encouraged to keep noise to a minimum during the evening period when transitioning from the field to the car park. Once again, the recommendations of the acoustic assessment will form part of the conditions of consent. (See conditions 41 and 42).

B. Light Spill – The proposal will result in increased light spill upon surrounding residential properties.

Comment: AS 4282-1997 states that the maximum vertical lux level at residential boundaries shall be less than 10 lux for non-commercial boundaries.

Included as part of the DA is a Lighting Assessment prepared by Gary Roberts and Associates which has assessed the level of light spill generated by the proposed new flood lights.

The Lighting Assessment concludes that new flood lights would result in a 2.5 lux maximum at the residential property boundaries abutting Tuckwell Park, thus achieving compliance with the 10 lux required.

Given compliance is achieved with AS 4282-1997, the light spill impacts of the proposal are considered satisfactory.

Despite this, conditions of consent for curfew and automatic-off switches have been recommended to ensure the sports field is not illuminated beyond the permitted hours, or should use of the field finish earlier. (see condition 45 and 46).

C. Traffic and Parking – Negative traffic and parking impacts will arise from the extended use of Tuckwell Park.

ITEM 1 (continued)

Comment: Included within the DA is a Traffic and Parking Assessment prepared by Bitzios Consulting, who undertook numerous parking occupancy surveys across different days. The results of the parking occupancy surveys revealed that the car park did not reach greater than 66% of its total parking capacity, during peak periods,

As such, from a parking perspective, the existing capacity is sufficient, and no additional car parking bays would be required.

The proposal does not seek to create additional playing fields at the site, but rather make use of an existing playing field for longer periods. As such, there is not anticipated to be an increase in traffic volumes, only an extension of Tuckwell Park related traffic later into the evening.

To help mitigate traffic and parking issues, Council's City Works officers have recommended conditions of consent that require a minimum of 20 minutes be maintained between sessions to facilitate the efficient use of off-street parking spaces.

D. Reduced Number of Hours and hours of usage – Objectors have requested the hours of operation be limited to Monday to Thursday 4:00pm – 9:00pm (April to August), and Monday to Thursday 6:00pm – 8:30pm in summer (September to March).

Comment: The hours of operation are wholly within the 'evening period' (i.e. before 10pm) under the provisions of EPA's Noise Guide for Industry, and are also within pre-curfew hours (i.e. before 11pm) as set by AS 4282-1997.

When having regard to the potential impacts (i.e. noise, light spill, traffic and parking) on nearby residential properties, this assessment report has determined the proposed hours of operation are acceptable, subject to conditions.

E. Mitigation Measures – Ability to enforce mitigation measures included within the SEE.

Comment: It will be the responsibility of sporting organisation to ensure the members comply with consent conditions, and any other special conditions that may be included within any permit or license agreement between Council and the sports organisations. Reports of any breaches of consent conditions, or any other conditions relating to the use of the field, will be investigated by Council and dealt with accordingly.

F. Security and Privacy – Objectors at No.14 and No.15 Tuckwell Place have raised concern that loungeroom and bedroom privacy within

ITEM 1 (continued)

there dwellings will be compromised by the new light poles which extend the use of the Tuckwell Park.

Comment: Existing vegetation around the perimeter of the park will filter views of adjacent residences and assist in the maintenance of visual privacy. Further, views would also be limited by the considerable grade difference and distance from the field to the residences.

Amended plans have been submitted by the applicant to ensure minimal disturbance to perimeter vegetation, which will help ensure existing tree screening is maintained.

10. Referrals

Consultant Landscape Architect/Arboriculturalist: As part of the assessment of the subject DA, the proposal was referred to Council's Consultant Landscape Architect and Arborist for comment. As covered in the background section of this report, amended plans were required that reduced the level of impact on existing vegetation.

Following the applicant's submission of additional information on 16 May 2019, the amended plans were referred to the consultant for further comment. In their subsequent referral response received on 23 May 2019, no objections to the amended proposal were raised, subject to the following conditions being imposed:

Tree Protection. *Tree protection is to be provided for all trees with potential to be impacts by the approved development works. Tree protection measures are to be advised by an Arborist with minimum AQF5 qualifications. All tree protection measures including installation of any fencing is to occur prior to the commencement of any work on site.*

Tree Protection Fencing*. All protective fencing and signage around TPZs must be located in accordance with AS4970: Protection of trees on development sites. In this regard, any fencing required to be constructed around the TPZ is to be in accordance with AS4687 Temporary fencing and hoardings.*

Underground Utilities*. Any utility services to be located underground within the TPZ are to be undertaken utilizing excavation techniques that prevent or minimize damage to structural roots (roots greater than >25mm diameter). To prevent soil compaction and root damage these works should be conducted with non-motorised hand tools or directional drilling.*

Excavation within TPZ*. Any excavation or grading/re-grading within the identified TPZ's of trees to be retained shall be carried out by hand using manual, non-motorised hand tools. Roots greater than 25mm are not to be damaged or severed without the prior written approval of the Project Arborist.*

ITEM 1 (continued)

***Fill Requirements**. All fill to be placed within the Tree Protect Zones of neighboring trees is to be gap graded structural soils which allows for gaseous exchange and future root growth. The Project Arborist is to confirm suitability of the proposed material prior to installation.*

***Canopy Tying**. Where possible tree branches overhanging the construction zones are to be tied back to the main trunk rather than pruned.*

***Tree Pruning.** All tree pruning work is to be carried out in accordance with AS4373 Pruning of amenity trees and Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal (2016) and undertaken by an Arborist with minimum AQF Level 3 qualifications.*

Environmental Health Officer: As part of the assessment of the subject DA, the proposal was referred to Council's Environmental Health Officer (EHO) for comment. In their response issued on 13 May 2019, no objection to the proposed development was raised, subject to the following conditions:

Contaminated Land:

***Discovery of Additional Information** - Council and the Principal Certifying Authority (if Council is not the PCA) must be notified as soon as practicable if any information is discovered during demolition or construction work that has the potential to alter previous conclusions about site contamination.*

***Contaminated soil** - All potentially contaminated soil excavated during construction work must be stockpiled in a secure area and be assessed and classified in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) before being transported from the site.*

***Transportation of wastes** - All wastes must be transported in an environmentally safe manner to a facility or place that can lawfully be used as a waste facility for those wastes. Copies of the disposal dockets must be kept by the applicant for at least 3 years and be submitted to Council on request.*

Light Pollution:

***Light Spill –** The light spill at the adjoining residential boundaries to comply with the requirements of AS 4282 – Control of the obtrusive effects of outdoor lighting.*

***Light Spill Validation Report –** A validation report must be obtained from a suitably qualified and experienced lighting engineer prior to commencing use of the light poles at the playing fields for sporting activities. The report shall demonstrate and certify that light spill impacts comply with the Australian Standard AS4282-1997 'Control of Obtrusive Effects of Outdoor*

ITEM 1 (continued)

Lighting'. In the event the report fails to demonstrate and certify that the lights comply with the Australian Standard, a modification to the installation of the lighting is to be made and accompanied by a report from a lighting engineer to Council demonstrating that the modified lighting complies with the Australian Standard. The lighting shall not be used until such time that compliance with the Australian Standard is met.

Automatic light switch – *An automated curfew switch is to be installed, along with manual off switches, for each light pole.*

Light curfew – *The sports field lights are to be automatically extinguished by 9:30pm in the winter season, and 9:00pm in the summer season. Should use of the playing fields conclude earlier, the lights are to be extinguished at the earlier concluding time.*

Noise Pollution:

Offensive noise *- The use of the premises must not cause the emission of 'offensive noise' as defined in the Protection of the Environment Operations Act 1997.*

Acoustic/Noise Validation Report – *A validation report must be obtained from a suitably qualified and experienced acoustic engineer prior within three (3) months of the commencement of the use of the light poles at the playing fields for sporting activities. The report shall demonstrate and certify that the proposal achieves compliance with the noise prediction results contained within the Tuckwell Park Lighting Installation Acoustic Assessment (Report No. J180301 RP1) dated 3 December 2018, prepared by EMM.*

Council may require acoustical consultant's report *- Council may require the submission of a report from an appropriately qualified acoustical*

City Works (Traffic): As part of the assessment of the subject DA, the proposal was referred to Council's CW team for comment on traffic matters. In their response issued on the 15 April 2019, CW have specified that whilst the car park is adequate for the expected number of players, the simultaneous change over period between matches may cause some level of disruption to the local road network for both traffic and parking.

In order to address the potential impact to the local road network, CW have recommended the following condition of consent:

Hours of Operation. *The hours of operation and use of the field for night training and competitions are to be in accordance with the following:*

ITEM 1 (continued)

1. *Winter Season: 4pm to 9:30pm Monday to Thursday during April to August. The lights are to be turned off as early as practicable after completion of training and/or competition, and in any case no later than 9:30pm. A minimum of 20 minutes is to be maintained between sessions to facilitate the efficient use of off-street parking spaces.*
2. *Summer Season: 6pm to 9pm Monday to Thursday during September to March. The lights are to be turned off as early practicable are completion of training and/or competition, and in any case no later than 9pm. A minimum of 20 minutes is to be maintained between sessions to facilitate the efficient use of off-street parking spaces.*

Bushfire Consultant: As part of the assessment of the subject DA, the proposal was referred to Council's Bushfire Consultant as the subject site is located within bush fire prone land in accordance with the *City of Ryde Council Bushire Pone Land Map*. (Refer to ***Figure 14*** below). In their referral response issued on 11 April 2019, it was concluded that the proposed development conforms to the specifications and requirements of the *Planning for Bushfire Protection 2006* and accordingly there are no conditions recommended.

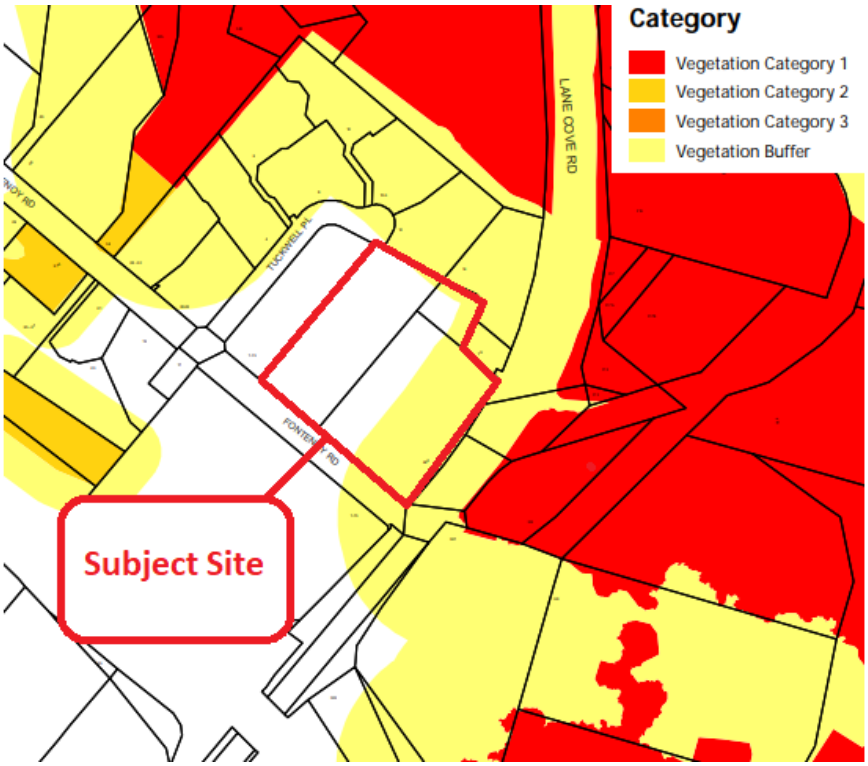


Figure 14 – City of Ryde Council – Bushfire Prone Land Map. Note the subject site is partially affected by bushfire.
Source: https://www.legislation.nsw.gov.au/

ITEM 1 (continued)

11. Conclusion

The development application is recommended for approval subject to appropriate conditions of consent. The reasons for approval are:

1. The proposal is consistent with the objectives, standards, and controls contained within the provisions of LEP2014 and DCP2014.

2. The impacts on the natural and built environment have been assessed to be satisfactory.

3. The proposal will continue to help facilitate recreational activities on land zoned for public recreational purposes, and is therefore a suitable use of the site.

4. The development is considered to be in the public interest

12. Recommendation

1. That LDA2019/0092 at 442 Lane Cove Road, Macquarie Park be approved subject to the conditions in attachment 1.

2. That the persons who made a submission be advised of the decision.

ATTACHMENTS
1 Draft conditions of consent
2 Plans & SEE including Reports

Report Prepared By:

Ben Tesoriero Planning Consultant
Creative Planning Solutions

Report Approved By:

Sandra Bailey
Manager - Development Assessment

Liz Coad
Director - City Planning and Environment

ITEM 1 (continued) **ATTACHMENT 1**

DRAFT CONDITIONS OF CONSENT – LDA2019/0092

GENERAL

The following conditions of consent included in this Part identify the requirements, terms and limitations imposed on this development.

1. **Approved Plans/Documents.** Except where otherwise provided in this consent, the development is to be carried out strictly in accordance with the following plans (stamped approved by Council) and support documents:

Document Description	Date	Plan No/Reference
Plan Showing Preliminary Detail and Levels Over Tuckwell Park, Macquarie Park	As submitted to Council on 16 May 2019	Ref: 33799, Sheet 1 prepared by Norton Survey Partners
Untitled Plan showing Luminaire Schedule, Luminaire Location Summary, and Calculation Summary	As submitted to Council on 16 May 2019	Unreferenced.
Electrical Services Lighting and Power Layout (as modified by the amended plans submitted to Council on 16 May 2019).	24 November 2018	Drawing No 419E1, Issue B, prepared by Gary Roberts and Associates
Statement of Environmental Effects	13 May 2019	Version – Final v2, prepared by Sure Environmental
Tuckwell Park Lighting Traffic and Parking Assessment	28 November 2018	Project No: P3758, prepared by Bitzios Consulting
Tuckwell Park Lighting installation acoustic assessment	3 December 2018	Report No. J180301 RP1, Version V1, prepared by EMM Consulting
Obtrusive Light – Compliance Report	29 June 2018	Filename: Tuckwell 1, prepared by Gary Roberts and Associates
Geotechnical Investigation	10 August 2018	Ref: 31651Lrpt, prepared by JK Geotechnics

The Development must be carried out in accordance with the amended plans

ITEM 1 (continued) **ATTACHMENT 1**

approved under this condition. The works, including the erection of the light poles, earthworks for the footings of the light poles, and for cabling associated with the light poles, are to be undertaken as described within the Statement of Environmental Effects, as modified by the amended plans submitted to Council on 16 May 2019.

2. **Building Code of Australia.** All building works approved by this consent must be carried out in accordance with the requirements of the Building Code of Australia.

3. **Support for neighbouring buildings.** If the development involves excavation that extends below the base of the footings of a building on adjoining land, the person having the benefit of the development consent must, at the person's own expense:

   a) Protect and support the adjoining premises from possible damage from the excavation, and
   b) Where necessary, underpin the adjoining premises to prevent any such damage, in accordance with relevant Australian Standards.

4. Hours of work. Building activities (including demolition) may only be carried out between 7.00am and 7.00pm Monday to Friday (other than public holidays) and between 8.00am and 4.00pm on Saturday. No building activities are to be carried out at any time on a Sunday or a public holiday.

5. Hoardings.

   a) A hoarding or fence must be erected between the work site and any adjoining public place.
   b) Any hoarding, fence or awning erected pursuant this consent is to be removed when the work has been completed.

6. **Illumination of public place.** Any public place affected by works must be kept lit between sunset and sunrise if it is likely to be hazardous to persons in the public place.

7. **Development to be within site boundaries.** The development must be constructed wholly within the boundaries of the premises. No portion of the proposed structure shall encroach onto the adjoining properties.

8. **Public space.** The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances, without prior approval from Council.

9. **Public Utilities.** Compliance with the requirements (including financial costs) of any relevant utility provider (e.g. Energy Australia, Sydney Water, Telstra, RMS, Council etc) in relation to any connections, works, repairs, relocation, replacements and/or adjustments to public infrastructure or services affected by the development.

10. **Roads Act.** Any works performed in, on or over a public road pursuant to this consent must be carried out in accordance with this consent and with the Road Opening Permit issued by Council as required under section 139 of the Roads Act 1993.

ITEM 1 (continued) **ATTACHMENT 1**
PRIOR TO CONSTRUCTION CERTIFICATE

A Construction Certificate must be obtained from a Principal Certifying Authority to carry out the relevant building works approved under this consent. All conditions in this Section of the consent must be complied with before a Construction Certificate can be issued.

Council Officers can provide these services and further information can be obtained from Council's Customer Service Centre on 9952 8222.

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifying Authority is responsible for determining compliance with the conditions in this Section of the consent.

Details of compliance with the conditions, including plans, supporting documents or other written evidence must be submitted to the Principal Certifying Authority.

11. **Compliance with Australian Standards.** The development is required to be carried out in accordance with all relevant Australian Standards. Details demonstrating compliance with the relevant Australian Standard are to be submitted to the Principal Certifying Authority prior to the issue of the **Construction Certificate**.

12. **Structural Certification.** The applicant must engage a qualified practising structural engineer to provide structural certification in accordance with relevant BCA requirements prior to the release of the **Construction Certificate**.

13. **Security deposit.** The Council must be provided with security for the purposes of section 80A(6) of the *Environmental Planning and Assessment Act 1979* in a sum determined by reference to Council's Management Plan prior to the release of the **Construction Certificate.** (other buildings with delivery of bricks or concrete or machine excavation)

14. **Fees.** The following fees must be paid to Council in accordance with Council's Management Plan prior to the release of the **Construction Certificate**:

    a) Infrastructure Restoration and Administration Fee
    b) Enforcement Levy

15. **Long Service Levy.** Documentary evidence of payment of the Long Service Levy under Section 34 of the Building and Construction Industry Long Service Payments Act 1986 is to be submitted to the Principal Certifying Authority prior to the issuing of the **Construction Certificate**.

16. **Reflectivity of materials.** Roofing and other external materials must be of low glare and reflectivity. Details of finished external surface materials, including colours and texture must be provided to the Principal Certifying Authority prior to the release of the **Construction Certificate**.

ITEM 1 (continued) **ATTACHMENT 1**
PRIOR TO COMMENCEMENT OF CONSTRUCTION

Prior to the commencement of any demolition, excavation, or building work the following conditions in this Part of the Consent must be satisfied, and all relevant requirements complied with at all times during the operation of this consent.

17. Site Sign

a. A sign must be erected in a prominent position on site, prior to the commencement of construction:
   (i) showing the name, address and telephone number of the Principal Certifying Authority for the work,
   (ii) showing the name of the principal contractor (if any) or the person responsible for the works and a telephone number on which that person may be contacted outside working hours, and
   (iii) stating that unauthorised entry to the work site is prohibited.

b. Any such sign must be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

18. **Safety fencing.** The site must be fenced prior to the commencement of construction, and throughout demolition and/or excavation and must comply with WorkCover New South Wales requirements and be a minimum of 1.8m in height.

19. **Tree Protection.** Tree protection is to be provided for all trees with potential to be impacts by the approved development works. Tree protection measures are to be advised by an Arborist with minimum AQF5 qualifications. All tree protection measures including installation of any fencing is to occur prior to the commencement of any work on site.

20. **Tree Protection Fencing**. All protective fencing and signage around TPZs must be located in accordance with AS4970: Protection of trees on development sites. In this regard, any fencing required to be constructed around the TPZ is to be in accordance with AS4687 Temporary fencing and hoardings.

21. **Canopy Tying**. Where possible tree branches overhanging the construction zones are to be tied back to the main trunk rather than pruned.

DURING CONSTRUCTION

Unless otherwise specified, the following conditions in this Part of the consent must be complied with at all times during the construction period. Where applicable, the requirements under previous Parts of the consent must be implemented and maintained at all times during the construction period.

22. **Critical stage inspections.** The person having the benefit of this consent is required to notify the Principal Certifying Authority during construction to ensure that the critical

ITEM 1 (continued) **ATTACHMENT 1**

stage inspections are undertaken, as required under clause 162A(4) of the *Environmental Planning and Assessment Regulation 2000.*

23. **Sediment/dust control.** No sediment, dust, soil or similar material shall leave the site during construction work.

24. **Use of fill/excavated material.** Excavated material must not be reused on the property except as follows:
    c. Fill is allowed under this consent;
    d. The material constitutes Virgin Excavated Natural Material as defined in the *Protection of the Environment Operations Act 1997;*
    e. the material is reused only to the extent that fill is allowed by the consent.

25. **Construction materials.** All materials associated with construction must be retained within the site.

26. **Site Facilities**
    The following facilities must be provided on the site:
    (a) toilet facilities in accordance with WorkCover NSW requirements, at a ratio of one toilet per every 20 employees, and
    (b) a garbage receptacle for food scraps and papers, with a tight fitting lid.

27. Site maintenance
    The applicant must ensure that:
    f. approved sediment and erosion control measures are installed and maintained during the construction period;
    g. building materials and equipment are stored wholly within the work site unless an approval to store them elsewhere is held;
    h. the site is clear of waste and debris at the completion of the works.

28. **Work within public road.** At all times work is being undertaken within a public road, adequate precautions shall be taken to warn, instruct and guide road users safely around the work site. Traffic control devices shall satisfy the minimum standards outlined in Australian Standard No. AS1742.3-1996 “Traffic Control Devices for Work on Roads”.

29. **Tree protection – no unauthorised removal.** This consent does not authorise the removal of trees unless specifically permitted by a condition of this consent or identified as approved for removal on the stamped plans.

30. **Tree protection – during construction.** Trees that are shown on the approved plans as being retained must be protected against damage during construction.

31. **Tree works – Australian Standards.** Any works approved by this consent to trees must be carried out in accordance with all relevant Australian Standards.

ITEM 1 (continued) **ATTACHMENT 1**

32. **Tree works – arborist supervision.** A Consultant Arborist must be appointed to oversee all works, including demolition and construction, in relation to the trees identified for retention on the site.

33. **Tree works – provision of arborist details.** Council is to be notified, in writing, of the name, contact details and qualifications of the Consultant Arborist appointed to the site. Should these details change during the course of works, or the appointed Consultant Arborist alter, Council is to be notified, in writing, within seven working days.

34. **Underground Utilities**. Any utility services to be located underground within the TPZ are to be undertaken utilizing excavation techniques that prevent or minimize damage to structural roots (roots greater than >25mm diameter). To prevent soil compaction and root damage these works should be conducted with non-motorised hand tools or directional drilling.

35. **Excavation within TPZ**. Any excavation or grading/re-grading within the identified TPZ's of trees to be retained shall be carried out by hand using manual, non-motorised hand tools. Roots greater than 25mm are not to be damaged or severed without the prior written approval of the Project Arborist.

36. **Fill Requirements**. All fill to be placed within the Tree Protect Zones of neighboring trees is to be gap graded structural soils which allows for gaseous exchange and future root growth. The Project Arborist is to confirm suitability of the proposed material prior to installation.

37. **Tree Pruning.** All tree pruning work is to be carried out in accordance with AS4373 Pruning of amenity trees and Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal (2016) and undertaken by an Arborist with minimum AQF Level 3 qualifications.

38. **Discovery of Additional Information** - Council and the Principal Certifying Authority (if Council is not the PCA) must be notified as soon as practicable if any information is discovered during demolition or construction work that has the potential to alter previous conclusions about site contamination.

39. **Contaminated soil** - All potentially contaminated soil excavated during construction work must be stockpiled in a secure area and be assessed and classified in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) before being transported from the site.

40. **Transportation of wastes** - All wastes must be transported in an environmentally safe manner to a facility or place that can lawfully be used as a waste facility for those wastes. Copies of the disposal dockets must be kept by the applicant for at least 3 years and be submitted to Council on request.

PRIOR TO OCCUPATION CERTIFICATE

ITEM 1 (continued) **ATTACHMENT 1**

An Occupation Certificate must be obtained from a Principal Certifying Authority prior to commencement of occupation of any part of the development, or prior to the commencement of a change of use of a building.

Prior to issue, the Principal Certifying Authority must ensure that all works are completed in compliance with the approved construction certificate plans and all conditions of this Development Consent.

Unless an alternative approval authority is specified (eg Council or government agency), the Principal Certifying Authority is responsible for determining compliance with conditions in this Part of the consent. Details to demonstrate compliance with all conditions, including plans, documentation, or other written evidence must be submitted to the Principal Certifying Authority.

OPERATIONAL CONDITIONS

The conditions in this Part of the consent relate to the on-going operation of the development and shall be complied with at all times.

41. **Hours of Operation**. The hours of operation and use of the field is to be in accordance with the following:

- Winter Season: 4pm to 9:30pm Monday to Thursday during April to August. The lights are to be turned off as early as practicable after completion of training and/or competition, and in any case no later than 9:30pm. A minimum of 20 minutes is to be maintained between sessions to facilitate the efficient use of off-street parking spaces.

- Summer Season: 6pm to 9pm Monday to Thursday during September to March. The lights are to be turned off as early practicable are completion of training and/or competition, and in any case no later than 9pm. A minimum of 20 minutes is to be maintained between sessions to facilitate the efficient use of off-street parking spaces.

42. **Acoustic recommendations.** The recommendations of the acoustic assessment prepared by EMM Consulting dated 3 December 2018 are to be implemented between the hours specified in condition 41. Management from the sporting organisation using the park is to be employed during the evenings to instruct spectators to be positioned on the western side lines to minimise noise to the adjoining residential properties. Management is also to encourage persons using the field to keep noise to a minimum during the evening period (after 6pm) when transiting from the fields to the car park.

ITEM 1 (continued) **ATTACHMENT 1**

43. **Light Spill –** The light spill at the adjoining residential boundaries to comply with the requirements of AS 4282 – Control of the obtrusive effects of outdoor lighting.

44. **Light Spill Validation Report –** A validation report must be obtained from a suitably qualified and experienced lighting engineer prior to commencing use of the light poles at the playing fields for sporting activities. The report shall demonstrate and certify that light spill impacts comply with the Australian Standard AS4282-1997 'Control of Obtrusive Effects of Outdoor Lighting'. In the event the report fails to demonstrate and certify that the lights comply with the Australian Standard, a modification to the installation of the lighting is to be made and accompanied by a report from a lighting engineer to Council demonstrating that the modified lighting complies with the Australian Standard. The lighting shall not be used until such time that compliance with the Australian Standard is met.

45. **Automatic light switch –** An automated curfew switch is to be installed, along with manual off switches, for each light pole.

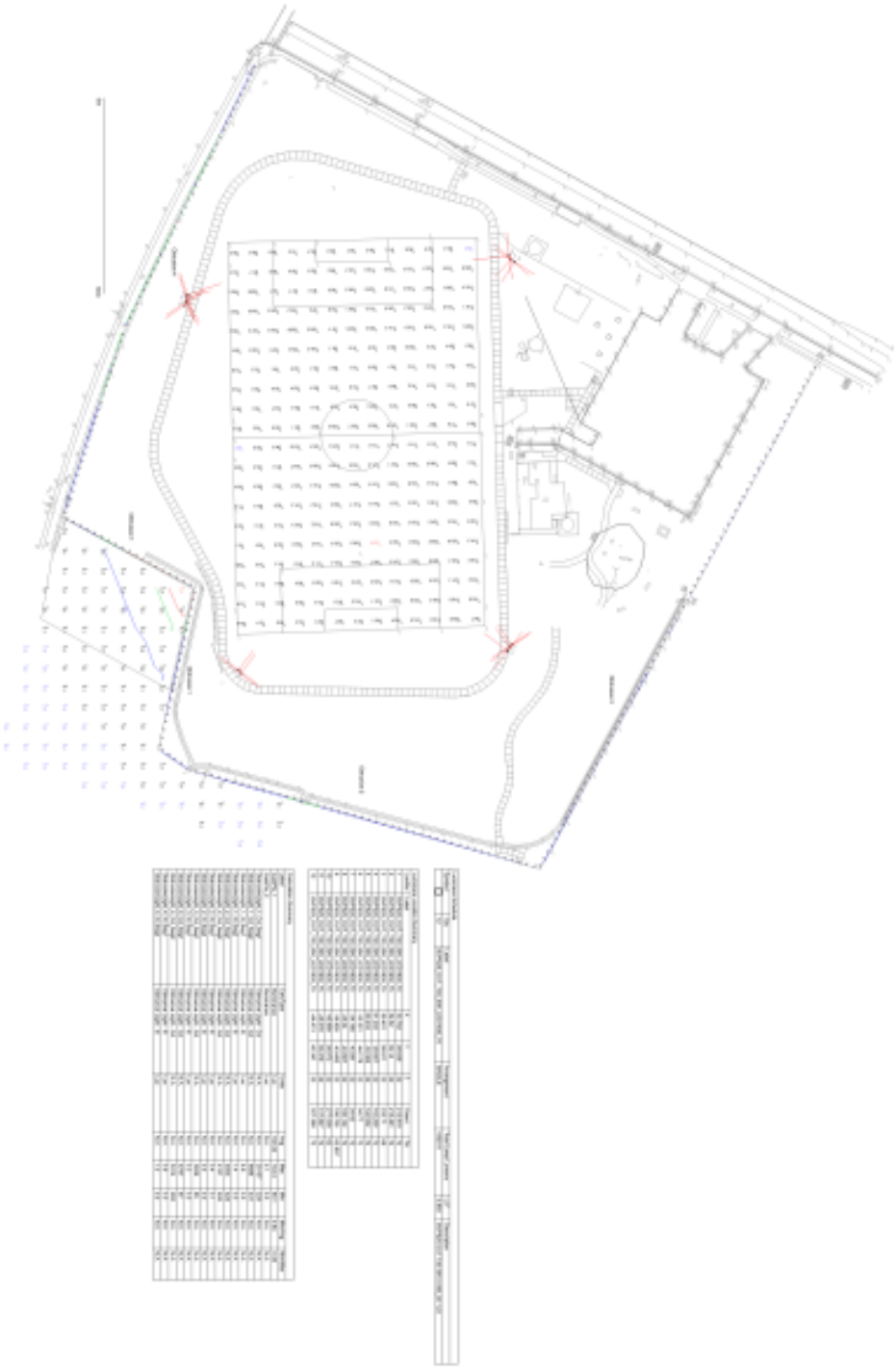
46. **Light curfew –** The lights are to be fitted with a timing device (or similar) that cuts power to the lights 15 minutes after the conclusion of the period referred to in condition 41.

47. **Offensive noise** - The use of the premises must not cause the emission of 'offensive noise' as defined in the *Protection of the Environment Operations Act 1997.*

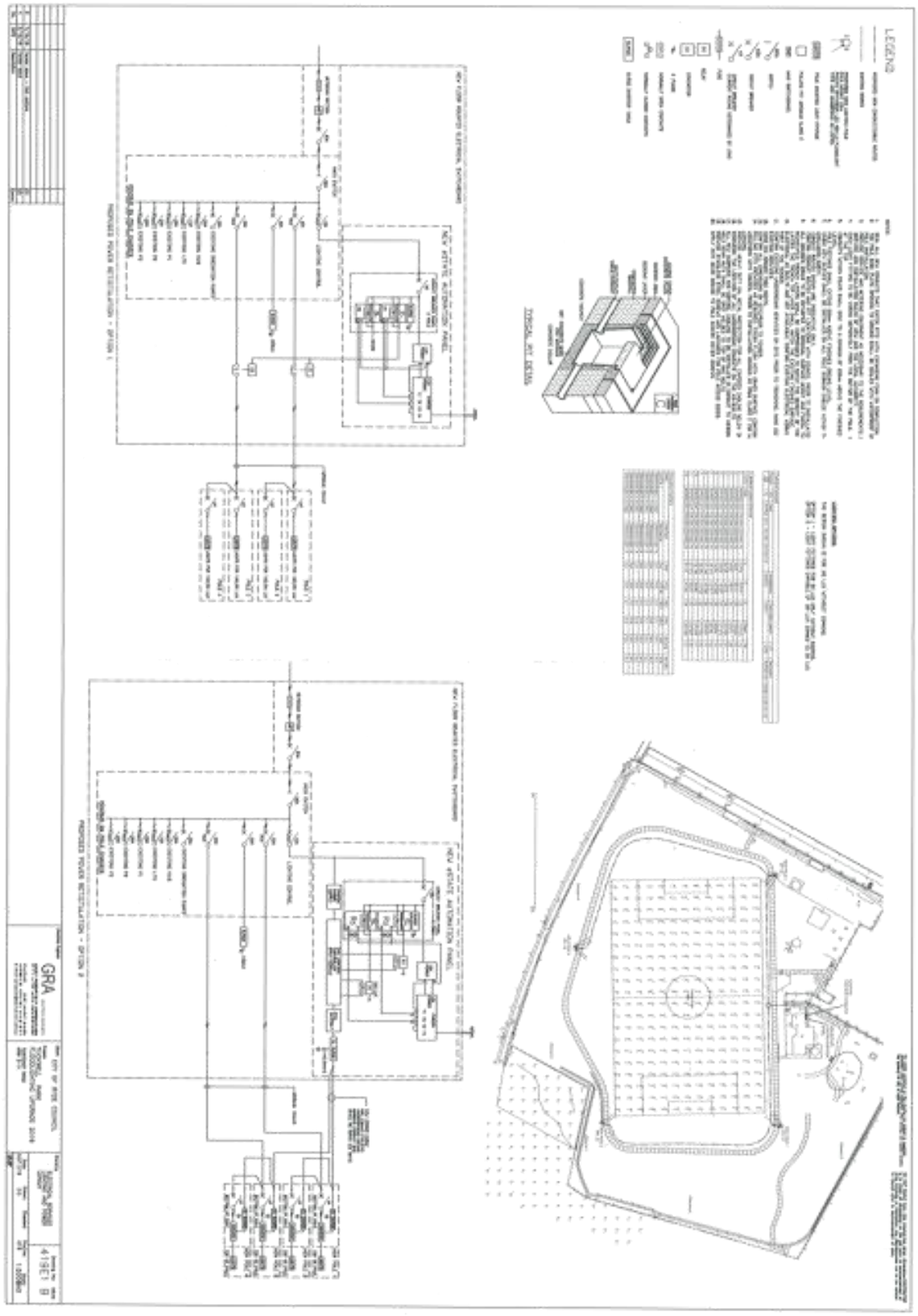
48. **Acoustic/Noise Validation Report –** If required by Council, a validation report must be obtained from a suitably qualified and experienced acoustic engineer. The report shall demonstrate and certify that the proposal achieves compliance with the noise prediction results contained within the Tuckwell Park Lighting Installation Acoustic Assessment (Report No. J180301 RP1) dated 3 December 2018, prepared by EMM.

ITEM 1 (continued) **ATTACHMENT 2**

ITEM 1 (continued) **ATTACHMENT 2**



ITEM 1 (continued) **ATTACHMENT 2**



ITEM 1 (continued) **ATTACHMENT 2**

SURE Environmental

Statement of Environmental Effects

Tuckwell Park – Sports field lighting

May 2019

ITEM 1 (continued) **ATTACHMENT 2**

Document control

SURE ENVIRONMENTAL			
Project:	Tuckwell Park – Sports field lighting Review of Environmental Factors		
Version	Date	Prepared by	Reviewed by
Draft	18 August 2018	JD	ED
Final	15 March 2019	JD	ED
Final v2	13 May 2019	JD	ED

Table of contents

1 Introduction

This Statement of Environmental Effects (SEE) supports the City of Ryde Council's development application to install sports field lighting at Tuckwell Park, Macquarie Park (refer to Figure 1-1 and Figure 1-2).

The City of Ryde Sport and Recreation Strategy 2016 - 2026 identified the need for infrastructure improvements within sports fields, such as floodlighting, to maximise sporting use to cater for the growing population.

To this end, reports were commissioned to assist in determining the suitability of lighting the sports field at Tuckwell Park. This included a Traffic Impact Assessment, Acoustic Report and Light Spill Report which are discussed within this SEE. Community feedback was also sought; with consultation undertaken through eNewsletters, door knocking, park signs, drop-in sessions and Council's 'Have Your Say' portal.

All feedback received from the community was reviewed and considered in conjunction with all technical reports commissioned prior to determining a way forward. This has resulted in the identification of Tuckwell Park for the proposed installation of sports field lighting.

1.1 Proposal identification

The City of Ryde Council proposes to install sports field lighting at Tuckwell Park. The new lighting is part of the City of Ryde's sports field lighting expansion program to improve community access to facilities for sports and general recreation.

The main elements of the proposal are:

- Install four new poles with lights around the field
- Trenching to lay cables and conduits to provide power to the lights.

Tuckwell Park has one sports field used mainly for soccer and cricket, as well as a new basketball court. The sports field is not currently lit. The new lighting is required to extend the availability for sports field usage for training purposes and will comply with Australian Standard (AS) 2560.2.3 (sports lighting for football all codes).

ITEM 1 (continued) **ATTACHMENT 2**

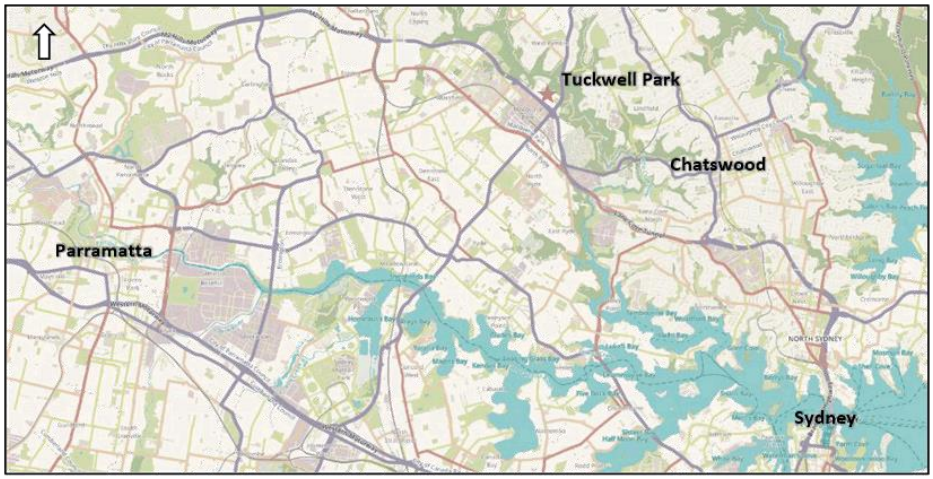


Figure 1-1 Tuckwell Park – regional context

ITEM 1 (continued) **ATTACHMENT 2**

Figure 1-2 Tuckwell Park – proposal site

1.1 Purpose of the report

This Statement of Environmental Effects (SEE) supports the City of Ryde Council's development application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the proposed development.

The purpose of this SEE is to describe the proposal, state its compliance with relevant planning controls and assess any likely environmental, social or economic impacts in accordance with Section 4.15 of the EP&A Act.

The following terms are used in this SEE:

- The 'proposal' refers to the scope of works described in Section 4
- The 'proposal site' refers to the area shown in Figure 1-2.

2 Need and options considered

The Ryde community has said that they value their open space, and recreation and sporting facilities. The City of Ryde Council plays a key role in providing facilities for the community and sporting opportunities in the wider region. Council aims to "*contribute to the lifestyle, health and wellbeing and social cohesion of the community*" through its "*role in sport and recreation planning and management*". Council acknowledges that a primary focus must be on increasing participation for local residents through provision of adequate facilities. Respondents to a City of Ryde Council community survey about sport and recreation in the local government area (LGA) identified improving the quality of sports fields (including lighting) as their top priority.

An increasing population and changing demographics create a challenge. The City of Ryde's population grew by almost 8% between 2011 and 2015 and is forecast to grow by around 18% by 2031, which equates to an additional 20,500 residents. Without additional open space areas and/or infrastructure upgrades, the use of current recreation facilities and sporting fields will significantly increase with this growth. This will cause intensive use of existing outdoor playing fields, which is expected to result in overuse and adversely impact on the standard and usability of these facilities.

The City of Ryde Council's Sport and Recreation Strategy 2016 - 2026 (Ryde, 2017) provides a framework for ongoing provision, management and development of recreational facilities across the City of Ryde. Maximising use of existing sporting fields is a focus of the strategy. The strategy also identified that there is a greater demand for floodlighting of facilities so that people can participate at times that are convenient to them or to reduce sun exposure. The demand for sporting facilities is particularly high for midweek winter season training and is increasing for summer social sports competitions.

Installation of lighting would substantially increase the availability of a field for training and social sports for multiple field users. This would provide sporting opportunities for a growing community and relieve overused facilities. The proposal is consistent with the objectives of the City of Ryde's Sport & Recreation Strategy 2016 - 2026.

3 Existing environment

Tuckwell Park comprises the following lots:

- Lot 1 DP 578025
- Lot 72 DP 598636
- Lot 2 DP 587346.

Tuckwell Park is bounded by Lane Cove Road to the south east, Fontenoy Road to the south west, Tuckwell Place to the north west and residences to the north east. Vehicular access to the park is from Fontenoy Road, via a car park with around 50 spaces. Pedestrian access is from Lane Cove Road, Fontenoy Road and Tuckwell Place.

The park has one sports field used for cricket in summer and soccer in winter, and a basketball court. The sports field is not currently lit and use is confined to daylight hours.

The park is located in a residential area and is an important passive recreational area as well as a sporting facility. Planted native trees are located around the boundary of the park and a walking path with picnic tables surrounds the sports field.

4 Description of the proposal

4.1 The proposal

Lighting

- Install four new 22m high light poles (refer to Figure 4-1)
- Install 12 LED lights on the four new poles. The LED lights provide light output that complies with AS 2560.2.3 Lighting for football all codes.

Lights would be used for training and social sports. The proposed hours of operation of the lights are:

- Winter (April to August): Monday to Thursday – 4pm to 9:30pm
- Summer (September to March): Monday to Thursday – 6pm to 9pm.

The lights would only be turned on by authorised persons and timing switches would be installed which ensure the lights cannot operate past a specified time.

Power supply

The existing main switchboard would be retained. New lighting control would be installed and a new conduit system to carry power from the switchboard to the four new poles.

Earthworks

Trenching to install power cables to each pole location would be required. Trenches would be around 600 millimetres deep. Trenching would be mainly around the edges of the playing fields. Conduits and cabling would be installed in the trenches. Trenches would be backfilled immediately. Any excess material would be appropriately reused onsite or appropriately disposed of offsite.

Excavations at each pole location would be required to construct the pole footings. The poles would sit on piers up to around 12 metres deep. The piling method would depend on geotechnical investigation but may be bored piles or micropiling.

ITEM 1 (continued) **ATTACHMENT 2**

Figure 4-1 Proposed lighting

4.2 Site suitability

The proposed lighting will be located around an existing sporting field. The proposed lighting will be consistent with the existing uses of the park. The site is suitable for the proposed development.

4.3 Construction activities

The proposal would require the following construction activities:

- Install erosion and sediment controls
- Install footings for new poles. This would require excavation and piling

- Pour concrete for new footings
- Install new light poles using a crane
- Install new lights
- Dig trenches using a trencher
- Install conduits and cabling for power
- Backfill trenches
- Remove erosion and sediment controls.

4.4 Plant and equipment

- Delivery trucks
- Truck and dog
- Crane
- Trenching machine
- Excavator
- Piling rig
- Hand tools
- Concrete truck
- Concrete pump.

4.5 Compound site

No compound site would be required. A storage area for plant and equipment, cables and conduits, and other materials may be required. This would be located within the park.

4.6 Traffic and access

Site access would be from Fontenoy Road. Site workers' vehicles would be parked in car park at the park.

4.7 Public utilities adjustment and property acquisition

The proposal would not require the adjustment of any public utilities. The proposal is located on City of Ryde Council land and no property acquisition would be required.

4.8 Construction hours and timeframe

The proposal would start in mid-2019 and would take around 12 weeks to complete. The proposed works would be conducted within standard working hours only. No night works would be required.

Standard working hours:

Monday to Friday – 7am to 6pm

Saturday- 8am to 1pm

Sundays and Public Holidays- No work.

5 Statutory and planning framework

5.1 Environmental Planning and Assessment Act 1979

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and its associated regulations provide the framework for assessing environmental impacts and determining planning approvals for developments and activities in NSW. The EP&A Act also establishes State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) which may include provisions relevant to the project.

This SEE has been prepared under Part 4 of the EP&A Act and addresses the obligations of the applicant (City of Ryde Council). Development applications must be evaluated against Section 4.15 of the EP&A Act (refer to Table 5-1).

Table 5-1 Section 4.15 of the EP&A Act

Matters for consideration			Addressed in SEE
(a)	The provisions of		
	(i)	any environmental planning instrument	Section 5.2
	(ii)	any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved)	Not applicable
	(iii)	any development control plan	Section 5.2.2
	(iiia)	any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4	Not applicable
	(iv)	the regulations (to the extent that they prescribe matters for the purposes of this paragraph)	The proposal complies with the planning regulations
	that apply to the land to which the development application relates		
(b)	the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality		Section 6
(c)	the suitability of the site for the development		Section 4.2
(d)	any submissions made in accordance with this Act or the regulations		No submissions have been made to date
(e)	the public interest		Section 2

5.2 Local environmental plans

5.2.1 Ryde Local Environmental Plan 2014

The proposed works are located within the Ryde Local Government Area (LGA) on land zoned as RE1 public recreation. A list of the required work activity within the Ryde LGA zones is provided in Table 5-2.

Table 5-2 Zoning and consent requirements (Source: Ryde Local Environmental Plan 2014).

Zone	Category	Relevant objectives	Relevant work activity	Consent requirements
RE1	Public recreation	• To enable land to be used for public open space or recreational purposes. • To provide a range of recreational settings and activities and compatible land uses. • To protect and enhance the natural environment for recreational purposes.	All proposed work	The playing field is defined as a 'recreation area' under the LEP. Consent is required for development of a recreation area.

The proposed work is consistent with the objectives of the zone by enabling increased use of the land for recreational purposes. The range of recreational settings and activities would be positively impacted and the proposal is expected to have a minimal impact on the natural environment.

Additional LEP provisions are addressed in Table 5-3.

Table 5-3 Relevant LEP provisions

Clause	Details	Relevant to proposed development
5.10 Heritage conservation	The objectives of this clause are as follows: • to conserve the environmental heritage of Ryde, • to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views, • to conserve archaeological sites, • to conserve Aboriginal objects and Aboriginal places of heritage significance.	No heritage items are located in the vicinity of the proposed works
6.2 Earthworks	The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land. Development consent is required for earthworks unless the earthworks are ancillary to development for which development consent has been given.	Earthworks are required for the proposed work. However additional consent for these earthworks is not required

5.2.2 Development control plan

Components of the City of Ryde Development Control Plan 2014 that are considered relevant to the proposal have been taken into consideration (refer to Table 5-4).

Table 5-4 Relevant DCP provisions

DCP section	Requirements	Where addressed in SEE
7.2 Waste minimisation		
1.7 Application requirements	All applications for development must be accompanied by a Site Waste Minimisation and Management Plan (SWMMP)	Section 6.5 Waste management
2.4 Demolition and construction	A dedicated area is to be allocated on-site for the stockpile of materials for reuse, recycling or disposal and for site waste bins (for surplus and unwanted materials). The siting is to take into account environmental factors including slope, drainage, location of watercourses proximity to native vegetation and amenity impacts (including impacts of emissions from the waste, noise from collection activity) on occupants of neighbouring properties.	Section 6.5 Waste management
8.1 Construction activities		
2.1 Sediment and other pollution controls	**General requirements** • Counter the effects of soil erosion and sedimentation • Generally apply the principles of ecologically sustainable development (ESD) • Employ best management practices to mitigate soil erosion and trap pollutants at source **Erosion and sediment control plan** An Erosion and Sediment Control Plan is required for construction sites that will disturb an area of land between 250 m^2 and 2500 m^2. This section provides details on what is required in an erosion and sediment control plan. Erosion and Sediment Control Plans submitted are to be concept plans of sufficient detail to determine whether the site can be developed in the manner suggested whilst incorporating adequate erosion control. Erosion and sedimentation control measures, once installed are to be maintained so as to ensure their continued proper operation until such time as development activities have been completed and the site fully stabilised. Failure to effectively maintain sedimentation controls	Section 6.1 Soil and water

ITEM 1 (continued) **ATTACHMENT 2**

DCP section	Requirements	Where addressed in SEE
	may result in the responsible individual/corporation receiving an on-the-spot fine of up to $1500 under the *Protection of the Environment Operations Act 1997*.	
2.3 Limiting erosion	**Site clearing** • Minimise ground disturbance • Fence off undisturbed areas • Define vehicle access and turning areas • Stage work and stabilise ground progressively **Diverting water** • Where possible, runoff should be redirected around disturbed areas **Vehicle access and road cleaning** • Stabilised vehicular access must be used for site access • Public roads must be kept clear of mud and dirt tracked from the site	Section 6.1 Soil and water
2.4 Treatment of sediment laden runoff	**Sediment fences** • Details purpose, installation, maintenance of sediment fences Other sediment retention devices • Cover stockpiled material with plastic sheeting **Pumping water from excavations** • Typically water pumped from an excavation will contain sediment and therefore cannot be directly pumped to the drainage system • Waste water cannot be discharged to the stormwater system unless it is visually free from grease, oil, solids and unnatural discolouration and free from settleable matter, in accordance with the *Protection of the Environment Operations Act 1997*	Section 6.1 Soil and Water
2.5 Tree Preservation and Protection Matters	**Relevant tree protection measures** • Fence off all areas which are not to be disturbed to prevent vehicles, materials and refuse being placed in those locations. • Avoid compaction of ground around trees (generally caused by vehicles driving through these areas) • Avoid stockpiling of material within the dripline of trees • Trenches for services shall be located outside the dripline of all trees. If this is not possible, the services shall be hand dug under the trees roots. At any time where a pipe is being laid within the dripline of a tree that is to be retained, or the dripline of a tree	Section 6.6 Ecology

ITEM 1 (continued) **ATTACHMENT 2**

DCP section	Requirements	Where addressed in SEE
	on an adjoining property, a qualified arborist must be on-site to oversee the operation. • All roots in excess of 25 mm Ø that must be severed shall be cleanly cut (not with a backhoe bucket), and be kept moist at all times and not be left exposed to the air.	
2.7 Builders identification signage	Displayed at all construction sites shall be a sign indicating the builder's or contact person's name and contact phone number.	Section 6.8 Socio-economic
4.1 Safety of pedestrians and traffic	**Relevant traffic management measures** • Traffic control devices shall satisfy the minimum standards outlined in AS 1742.3-1996 Traffic Control Devices for Works on Roads • Consideration must be given to the signage of the work site no matter how brief the occupation of the site may be. This should include: ○ provisions of adequate warning of changes in the road surface or in driving conditions and of personnel or plant engaged in work on the road ○ adequate instruction of road users, including pedestrians and cyclists, and their guidance safely through, around or past the work site ○ protection of workers.	Section 6.2 Traffic and Access
4.6 Hours of operation	• All construction and associated work is to be restricted to between the hours of 7 am and 7 pm Mondays to Fridays and between 8 am and 4 pm on Saturday. No work is to be carried out on Sunday or public holidays. • Council may vary these conditions if the applicant provides a formal submission demonstrating that due to the nature of the work being undertaken, or the location of the site, residents in the vicinity of the construction site will not be adversely affected.	Section 4.8 Construction hours and timeframe
4.7 Parking of construction vehicles	• Parking of vehicles on the public footpath is an offence under the *Roads Act 1993*	Section 6.2 Traffic and Access
5.0 Notification of affected property users	• The applicant is responsible for notifying all property owners when access to their property will be necessarily restricted. A minimum of 48 hours notice shall be given and all endeavours shall be taken to ensure the period of disruption is kept to a minimum.	Section 6.2 Traffic and Access
9.5 Tree preservation		
1.2 Objectives of this part	**The objectives of this part are:**	Section 6.6 Ecology

Final v1 17

DCP section	Requirements	Where addressed in SEE
	• To maximise a sustainable Urban Forest canopy across the City of Ryde • To conserve trees of ecological, heritage, aesthetic and cultural significance • To protect and manage individual trees as an important community asset • To establish the procedural framework and requirements governing the pruning, removal and subsequent replacement of trees within the City of Ryde • To ensure all new development considers existing trees on the development site and provides opportunity for the healthy growth of large trees The following are exempt works: • Tree works on a tree on land owned or under the care, control and management of Council where the Tree Works are carried out by Council except if any tree: • is listed on the City of Ryde Significant Tree Register • is or is located on a site classified as being part of a vulnerable, threatened or endangered ecological community or provides or has the potential to provide habitat for native fauna or fauna classified as vulnerable or threatened under the Biodiversity Conservation Act 2016 or the Environmental Protection and Biodiversity Conservation Act 1999 • is or forms part of a heritage item • is within one of the five heritage conservation areas within the City of Ryde.	

5.3 Other relevant legislation

5.3.1 Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act 1997 (POEO Act) regulates pollution and includes provision for issuing Environmental Protection Licences (EPLs). The POEO Act is administered by EPA and provides for the control and regulation of water, air and noise pollution, waste transport and disposal and littering.

The POEO Act prohibits the undertaking of development works without a licence for scheduled activities (as identified in Schedule 1 of the POEO Act). The POEO Act also prohibits the

undertaking of polluting activities without a licence (both scheduled and unscheduled). No scheduled activity was considered relevant to the proposal.

There is a requirement under the POEO Act (Part 5.7, cl.147-149) to report any pollution incidents to relevant authorities where material harm to the environment is caused or threatened. It is also an offence under the POEO Act (Part 5.2, cl.116) to:

> "*wilfully, or negligently cause any substance to leak, spill or otherwise escape (whether or not from a container) in a manner that harms or is likely to harm the environment.*"

An incident management procedure, with notification requirements, would be included in the contractor's CEMP.

5.3.2 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) aims to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

An assessment of the potential impacts of the proposal on threatened species, populations, ecological communities and areas of outstanding biodiversity value listed in the BC Act must be undertaken in accordance with section 7.3 of the act (5-part test). There are no records of threatened species or communities in the vicinity of the proposal and the proposal would not remove any vegetation.

5.3.3 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act of 1974* aims to conserve nature, habitat, ecosystems, ecosystem processes and biological diversity at the community, species and genetic levels. Under this Act all native fauna is protected, threatened or otherwise.

The National Parks and Wildlife Amendment Act 2010

This Act is to amend the *National Parks and Wildlife Act of 1974* to make further provision to include the protection of Aboriginal objects and places. The changes include new offences relating to harm, or desecration of, an Aboriginal object or declared Aboriginal Place. Harm includes destroying, defacing damage or moving items or places without consultation.

The Due Diligence code of Practice for the protection of Aboriginal Objects in NSW (DECCW 2010) was introduced to assist individual and organisations to exercise due diligence when carrying out activities that have the potential to harm Aboriginal Objects and to determine whether they should apply for Aboriginal Heritage Impact Permit (AHIP). The proposal is unlikely to impact Aboriginal heritage. An assessment of potential impacts is provided in section 6.10.

5.3.4 Heritage Act 1977

The NSW *Heritage Act 1977* is a statutory tool designed to conserve the cultural heritage of NSW and used to regulate development impacts on the state's heritage assets. Administered by the NSW Heritage Office, the Act details the statutory requirements for protecting historic buildings and places and includes *any place, building, work, relic, movable object, which may be of historic, scientific, cultural, social, archaeological, natural or aesthetic value.*

There are no heritage items located in the vicinity of the proposal.

5.3.5 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land'. These are considered in section 6 of this SEE. The proposed works do not have the potential to significantly impact on matters of environmental significance, and therefore a referral is not required.

6 Environmental assessment

6.1 Soil and water

6.1.1 Existing environment

JK Geotechnics carried out geotechnical investigations at Tuckwell Park to inform the light pole design.

Topography

The topography of the playing fields is flat and the ground in the park slopes away from the field to the north.

Geology

The geology at Tuckwell Park is Hawkesbury Sandstone (JK Geotechnics, 2018).

Soils

Fill was found to a depth of three metres around the northern part of the sports field. The fill was predominantly a silty clay and contained variable amounts of igneous, sandstone and ironstone gravel. Residual silty clays were around the southern part of the sports field (JK Geotechnics, 2018)

Contaminated land

A search of the Environmental Protection Authority Contaminated Land Record on 2 August 2018 found that there are no records of contaminated sites in the City of Ryde LGA. Fill was used to form the fields and there is potential for subsurface contaminated material to be present. However, previous work in the park by the City of Ryde Council did not encounter contaminated material.

Acid sulphate soils

The park is not mapped as having potential for Acid Sulphate Soil.

Waterways

There are no creeks or drainage channels in the vicinity of the park. There are minor stormwater channels around the north of the park, connecting to the council stormwater system

6.1.2 Potential impacts

Construction

There is potential for erosion and sediment loss during excavation around the northern part of the sports field due to the sloping topography. Heavy rain during excavation has potential to result in sediment laden runoff entering the stormwater system. However, given the small excavation area this is expected to be minor.

Around 300 metres of trenching would be required. However, trenches would be shallow and be progressively backfilled. This would minimise the potential of sediment loss during the work. Construction of pole footings would require temporary stockpiling of material that has potential to be lost during heavy rain. Fuel spills from plant have the potential to cause localised ground

contamination. Given the distance of all excavation from a waterway and implementation of management measures, the impact on water courses from the work is expected to be minimal.

6.1.3 Safeguards and management measures

- An Erosion and Sedimentation Control Plan (ESCP) will be prepared for the work. The ESCP will incorporate specifications outlined in the NSW Soils and Construction – Managing Urban Stormwater Volume 1 "the Blue Book" (Landcom, 2004)
- Environmental safeguards (e.g. sediment fences, booms etc.) are to be installed consistent with "Managing Urban Stormwater: Soils and Construction" (4th Edition Landcom, 2004, aka the Blue Book (see http://www.landcom.com.au/whats-new/the-blue-book.aspx)) to ensure that there is no escape of sediment into any drainage lines
- Erosion and sediment controls will be maintained regularly until the proposed works are completed (including the removal of any built up soils and materials)
- Excavated material will be classified in accordance with the Environmental Protection Authority (EPA) *Waste Classification Guidelines* prior to disposal
- OEH will be notified of any incidents resulting in environmental harm as per Part 5.7 of the *Protection of the Environment Operations Act 1997*
- Spill kits will be located on site at all times during construction. All staff must be inducted into the incident emergency spill procedures and made aware of the location of emergency spill kits
- All fuels, chemicals, and liquids will be stored at least 40 metres away from any drainage lines or vegetated areas and will be stored in an impervious bunded area within the compound site. The volume of the bunded area would be at least 110% of the volume of the stored tanks
- The refuelling of plant and machinery will be carried out in an impervious bunded area
- Any material transported onto pavement surfaces will be swept and removed at the end of each working day
- Trenches will be backfilled as soon as practicable
- All trenches will be backfilled and stabilised in advance of heavy rain.

6.2 Traffic and access

A Traffic and Parking Assessment (Bitzios Consulting, 2018) for the proposal was carried out by Bitzios Consulting. This section summaries the assessment report and the full report is provided in Appendix A.

6.2.1 Existing environment

Site inspections were carried out on 23 and 25 November 2018 to determine existing conditions.

Access and parking

Tuckwell Park is located off Fontenoy Road in Macquarie Park, near Lane Cove Road. It has an offstreet car park with a capacity of 50 vehicles. This is accessed by separate entry and exit driveways which are located around 15 metres away from one another. A footpath provides access to the north of the site via Tuckwell Place.

The park is used for sporting events throughout the week. In summer the field is used for junior cricket and in summer for all ages soccer. No organised training currently takes place at the park.

Car park spaces are free to use and have a three hour limit between 07.00am and 17.00pm, Monday to Friday. It is unrestricted parking at other times. The gates to the car park are opened at sunrise and are locked at sunset, closing the car park overnight. Figure 6-1 shows the available parking in and around Tuckwell Park.

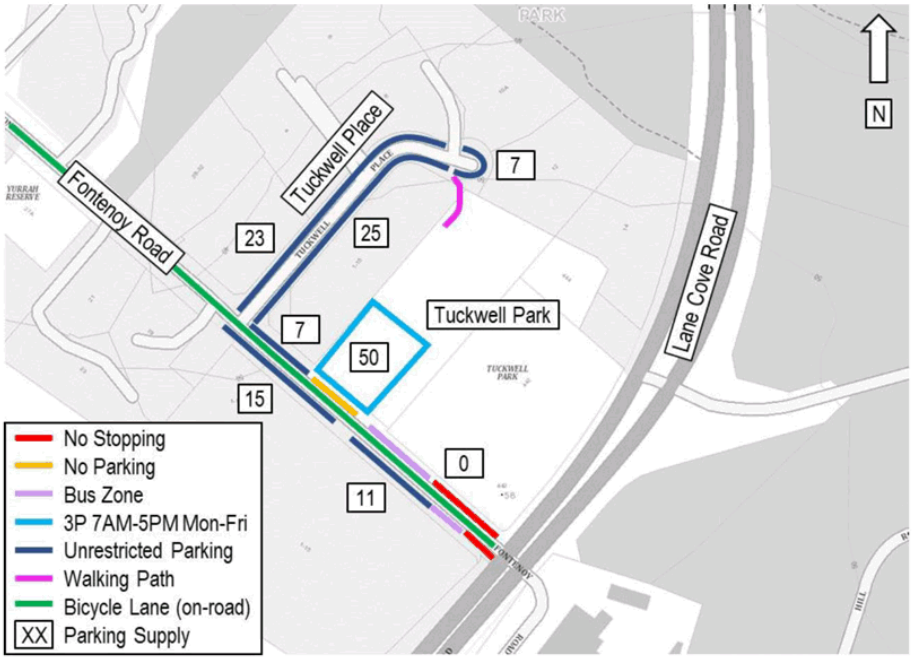


Figure 6-1 Available parking (estimated) at Tuckwell Park (Bitzios, 2018)

Bitzios carried out a parking occupancy survey on Tuesday 23 October 2018 and Thursday 25 October 2018 between the 11am – 13:30pm and 5pm – 9pm each day. The observations made during the assessment are provided in Table 6-1 and Table 6-2. In summary, the park car park is under used and on-street parking is heavily used in the area.

Table 6-1 Parking occupancy around midday

Tuesday	Thursday
• The Tuckwell Park car park had low utilisation • Several people would drive to the park for lunch leave after a short time • There were no instances of a driver dropping someone off and leaving • The on-street parking on Fontenoy Street was heavily used • The on-street parking on Tuckwell Place was highly used • Maximum usage of the car park was 18%.	• Nobody was observed to use the sports fields or playgrounds • A few cars were observed to be parked • Landscape maintenance was being undertaken on the park • The on-street parking on Fontenoy Street was heavily used • The on-street parking on Tuckwell Place was highly used • Maximum usage of the car park was 42%.

Table 6-2 Parking occupancy in the evening

Tuesday	Thursday
• The car park had very low usage, with the majority of people walking to the park to utilise the facilities (maximum usage of 12%) • At the evening site visit, around four people were using the basketball courts. None of these people drove to the courts • No formal sport was being undertaken on the field • Less than five people at any one time were seen in the evening to be using the field for light recreation such as walking and jogging • There were no instances of a driver dropping someone off and leaving • The on-street parking on Fontenoy Street had less utilisation in the evening than the morning • The on-street parking on Tuckwell Place was highly used.	• The car park had very low usage (maximum of usage of 10%) • Around three to four people were using the basketball court, none of which drove to the park • Several kids with their parents were using the playground • No organised sport was being conducted on the field • Most people observed that used the park walked to it.

Traffic conditions

Traffic conditions were observed during the site visits. During the afternoon peak period on Tuesday 23 October 2018 a 300 metre queue formed on Fontenoy Road southbound. However, no queue was observed on Thursday 25 October 2018. As the queue both quickly formed and cleared, and it only was observed on one of the site visits, it is considered likely that this was an unusual circumstance and not representative of the standard operational conditions of this road.

6.2.2 Potential operational impacts

Parking

The parking surveys indicated that the peak evening occupancy of the car park during the survey period was six vehicles, only 12% of the capacity of the car park. This suggests that the car park is currently heavily under used during evenings.

Organised sport is the most likely event that would cause the car park at Tuckwell Park to have insufficient capacity. Two scenarios were identified to assess the potential impact on parking at the park:

- Junior cricket matches in summer evenings
- Soccer matches played in the evenings

Junior cricket matches may require the following parking:

- 11 players per team (two teams) accessing the ground in the evening, assuming each player travels to the park by car at a rate of 1.5 people per vehicle
- One umpire, at a rate of one person per vehicle.

This would result in a car parking requirement of around 16 vehicles. If this was to occur during the observed peak occupancy of six vehicles, the total car park use would be 22 out of the 50 available spaces, an occupancy rate of 44%. Due to the lack of cricket nets at Tuckwell Park, the installation of lighting would not result in cricket training being held after sunset.

Soccer matches may require the following parking:

- 18 players per team (two teams) accessing the ground in the evening, assuming each player travels to the park by car at a rate of 1.5 people per vehicle (Gladesville Hornsby Football Association limits each team to 18 players per match)
- Three officials, at a rate of one person per vehicle.

This would result in a car parking requirement of around 27 cars per match. At peak use, this would result in around 33 parking spaces used (66%). This indicates that that the Tuckwell Park car park would have sufficient capacity to operate for this situation. Currently, no soccer training is being held at the oval. The lighting of the oval may result in some teams wanting to use the field for training. The parking requirements for this are expected to be similar to those of the match outlined above.

It is expected that the installation of lighting at Tuckwell Park would not cause parking issues as the existing capacity is sufficient, and no additional parking bays would be required.

Traffic conditions

Evening sporting matches may increase the amount of traffic pressure on Fontenoy Road and the surrounding streets, however, it is considered to be negligible compared to the existing traffic conditions.

Additionally, the majority of traffic that would access Tuckwell Park would approach from Lane Cove Road, turning onto the northbound direction of Fontenoy Road, and then turn right into the Tuckwell Park car park. No traffic related issues were observed from this approach.

It is likely that the installation of lighting at Tuckwell Park would cause negligible traffic related issues.

6.2.3 Potential construction impacts

The playing field would be accessed from Fontenoy Street. The delivery of the light poles has potential to cause some minor disruption to traffic on surrounding roads. Other materials are not required in high volumes, therefore, the number of daily vehicle movements is expected to be low.

There is parking available for site workers in the car parks. There would be no impacts to residential parking or to private property access.

6.2.4 Safeguards and management measures

- Traffic controls will be established at the site for the delivery of the light poles and will satisfy the minimum standards outlined in AS 1742.3-1996 Traffic Control Devices for Works on Roads.
- Work vehicles would not obstruct vehicular or pedestrian traffic on roadways, or access to private driveways, public facilities or businesses, unless absolutely necessary and only if appropriate notification has been provided to potentially affected property owners, local residents and businesses.

6.3 Noise and vibration

A Noise Assessment (EMM, 2018) for the proposal was prepared by EMM. This section summaries the assessment report and the full report is provided in Appendix B.

The assessment concluded that the proposal is unlikely to cause offensive noise at nearby residential properties.

6.3.1 Existing environment

Noise sensitive receivers

The nearest noise sensitive receivers are generally around the northern side of the park, on Lane Cove Road and Tuckwell Place (refer to Figure 6-2).

Figure 6-2 Noise monitoring locations

Existing noise levels

In order to establish the existing ambient noise environment of the area, unattended noise monitoring was carried out at three locations around the park, near residential property boundaries (refer to Figure 6-2). The location of noise monitoring is representative of the location of the nearest sensitive receivers.

Background noise levels (RBLs) are provided in Table 6-3 and are mainly influenced by human activity, road traffic and rail noise.

Table 6-3 Existing background noise levels

Location	Measured background noise level, RBL (dB(A))			Measured L_{eq} (dB(A))		
	Day	Evening	Night	Day	Evening	Night
L1 – east	55	52	42	63	62	60
L2 – north	46	42	35	56	53	50
L3 - west	47	44	36	56	54	50

Note 1 Day: 7am-6pm Monday to Saturday, 8am-6pm Sunday and public holidays, Evening: 6pm to 10pm, Night: 10pm to 7am

In order to assess the potential noise impacts due to extended hours, noise levels have been adapted from past measurements by EMM at Meadowbank Park. Measurements were taken while soccer matches were being played with spectators watching, and while soccer training was occurring. Table 6-4 provides the results of measurements from Meadowbank Park. These noise levels can be applied to Tuckwell Park for assessment purposes.

Table 6-4 Noise levels during soccer matches

Location	Activity description	Measured background noise level, RBL (dB(A))				Comments
		L_{AFmax}	L_{AFmin}	L_{AE}	L_{Aeq}	
1	Soccer with spectators	75	50	88	64	70 to 100 people
2	Soccer with spectators	79	47	85	61	About 35 people
3	Soccer with spectators	79	45	82	61	About 35 people
4	Soccer	76	40	80	56	13 people
5	Soccer	74	41	75	53	10 people

6.3.2 Criteria

Noise criteria were derived for the following activities:

- Sporting activity noise
- Car park activity noise

Road traffic noise on public roads was also considered in accordance with the NSW Road Noise Policy. The policy provides criteria for residential land uses and also states where existing road

traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to +2 dB once feasible and reasonable mitigation is applied.

6.3.2.1 Sporting activity and car park activity noise

The Environmental Protection Authority's (EPA) Noise Policy for Industry is used to derive operating noise limits for industrial sites or processes. Noise is assessed in terms of intrusiveness and amenity. While the policy is not directly applicable to the proposed lighting installation, intrusiveness and amenity limits will be set to assess the potential for extended operating hours to result in offensive noise.

The intrusive noise criteria refers to noise that intrudes above the background level by more than 5 dB. The amenity noise criteria relate to existing noise. Where noise approaches base amenity noise criteria, then noise levels from new industries need to demonstrate that they will not be an additional contributor to existing noise. The fundamental difference being intrusiveness noise levels apply over 15 minutes in any period (day, evening or night), whereas the amenity noise levels apply to the entire assessment period (day, evening or night). No activity is planned for the night time period, therefore criteria for this period has not been included.

Intrusive noise

The intrusiveness noise trigger levels require that LAeq,15 minute noise levels from the site during the relevant operational periods (ie day and evening) do not exceed the RBL by more than 5 dB.

Table 6-5 presents the intrusive noise level determined for the site based on the adopted RBLs.

The background noise levels recorded at:

- L1 (east and south of park) have been adopted to define the intrusiveness noise level for residential assessment locations R1, R2 and R11
- L2 (north-western border of park) have been adopted to define the intrusiveness noise level for residential assessment locations R3 to R7 inclusive
- L3 (residence to west of park) have been adopted to define the intrusiveness noise level for residential assessment location R8 to R10.

Table 6-5 Intrusive noise levels

Assessment location	Time period	Adopted RBL (dB(A))	Project intrusiveness noise level $L_{eq(15\ minute)}$ (dB(A))
R1, R2, R11	Day	55	60
	Evening	52	57

Assessment location	Time period	Adopted RBL (dB(A))	Project intrusiveness noise level $L_{eq(15\ minute)}$ (dB(A))
R3, R4, R5, R6, R7	Day	46	51
	Evening	42	47
R8, R9, R10	Day	47	52
	Evening	44	49

Amenity noise

The amenity criteria in the Noise Policy for Industry was used to derive noise criteria that can be applied to operation of the proposal (refer to Table 6-6).

Residential assessment locations potentially affected by operation of the site have been categorised in the Noise Policy for Industry as 'urban' or 'suburban' amenity category as per the definitions provided in the policy, since they were deemed to be in an area with an acoustical environment that (urban, R1, R2 and R9 to 11):

- Is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources
- Has through-traffic with characteristically heavy and continuous traffic flows during peak periods
- Is near commercial districts or industrial districts
- Has any combination of the above.

Or (suburban, R3 to R8):

- Has local traffic with characteristically intermittent traffic flows
- Has some limited commerce or industry
- Often the evening ambient noise levels are defined by the natural environment and human activity.

Table 6-6 Recommended noise goals – sport and car park activity noise

Assessment location	Indicative area	Time period	Amenity noise level $L_{eq(period)}$ (dB(A))
R1, R2, R9, R10, R11	Urban	Day	60
		Evening	50
R3, R4, R5, R6, R7, R8	Suburban	Day	55
		Evening	45

Project noise trigger level

The project noise trigger level (PNTL) is the lower of the calculated intrusive or amenity noise level and is provided in Table 6-7 for all assessment locations.

To standardise the time periods for the intrusiveness and amenity noise levels, the LAeq,15 minute will be taken to be equal to the LAeq,period + 3 decibels (dB). This is consistent with Noise Policy for Industry method.

Table 6-7 Project noise trigger level

Assessment location	Time period	Intrusive noise level $L_{eq(15\ minute)}$ (dB(A))	Amenity noise level $L_{eq(15\ minute)}$ (dB(A))	Project noise trigger level (PNTL) (dB)
R1, R2, R11	Day	60	63	60
	Evening	57	53	53
R3, R4, R5, R6, R7	Day	51	58	51
	Evening	47	48	47
R8,	Day	52	58	52
	Evening	49	48	48
R9, R10	Day	52	63	52
	Evening	49	53	49

6.3.3 Potential impacts

Noise during the extended hours of operation would be from player noise and spectator noise. Two scenarios were modelled to assess the potential noise impact (refer to Table 6-8):

- Worst-case: consists of the maximum noise levels from the measurements presented in Table 6-8, comprising a full soccer match with a relatively large number of spectators
- Typical use: no spectators present and only half of the field area occupied.

Table 6-8 Scenarios and sound power levels

Scenario	Total number of people	Activity	$L_{eq(period)}$ (dB(A))
Typical	Up to 35	Player noise	90
		Spectator noise	n/a
Worst case	More than 35	Player noise	100
		Spectator noise	95

Noise levels were predicted at each sensitive receiver for each scenario. Table 6-9 compares the predicted noise level to the project trigger noise levels and shows where exceedences are predicted to occur. Noise levels from worst case activity are predicted to satisfy PNTLs at all receivers, except for R1, where a 1dB exceedance is predicted for the evening period. Consistent with EPA and DPE noise policies, a 1-2dB exceedance is considered negligible as such a change in noise level would be imperceptible to the human ear.

The extended operating hours are not expected to result in offensive noise at any sensitive receiver.

ITEM 1 (continued) **ATTACHMENT 2**

Table 6-9 Predicted noise levels at sensitive receivers for typical and worst-case scenarios

Receiver	Project trigger noise level $L_{eq(15\ minute)}$ (dB(A))		Predicted noise level $L_{eq(15\ minute)}$ (dB(A))		Exceedence (dB(A))			
	Day	Evening	Typical	Worst case	Typical		Worst case	
					Day	Evening	Day	Evening
R1	60	53	43	54	0	0	0	1
R2	60	53	37	47	0	0	0	0
R3	51	47	35	45	0	0	0	0
R4	51	47	34	45	0	0	0	0
R5	51	47	33	46	0	0	0	0
R6	51	47	34	47	0	0	0	0
R7	52	49	35	47	0	0	0	0
R8	52	48	36	48	0	0	0	0
R9	52	49	34	46	0	0	0	0
R10	52	49	37	49	0	0	0	0
R11	60	53	34	46	0	0	0	0

Traffic noise

The traffic impact assessment found that the proposal would have a negligible impact on traffic during peak periods, and accordingly the associated peak noise levels would remain unchanged.

There will be no increase in the capacity of the existing car parks. Noise levels from the car parks during park use would fall within the current noise levels and additional noise due to the proposal is unlikely.

6.3.4 Safeguards and management measures

- Management should be employed during the evenings such that spectators are instructed to be positioned on the western side lines to maximise the distance between nearest residential properties and therefore minimise noise
- Field users should be encouraged to keep noise to a minimum during the evening period (after 6pm) when transiting from the fields to the car park.

6.4 Visual impact

6.4.1 Existing environment

Dominant landscape features in the area are Tuckwell Park, Lane Cove Road and multi-storey residential buildings. The park is located in a suburban area, with residences on Fontenoy Road, Tuckwell Place and Lane Cove Road. Residences to the west and north of the park are generally two-storey, with eight storey residential buildings are located to the south of the park.

6.4.2 Criteria

The criteria in Table 6-10 were used to assess the potential light spill impacts of the proposal.

Table 6-10 Lighting criteria

Australian standard	Criteria
AS 2560.2.3- 2007 (sports lighting football all codes)	Horizontal illumination: 50 lux for training
AS 4282-1997 Control of the obtrusive effects of outdoor lighting	Minimum spill light to residential property boundaries (pre-curfew) i.e. as low as possible <=10 lux

6.4.3 Potential impacts

Light spill

The new lights would light the playing fields to a lighting level of 50 lux. There is potential for obtrusive light to affect surrounding residents.

Gary Roberts and Associates assessed the potential obtrusive light from the proposed new lighting. The lighting assessment predicted that the proposed lighting would result in a maximum of 2.5 lux at residential boundary properties (refer to Appendix C). This is well below the maximum pre-curfew level of 10 lux required by AS 4282. Light spill impacts at surrounding residential properties are not expected and the new lighting will comply with AS 4282.

Visual impact

New light poles would be visible to surrounding residents. However, the trees in the park would provide screening to residents and the addition of light poles is not expected to have significant visual impact on residents.

Construction work would result in minor ground disturbance that would have a minor, temporary visual impact.

6.4.4 Safeguards and management measures

- Lights will be directed to reduce light spill, while providing adequate lighting on the oval.

6.5 Waste management

6.5.1 Policy setting

Waste management would be undertaken in accordance with the Waste Avoidance and Resource Recovery Act 2001.

The objectives of this Act are:

(a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development,

(b) to ensure that resource management options are considered against a hierarchy of the following order:

i) avoidance of unnecessary resource consumption,

ii) resource recovery (including reuse, reprocessing, recycling and energy recovery),

iii) disposal,

(c) to provide for the continual reduction in waste generation,

(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,

(e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste,

(f) to ensure the efficient funding of waste and resource management planning, programs and service delivery,

(g) to achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,

(h) to assist in the achievement of the objectives of the *Protection of the Environment Operations Act 1997*.

6.5.2 Potential impacts

The proposal would generate the following types of waste:

- Excavated material from earthworks
- General waste generated during construction.

Earthworks would generate a minor amount of spoil, as most material would be used for backfilling.

6.5.3 Safeguards and management measures

- Resource management hierarchy principles are to be followed:
  - Avoid unnecessary resource consumption as a priority
  - Avoidance is followed by resource recovery (including reuse of materials reprocessing, recycling and energy recovery)
  - Disposal is undertaken as a last resort

  (in accordance with the Waste Avoidance & Resource Recovery Act 2001)
- A Site Waste Minimisation and Management Plan (SWMMP) will be prepared for the proposal
- Excess material will be disposed of at an appropriately licensed waste facility
- Recycling of lights will be explored by City of Ryde Council
- Waste will not be burnt on site
- Waste material will not be left on site once the works have been completed
- Working areas will be maintained, kept free of rubbish and cleaned up at the end of each working shift.

6.6 Ecology

6.6.1 Existing environment

Tuckwell Park contains planted native tree species around the boundary of the park.

Background searches of State and Commonwealth databases were carried out to identify potential ecological constraints.

A search of the NSW Bionet database, with a 10 kilometre radius centred on Tuckwell Park, was carried out on 2 August 2018. No threatened species or threatened ecological communities (TEC) were recorded within the vicinity of the park

A search of the Protected Matters search tool, with a 10 kilometre radius centred on Tuckwell Park, carried out on 2 August 2018 found the following EPBC Act threatened species/communities with potential to occur within the search area:

- 29 threatened flora species
- 55 threatened fauna species
- 63 migratory terrestrial species
- 9 TECs.

No threatened species or communities have potential to occur in the park.

The City of Ryde Council Significant Tree Register was checked on 2 August 2018. No significant trees are located in Tuckwell Park.

Under the City of Ryde DCP a number of tree species including Sydney Blue Gums (*Eucalyptus saligna*) are considered as being part of threatened ecological communities. Blue gums are found in the park.

6.6.2 Potential impacts

No tree trimming would be required at any of the four pole locations. No tree removal would be required. No threatened species or communities would be impacted by the work.

There are no records of threatened fauna species in the vicinity of the park. The playing fields are unlikely to provide useful habitat to threatened fauna species. The addition of new light poles and new lighting is not expected to impact fauna in the park, which is likely to be used by species accustomed to urban environments.

6.6.3 Safeguards and management measures

- No vegetation will be removed as part of the proposal
- Stockpiling of materials and equipment and parking vehicles within the dripline (extent of foliage cover) of any trees must be avoided
- Construction machinery will be cleaned using a high-pressure washer (or other suitable device) prior to entering and exiting the work site to prevent the spread of weed propagules
- All disturbed areas will be rehabilitated following completion of construction.

6.7 Bush fire

6.7.1 Existing environment

Tuckwell Park is located around 50 metres west of bushland in Lane Cove National Park. Part of the park site is mapped as bush fire prone land (vegetation buffer).

6.7.2 Potential impacts

A bush fire assessment was prepared using the Rural Fire Service's (RFS) application kit (refer to Appendix D). The assessment identified a bush fire attack level of 19 (BAL-19) (refer to Table 6-11). A BAL-19 means the following for buildings:

Attack by burning debris is significant with radiant heat levels (not greater than 19 kW/m^2) threatening some building elements (screened glass). Specific construction requirements for embers and radiant heat are warranted.

Table 6-11 Input to RFS bush fire tool to calculate the bush fire attack level

Distance to vegetation	Vegetation type	Slope of land between site and vegetation	Fire danger index of LGA	Bush fire attach level
45m east	Forest – wet sclerophyll forest	Flat	100	19

Lane Cove Road would act as a substantial asset protection zone. In addition, the light poles would be metal and are unlikely to be impacted by any burning debris. The proposed lights would not increase the bush fire risk in the area and are unlikely to be impacted by a bush fire in Lane Cove National Park.

6.7.3 Safeguards and management measures

No safeguards required.

6.8 Air quality

6.8.1 Existing environment

The main influence on air quality around the proposal site is vehicle emissions from surrounding roads. Sensitive receivers in the vicinity of the proposal include:

- Residents
- Park users.

6.8.2 Potential impacts

Air pollution can cause a wide range of health symptoms, from coughing, wheezing and shortness of breath, to more serious impacts for those with pre-existing respiratory and cardiac conditions.

During the proposed works there would be the potential for a localised deterioration in air quality due to:

- Emissions from machinery and vehicles
- Dust and particulates generated from disturbed surfaces during earthworks. Uncovered loads are also a potential source of dust.

Earthworks would be relatively minor with narrow, shallow trenches for cabling and small excavations at each light pole location. There is potential for dust generation from stockpiles during dry weather. This could impact park users and local residents. These potential impacts would be short-term.

6.8.3 Safeguards and management measures

- Smoky emissions will be kept within the standards and regulations under the *Protection of the Environment Operations Act 1997* that no vehicle shall have continuous smoky emissions for more than 10 seconds
- Measures (including watering or covering exposed areas) will be used to minimise or prevent air pollution and dust
- There will be no burning of any material onsite
- Trucks transporting material will be covered at all times to prevent dust emissions
- Earthworks will not be undertaken when wind leads to visible dust emissions.

6.9 Socio-economic

6.9.1 Existing environment

Tuckwell Park is an important resource for the local community, providing active recreational facilities, areas for passive recreation and a large children's playground. The sports field at the park is used by soccer and cricket teams in the Gladesville Hornsby Football Association and the Northern District Cricket Association respectively. The path surrounding the field provides a walking route around the field.

There are no businesses in the vicinity of the proposal.

6.9.2 Potential impacts

The proposal would have a positive impact on recreational facilities in the area by providing lighting for extended hours of operation. Sections of the playing fields would be unavailable during the installation work. This would be a minor short-term impact.

Sections of the path around the field may be closed during construction work. This impact would be restricted to the construction period.

6.9.3 Safeguards and management measures

- Appropriate signage will be placed in the park to advise park users of the proposed works. This will be put in place prior to start of construction
- The City of Ryde Council will keep soccer and cricket associations and the teams informed of the progress of construction work.

6.10 Non-Aboriginal heritage

6.10.1 Existing environment

NSW Heritage Register

The NSW Heritage register was searched on 2 August 2018 for the Ryde LGA. No State Heritage listed items are located in the vicinity of the proposal. The nearest locally significant heritage item to Tuckwell Park is Lane Cove National Park, located around 130 metres north east of the park.

Australian Heritage Database and Commonwealth Heritage List

The Australian Heritage Database and Commonwealth Heritage List were searched on 2 August 2018. There are no listed heritage items in the vicinity of Tuckwell Park

6.10.2 Potential impacts

The proposal is not located near any heritage structures or location in a heritage conservation area and would be located in previously disturbed ground. Heritage items are unlikely to be impacted by the proposal.

6.10.3 Safeguards and management measures

- If potential heritage items are discovered then all works will stop and the council's Environmental Officer will be contacted. If any item found on the site is thought to be significant, the Heritage Branch NSW will be contacted.

6.11 Aboriginal heritage

6.11.1 Existing environment

A search of the Aboriginal Heritage Information Management System (AHIMS) search on 2 August 2018 found that there are no recorded heritage items with 50 metres of the park.

6.11.2 Potential impacts

The proposal is assessed in accordance with *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010) (refer to Table 6-12). The proposal is located on previously disturbed ground and the potential for encountering Aboriginal heritage is very low.

Table 6-12 Due diligence Code of Practice steps

Steps	Comment
Will the activity disturb the ground surface	Yes. Ground disturbance would be required to install power cables to light poles and to construct new footings for the poles
Search the AHIMS database and use any other sources of information of which you are already aware	AHIMS search found that there are no registered sites within 50 metres of the park In addition, the proposal is located on fill, therefore impacts to Aboriginal heritage are unlikely.
Activities in areas where landscape features indicate the presence of Aboriginal objects	The proposal is not located in an area with landscape features that indicate the presence of Aboriginal objects.
Can you avoid harm to the object or disturbance of the landscape feature?	No required

Steps	Comment
Desktop assessment and visual inspection	Not required

6.11.3 Safeguards and management measures

- If unexpected Aboriginal items are uncovered during the works, all works must cease in the vicinity of the material/find and the council Environmental Officer must be contacted immediately.

6.12 Cumulative

The lighting installation work would be contained within Tuckwell Park and would be unlikely to result in cumulative impacts with other developments in the area.

7 Environmental management

7.1 Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The plan will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The plan will be prepared prior to construction of the proposal and must be reviewed and certified by the City of Ryde Council prior to the start of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

8 Conclusion

The installation of sports field lighting at Tuckwell Park would extend operational hours and increase the availability of recreational facilities. This would provide sporting opportunities for a growing community and relieve overused facilities.

The City of Ryde Council engaged in community consultation in October 2018 through:

- Project website
- Online survey promoted on Council's Have Your Say webpage and used at drop-in sessions
- Door knocking
- eNewsletter sent to relevant stakeholder groups
- Letter box drops
- Signs in Tuckwell Park
- Weekend drop-in session.

During the community consultation for the installation of floodlighting in Tuckwell Park the following considerations emerged as the most important matters to the community:

- Noise
- Light spill
- Hours of operation.

The City of Ryde Council commissioned an independent noise impact assessment. The assessment concluded that the extended use of the field is unlikely to cause offensive noise. The new lighting is designed to minimise light spill at surrounding properties and will meet AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting. The hours of operation proposed are Monday to Thursday until 9pm in summer and 9.30pm in winter. This is consistent with other floodlit sports fields in the City of Ryde LGA.

The installation is not expected to have any substantial adverse environmental impacts. Overall the proposal would have a beneficial impact on the community.

9 References

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ITEM 1 (continued) **ATTACHMENT 2**

Appendix A Traffic and Parking assessment

ITEM 1 (continued) **ATTACHMENT 2**

TUCKWELL PARK LIGHTING
TRAFFIC AND PARKING ASSESSMENT

FOR

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ITEM 1 (continued) **ATTACHMENT 2**

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ITEM 1 (continued) **ATTACHMENT 2**

CONTENTS

Tables

Figures

Appendices

ITEM 1 (continued) **ATTACHMENT 2**

1. INTRODUCTION

1.1 BACKGROUND

Bitzios Consulting has been commissioned by City of Ryde Council to prepare a traffic and parking assessment for the Tuckwell Park Lighting Installation. Currently, the car park is closed at sunset each day, and the installation of lighting would allow the park to extend its hours of operation.

The proposed lighting installation does not include any additional recreation areas or carparks. Without the lighting, the park is only utilised for organised sporting activities (such as soccer and cricket) when there is daylight. This report summarises the existing situation and the proposed changes as they affect traffic and parking.

1.2 STUDY AREA AND DESCRIPTION

Tuckwell Park is located off Fontenoy Road in Macquarie Park, near Lane Cove Road. It has its own off-street car park with a capacity of 50 vehicles. This is accessed by separate entry and exit driveways which are located around 15 metres away from one another. A footpath provides access to the north of the site via Tuckwell Place.

Organised sporting events take place throughout the week. In summer, the field is used for cricket and in winter it is used for all ages soccer. No organised sports training is conducted at Tuckwell Park.

The study area is shown in Figure 1.1.

Adapted from Google Earth

Figure 1.1: Study Area

ITEM 1 (continued) **ATTACHMENT 2**

2. EXISTING ROAD NETWORK AND TRAFFIC CONDITIONS

2.1 ROAD NETWORK

Fontenoy Road is a collector road that connects residents and workers with Fontenoy Park, Tuckwell Park, and Lane Cove Road. It has a single lane in each direction, and has a signposted speed limit of 50 km/h. At its signalised intersection with Lane Cove Road, the southbound direction splits into two lanes, allowing left, through, and right turn movements. Bus Zones are located on either sides of the road outside Tuckwell Park. Near the park, unrestricted on-street parking is available. This road provides access to the off-street car park at Tuckwell Park. It also provides a connection to residences and additional on-street parking at Tuckwell Place. The kerbside on-street parking on both sides of the road also act as bicycle lanes, with indicated by pavement markings. The left turn from Fontenoy Road to Lane Cove Road is a "Left Turn on Red Permitted After Stopping", which helps to clear additional traffic on Fontenoy Road during other phases in the cycle particularly during the PM peak hours when Fontenoy Road is heavily used by drivers on Talavera Road heading north who want to bypass Lane Cove Road/Talavera Road traffic lights.

Lane Cove Road is a major arterial road, linking North Ryde and Macquarie Park with Gordon and Pymble. It has a signposted speed limit of 70km/h. It joins Fontenoy Road at a signalised intersection. It has three lanes in each direction plus one turning lane in each direction to access Eden Gardens. Eastbound vehicles are allowed to turn left onto Fontenoy Road, however, right turns into Fontenoy Road by westbound traffic are not allowed.

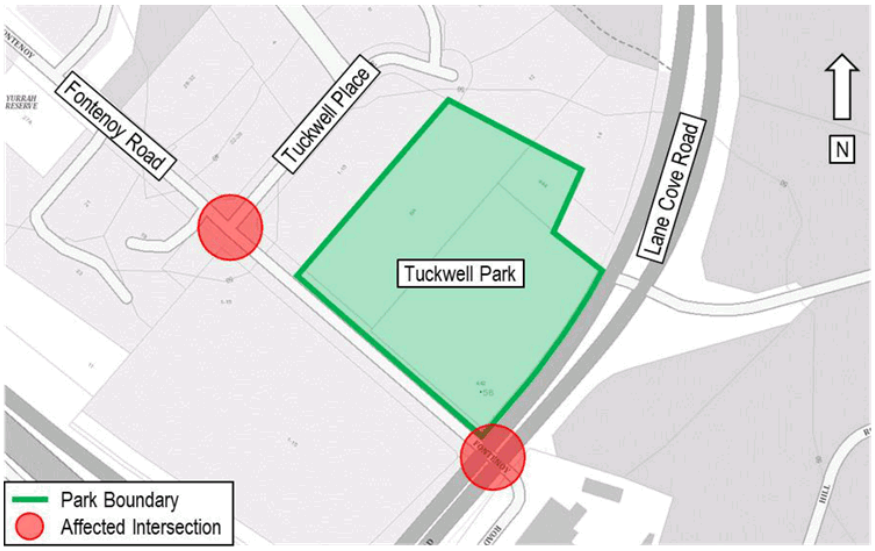
Tuckwell Place is a local road with a bidirectional travel lane. Unrestricted on-street parking is available on both sides of the road. The road leads to a cul-de-sac where seven parking bays are linemarked. Tuckwell Place has a speed limit of 50 km/h.

2.2 INTERSECTIONS

The intersections that are the most likely to be affected by the lighting of the park are:

- Fontenoy Road and Lane Cove Road (signalised); and
- Fontenoy Road and Tuckwell Place (T-intersection).

These intersections are shown below in Figure 2.1.



Adapted from SIX Maps

Figure 2.1: Intersection Locations

ITEM 1 (continued) **ATTACHMENT 2**

2.3 TRAFFIC CONDITIONS

Site visits were undertaken on Tuesday 23/10/18 and Thursday 25/10/18. No formal traffic counts were undertaken as part of this study.

Midday

No queueing was observed on Fontenoy Road. There was little traffic movement during this time during either daytime site visit.

Evening

During the Tuesday evening site visit, traffic queueing was observed on Fontenoy Road. At around 18:20, southbound traffic queued approximately 30m past the entrance of Tuckwell Park (total length around 180m) from the signalised intersection. Around 10 minutes later, the queue had extended past 300m. By 18.50pm, the queues had significantly shortened.

During the Thursday evening site visit, no queueing at any time was observed in either direction on Fontenoy Road.

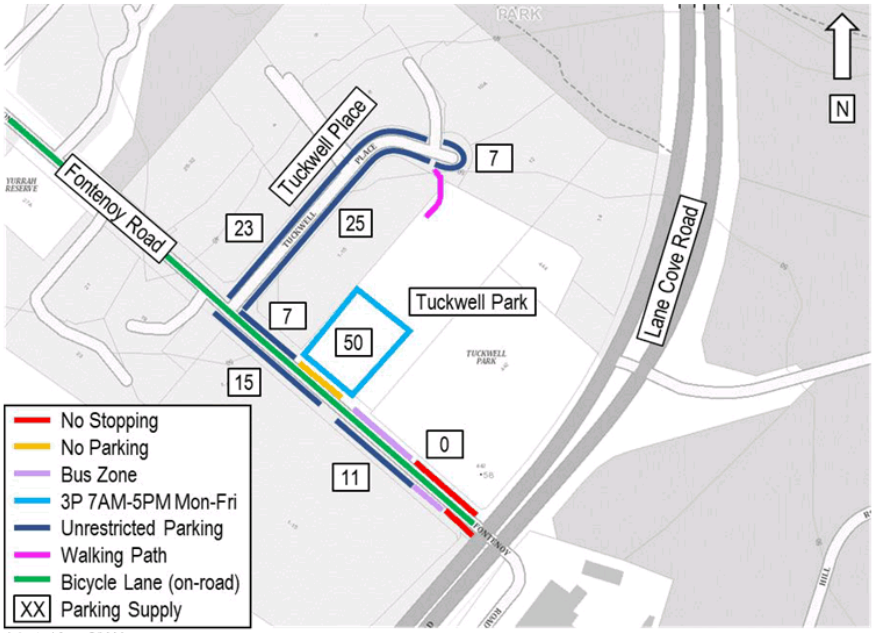
ITEM 1 (continued) **ATTACHMENT 2**

3. PARKING

3.1 EXISTING PARKING CONDITIONS

The Tuckwell Park car park has a capacity of 50 car spaces, which includes two disabled spaces. These spaces are free to use and have a three hour limit between 07.00am and 17.00pm, Monday to Friday. It is unrestricted parking at other times. The gates to the car park are opened at sunrise and are locked at sunset, closing the car park overnight.

The existing parking supply is shown in Figure 3.1 below. It should be noted that the unrestricted kerbside parking is only an estimate, as there is no formal linemarking of parking bays.



Adapted from SIX Maps

Figure 3.1: Parking Supply

There is a footpath leading from the Tuckwell Place cul-de-sac to the northern side of the park.

While Fontenoy Road is marked as an on-road cycleway, there are no bicycle parking facilities at Tuckwell Park.

The peak parking periods are expected to remain unchanged by the proposed lighting.

ITEM 1 (continued) **ATTACHMENT 2**

3.2 PARKING OCCUPANCY SURVEYS

Parking occupancy surveys were undertaken by Traffic Data and Control on Tuesday 23 and Thursday 25 October 2018, between the hours of 11.00am – 13.30pm and 17.00pm – 21.00pm. The areas surveyed are shown in Figure 3.2 and are:

1. Fontenoy Road from Lane Cove Road to Driveway of Macquarie Gardens;
2. Fontenoy Road from Driveway of Macquarie Gardens to No Parking sign;
3. Tuckwell Place from Fontenoy Road to start of cul-de-sac;
4. Tuckwell Place cul-de-sac – 7 marked bays;
5. Tuckwell Place from end of marked bays to Fontenoy Road;
6. Fontenoy Road from Tuckwell Place to Tuckwell Park carpark entry;
7. Tuckwell Park car park; and
8. Fontenoy Road from Tuckwell carpark exit to Lane Cove Road (Bus Zone).

Adapted from Google Maps

Figure 3.2: Parking Survey Locations

3.2.1 Tuesday 23 October 2018

Midday

The Tuesday midday results are shown in Figure 3.3 below. The site inspection was undertaken between 12.30pm and 13.30pm on Tuesday 23 October 2018. Observations include:

- The Tuckwell Park car park had low utilisation;
- Several people would drive to the park, and eat their lunch standing next to or sitting inside their cars and leave after a short time;
- There were no instances of a driver dropping someone off and leaving;
- The on-street parking on Fontenoy Street was heavily utilised; and
- The on-street parking on Tuckwell Place was highly utilised.

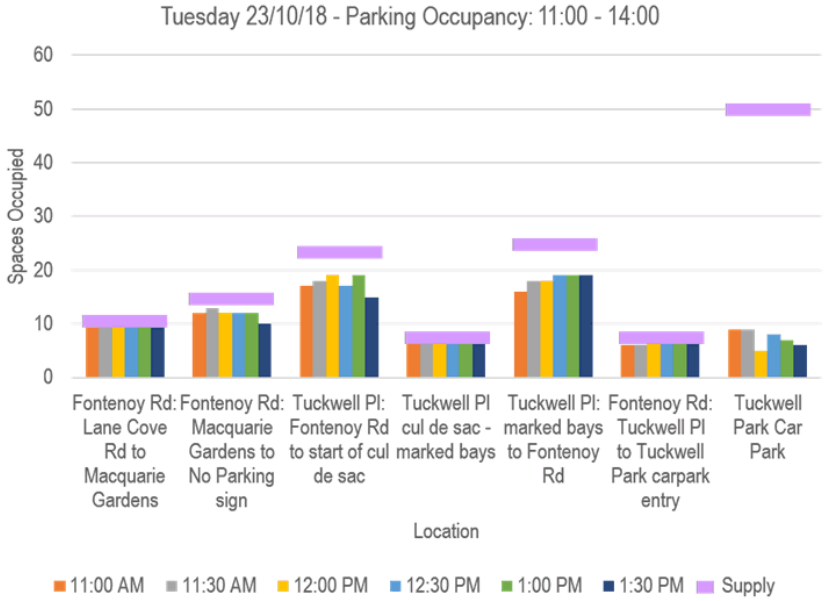


Figure 3.3: Parking Occupancy Survey – Tuesday Midday

No vehicles were observed to park in location 8 (Fontenoy Road, Tuckwell carpark exit to Lane Cove Road). The Tuesday midday results and occupancy rates are shown in Table 3.1 below.

Table 3.1: Parking Occupancy Summary – Tuesday Midday

Time Starting	Tuckwell Park Car Park	Tuckwell Park Car Park (%)	Fontenoy Road	Fontenoy Road (%)	Tuckwell Place	Tuckwell Place (%)
11.00 AM	9	18%	29	58%	40	80%
11.30 AM	9	18%	29	58%	43	86%
12.00 PM	5	10%	29	58%	44	88%
12.30 PM	8	16%	29	58%	43	86%
13.00 PM	7	14%	29	58%	45	90%

Source: Traffic and Data Control counts (23 October 2018).

Evening

The Tuesday evening results are shown in Figure 3.4 below. Observations include:

- The car park had very low usage, with the majority of people walking to the park to utilise the facilities;
- At the evening site visit, around 4 people were using the basketball courts. None of these people drove to the courts;
- No formal sport was being undertaken on the field;
- Less than 5 people at any one time were seen in the evening to be using the field for light recreation such as walking and jogging; and
- There were no instances of a driver dropping someone off and leaving;
- The on-street parking on Fontenoy Street had less utilisation in the evening than the morning.
- The on-street parking on Tuckwell Place was highly utilised.

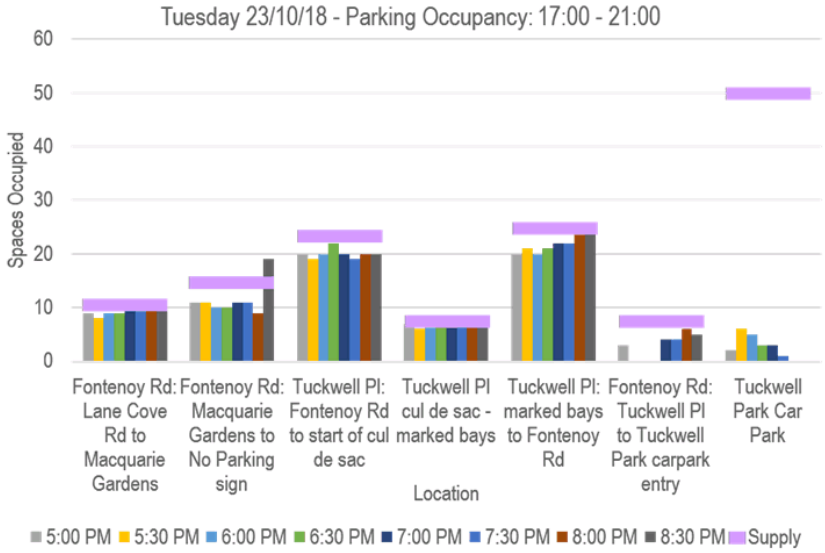


Figure 3.4: Parking Occupancy Survey – Tuesday Evening

No vehicles were observed to park in location 8 (Fontenoy Road, Tuckwell carpark exit to Lane Cove Road). The was a spike in vehicles recorded on Fontenoy Road between the Macquarie Gardens to the No Parking Sign, however, this is considered to be an outlier or error in the data collection process. The Tuesday evening results and occupancy rates are shown in Table 3.2 below.

Table 3.2: Parking Occupancy Summary – Tuesday Evening

Time Starting	Tuckwell Park Car Park	Tuckwell Park Car Park (%)	Fontenoy Road	Fontenoy Road (%)	Tuckwell Place	Tuckwell Place (%)
5.00 PM	2	4%	23	46%	47	94%
5.30 PM	6	12%	19	38%	46	92%
6.00 PM	5	10%	19	38%	47	94%
6.30 PM	3	6%	19	38%	50	100%
7.00 PM	3	6%	25	50%	49	98%
7.30 PM	1	2%	25	50%	48	96%
8.00 PM	0	0%	25	50%	51	102%
8.30 PM	0	0%	34	68%	51	102%

Source: Traffic and Data Control counts (23 October 2018).

3.2.2 Thursday 25 October 2018

Midday

The Thursday midday results are shown in Figure 3.5 below. The site inspection was undertaken between 13.30pm and 14.15pm on Thursday 25 October 2018. Observations include:

- Nobody was observed to use the sports fields or playgrounds;
- A few cars were observed to be parked with people sitting in or standing next to them; and
- Landscape maintenance was being undertaken on the park.

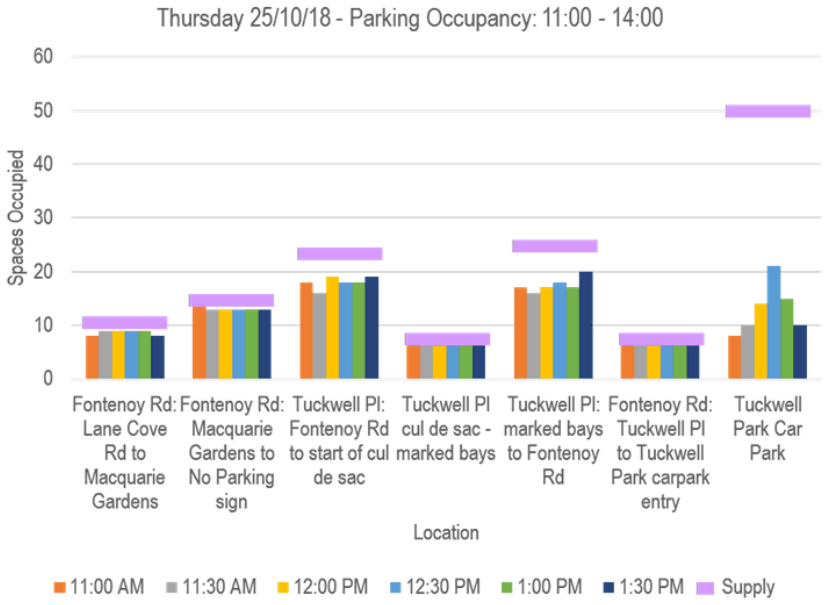


Figure 3.5: Parking Occupancy Survey – Thursday Midday

No vehicles were observed to park in location 8 (Fontenoy Road, Tuckwell carpark exit to Lane Cove Road). The Thursday midday results and occupancy rates are shown in Table 3.3 below.

Table 3.3: Parking Occupancy Summary – Thursday Midday

Time Starting	Tuckwell Park Car Park	Tuckwell Park Car Park (%)	Fontenoy Road	Fontenoy Road (%)	Tuckwell Place	Tuckwell Place (%)
11.00 AM	8	16%	29	58%	42	84%
11.30 AM	10	20%	29	58%	39	78%
12.00 PM	14	28%	29	58%	43	86%
12.30 PM	21	42%	29	58%	43	86%
13.00 PM	15	30%	29	58%	42	84%

Source: Traffic and Data Control counts (25 October 2018).

Evening

The Thursday evening results are shown in Figure 3.6. Observations include:

- Around 3-4 people were using the basketball court, none of which drove to the park;
- Several kids with their parents were using the playground;
- No organised sport was being conducted on the field; and
- Most people observed that utilised the park walked to it, they are likely locals.

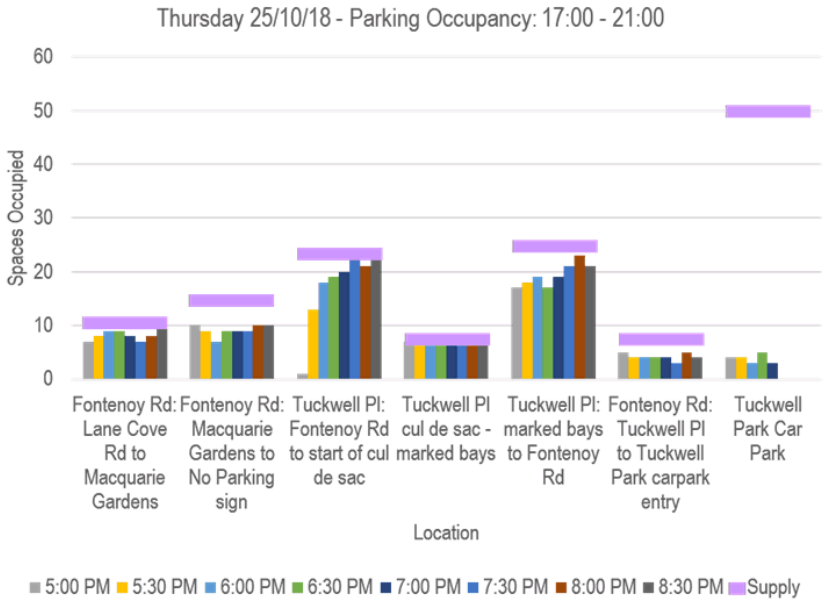


Figure 3.6: Parking Occupancy Survey – Thursday Evening

No vehicles were observed to park in location 8 (Fontenoy Road, Tuckwell carpark exit to Lane Cove Road). The Thursday evening results and occupancy rates are shown in Table 3.4 below.

Table 3.4: Parking Occupancy Summary – Thursday Evening

Time Starting	Tuckwell Park Car Park	Tuckwell Park Car Park (%)	Fontenoy Road	Fontenoy Road (%)	Tuckwell Place	Tuckwell Place (%)
5.00 PM	4	8%	22	44%	25	50%
5.30 PM	4	8%	21	42%	38	76%
6.00 PM	3	6%	20	40%	44	88%
6.30 PM	5	10%	22	44%	43	86%
7.00 PM	3	6%	21	42%	46	92%
7.30 PM	0	0%	19	38%	51	102%
8.00 PM	0	0%	23	46%	51	102%
8.30 PM	0	0%	24	48%	51	102%

Source: Traffic and Data Control counts (25 October 2018).

3.3 FUTURE PARKING DEMAND

The parking surveys indicated that the peak evening occupancy of the car park during the survey period was 6 vehicles, only 12% of the capacity of the car park. This suggests that the car park is heavily underutilised during evenings in its present condition.

Organised sport is the most likely event that would cause the car park at Tuckwell Park have insufficient capacity. The park is primarily used for cricket in summer, and all ages soccer in winter.

In summer, cricket is played at Tuckwell Park. Standard weekend cricket matches are only played during daylight hours, and would be completed before sunset, meaning the lighting would have no effect on these matches. One possibility is that if the lighting is sufficient, there may be some demand for a short form cricket match being held during the evening hours of summer.

A first principles parking assessment indicates that this event may require the following parking provision:

- 11 players per team (2 teams) accessing the ground in the evening, assuming each player travels to the park by car at a rate of 1.5 people per vehicle; and
- 1 umpire, at a rate of 1 person per vehicle.

This results in a car parking requirement of around 16 vehicles. If this was to occur during the observed peak occupancy of 6 vehicles, the total car park utilisation would be 22 out of the 50 available spaces, an occupancy rate of 44%. Due to the lack of cricket nets at Tuckwell Park, the installation of lighting would not result in cricket training being held after sunset.

Tuckwell Park is used for all ages soccer matches in winter. The park is large enough to be used as a full-sized field. Lighting the oval may result in some football clubs wishing to use the oval after sunset to host matches. The Tuckwell Park is currently used by teams playing in the Gladesville Hornsby Football Association, which limits each team to 18 players per match.

A first principles parking assessment indicates that this match may require the following parking provision:

- 18 players per team (2 teams) accessing the ground in the evening, assuming each player travels to the park by car at a rate of 1.5 people per vehicle; and
- 3 referees, at a rate of 1 person per vehicle.

This would result in around 27 cars per match. At peak utilisation, this would result in around the car park reaching 33 parking spaces utilised (66%). This indicates that that the Tuckwell Park car park should have sufficient capacity to operate for this situation. Currently, no soccer training is being held at the oval. The lighting of the oval may result in some teams wanting to use the field for training. The parking requirements for this are expected to be similar to those of the match outlined above.

It is additionally recommended that installation of bicycle parking facilities is considered to promote the use of sustainable transport. This may also reduce the total parking demand for the car park.

It is expected that the installation of lighting at Tuckwell Park would not cause parking issues as the existing capacity is sufficient, and no additional parking bays would be required.

4. TRAFFIC GENERATION

4.1 FUTURE LIGHTING OPTION

It was observed during site visits on Tuesday 23 October 2018 that a long queue of vehicles quickly formed on Fontenoy Road Southbound. This started to appear around 18.20pm as a queue of approximately 30 metres past the car park entrance. By 18.30pm, the queue reached around halfway between Fontenoy Park and Tuckwell Place, a distance of approximately 300 metres. By 18.50pm, the queue had mostly cleared. During the evening site visit on Thursday 25 October 2018, no vehicle queueing was observed at all. As the queue both quickly formed and cleared, and it only was observed on one of the site visits, it is considered likely that this was an unusual circumstance and not representative of the standard operational conditions of this road.

Evening sporting matches may increase the amount of traffic pressure on Fontenoy Road and the surrounding streets, however, it is considered to be negligible compared to the existing traffic conditions. Additionally, the majority of traffic that would access Tuckwell Park would approach from Lane Cove Road, turning onto the northbound direction of Fontenoy Road, and then turning right into the Tuckwell Park car park. No traffic related issues were observed from this approach.

It is likely that the installation of lighting at Tuckwell Park would cause negligible traffic related issues.

5. ACCESS, INTERNAL CIRCULATION AND SERVICING

There will be no changes to the current access, internal circulation, and servicing associated with the proposed lighting installation.

6. CONCLUSION

Bitzios Consulting has considered the traffic and parking impacts of the proposed Tuckwell Park Lighting Installation and found that:

- the proposed lighting is unlikely to increase the peak parking demand;
- while the proposed lighting will extend the operation hours of the carpark, no additional parking bays are required, as evident from site observations and parking surveys;
- there is sufficient capacity in the off-street car park to accommodate the proposed parking demand for the lighting installation outside of daylight hours;
- the installation of bicycle parking facilities is recommended to promote the use of sustainable transport; and
- it is expected that organised sports would put the most pressure on the traffic network surrounding the site, but it is unlikely that it would have more than a negligible impact.

Therefore, it is our view that the installation of lighting at Tuckwell Park will not have any consequential impacts on traffic and parking related issues.

ITEM 1 (continued) **ATTACHMENT 2**

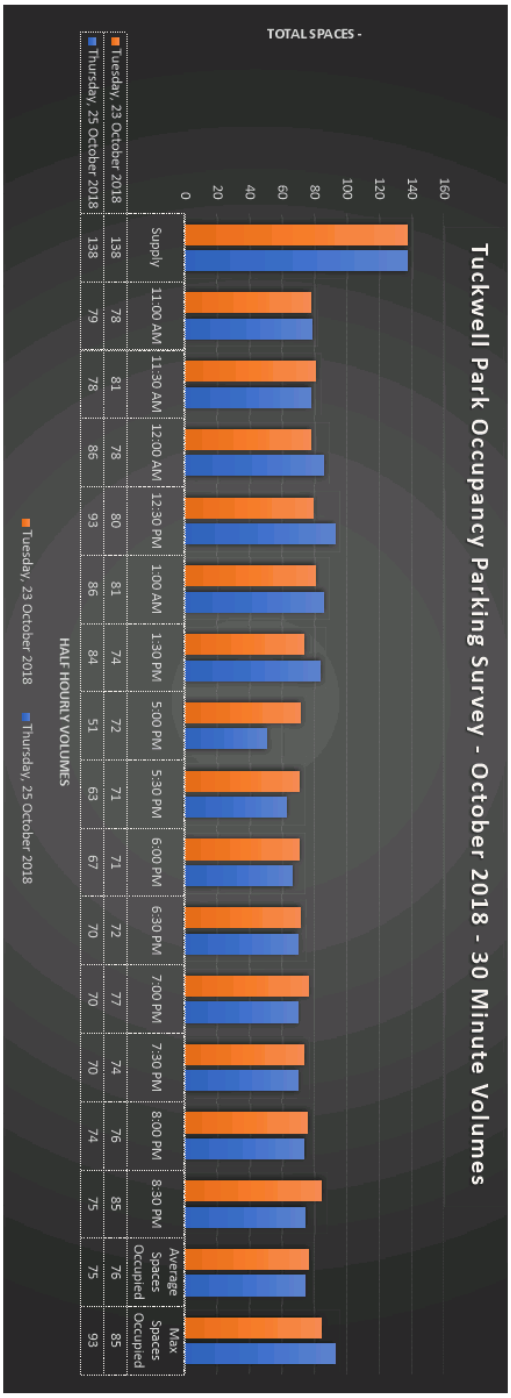
BITZIOS consulting

APPENDIX A

PARKING OCCUPANCY SURVEY

ITEM 1 (continued) **ATTACHMENT 2**

Day/Date	Supply	11:00 AM	11:30 AM	12:00 AM	12:30 PM	1:00 AM	1:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	Average Spaces Occupied	Max Spaces Occupied
Tuesday, 23 October 2018	138	78	81	78	80	81	74	72	71	71	72	77	74	76	85	76	85
Thursday, 25 October 2018	138	79	78	86	93	86	84	51	63	67	70	70	70	74	75	75	93



ITEM 1 (continued) **ATTACHMENT 2**

Street Section ID	Tuesday 23rd October 2018 Description		11:00 AM		11:30 AM		12:00 PM		12:30 PM		1:00 PM		1:30 PM		5:00 PM		5:30 PM		6:00 PM		6:30 PM		7:00 PM		7:30 PM		8:00 PM		8:30 PM		Average Spaces Occupied 11am-2pm & 5pm-7pm	Max Spaces Occupied 11am-2pm & 5pm-7pm
		Supply	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%		
1	Pontenoy Rd from Lane Cove Rd to Driveway of Macquarie Gardens	11	11	100%	10	91%	10	91%	10	91%	10	91%	10	91%	9	82%	8	73%	9	82%	9	82%	10	91%	10	91%	10	91%	10	91%	10	11
2	Pontenoy Rd from D way of Macquarie Gardens to No Parking sign	13	13	100%	13	100%	12	92%	12	92%	12	92%	11	85%	11	85%	10	77%	10	77%	10	77%	11	85%	11	85%	9	69%	10	77%	12	13
3	Pontenoy Rd from Pontenoy Rd to start of cul de sac	17	17	100%	17	100%	17	100%	17	100%	17	100%	17	100%	17	100%	16	94%	17	100%	17	100%	17	100%	17	100%	20	118%	20	118%	17	19
4	Tuckwell Pl from Pontenoy Rd to start of cul de sac	7	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	6	86%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	7
5	Tuckwell Pl from end of marked bay to Pontenoy Rd	25	16	64%	18	72%	18	72%	19	76%	19	76%	19	76%	20	80%	23	92%	20	80%	21	84%	22	88%	22	88%	24	96%	24	96%	20	24
6	Pontenoy Rd from Tuckwell Pl to Tuckwell Park carpark entry	7	6	86%	6	86%	7	100%	7	100%	7	100%	7	100%	3	43%	0	0%	0	0%	0	0%	4	57%	4	57%	6	86%	5	71%	4	7
7	Tuckwell Park carpark	50	9	18%	9	18%	5	10%	8	16%	7	14%	6	12%	2	4%	6	12%	5	10%	3	6%	3	6%	1	2%	0	0%	0	0%	5	9
8	Pontenoy Rd from Tuckwell carpark exit to Lane Cove Rd (Bus Zone)	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
	Grand Total	138	78	57%	81	59%	78	57%	80	58%	81	59%	74	54%	72	52%	71	51%	71	51%	72	52%	77	56%	74	54%	76	55%	85	62%	76	85

ITEM 1 (continued) **ATTACHMENT 2**

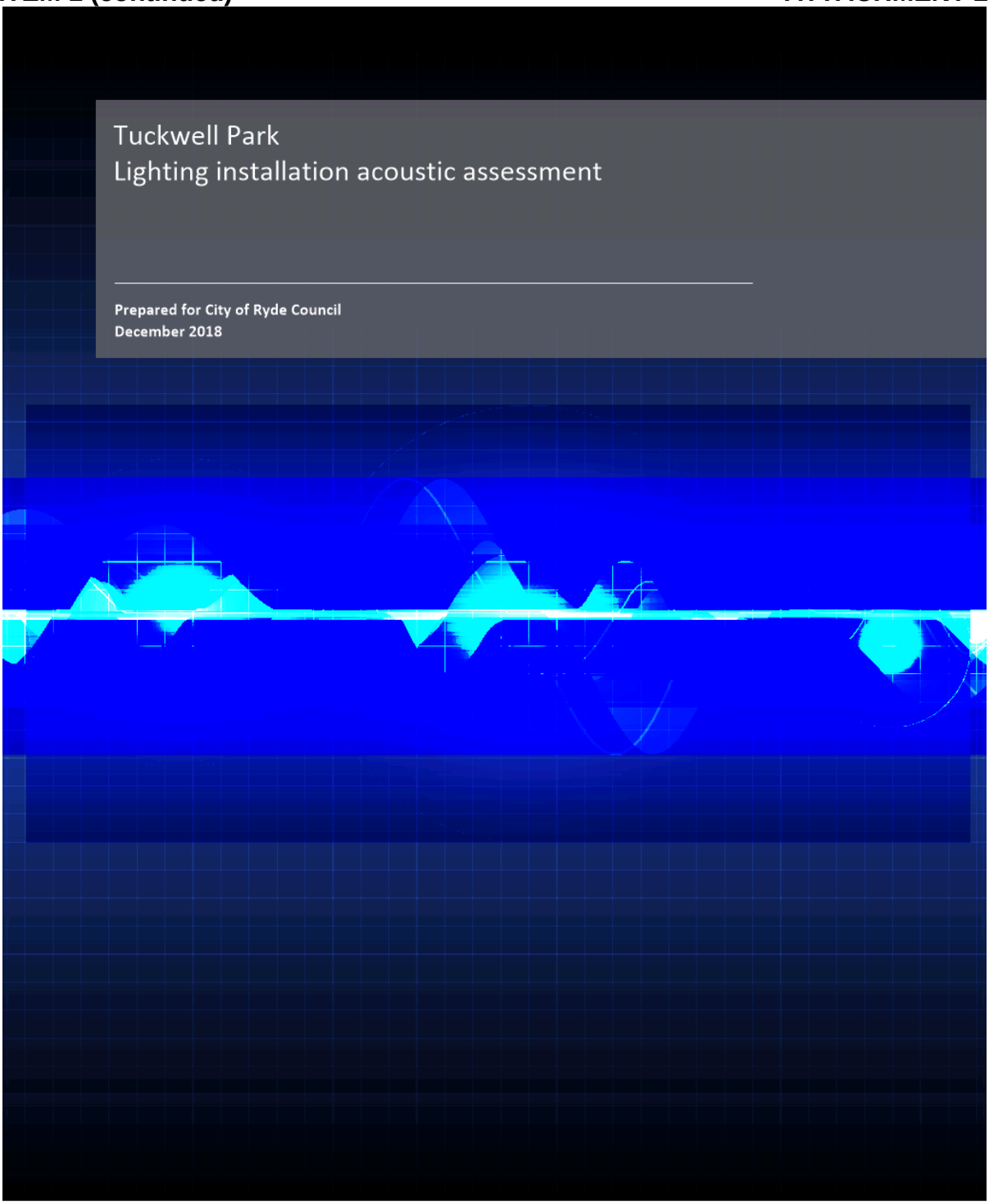
Street Section ID	Thursday 25th October 2018 Description		11:00 AM		11:30 AM		12:00 PM		12:30 PM		1:00 PM		1:30 PM		5:00 PM		5:30 PM		6:00 PM		6:30 PM		7:00 PM		7:30 PM		8:00 PM		8:30 PM		Average Person Occupied 11am-2pm & 3pm-7pm	Max Person Occupied 11am-2pm & 3pm-7pm
		Supply	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%		
1	Fontenoy Rd from Lane Cove Rd to Driveway of Macquarie Gardens	11	8	73%	9	82%	9	82%	9	82%	9	82%	8	73%	7	64%	8	73%	9	82%	9	82%	8	73%	7	64%	8	73%	10	91%	8	10
2	Fontenoy Rd from D'way of Macquarie Gardens to No Parking sign	15	14	93%	13	87%	13	87%	13	87%	13	87%	13	87%	10	67%	9	60%	7	47%	9	60%	10	67%	10	67%	10	67%	10	67%	11	14
3	Fontenoy Rd from Tuckwell Pl to start of cul de sac	23	18	78%	15	65%	15	65%	15	65%	15	65%	19	83%	17	74%	19	83%	19	83%	19	83%	20	87%	23	100%	21	91%	23	100%	18	23
4	Tuckwell Pl from Fontenoy Rd to start of cul de sac	7	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	7	7
5	Tuckwell Pl from end of marked bay to Fontenoy Rd	25	17	68%	14	56%	17	68%	18	72%	17	68%	20	80%	17	68%	18	72%	18	72%	17	68%	19	76%	21	84%	23	92%	21	84%	19	25
6	Fontenoy Rd from Tuckwell Pl to Tuckwell Park carpark entry	7	7	100%	7	100%	7	100%	7	100%	7	100%	7	100%	5	71%	4	57%	4	57%	4	57%	4	57%	4	57%	5	71%	4	57%	5	7
7	Tuckwell Park carpark	50	8	16%	10	20%	14	28%	21	42%	15	30%	10	20%	4	8%	4	8%	3	6%	5	10%	3	6%	0	0%	3	43%	0	0%	0	7
8	Fontenoy Rd from Tuckwell carpark exit to Lane Cove Rd (Bus Zone)	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	21
	Grand Total	138	79	57%	78	57%	86	62%	93	67%	86	62%	84	61%	51	37%	63	46%	67	49%	70	51%	70	51%	70	51%	74	54%	75	54%	75	93

ITEM 1 (continued) **ATTACHMENT 2**

ITEM 1 (continued) **ATTACHMENT 2**

Appendix B Noise Assessment

ITEM 1 (continued) **ATTACHMENT 2**



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ITEM 1 (continued) **ATTACHMENT 2**

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ITEM 1 (continued) **ATTACHMENT 2**

Tuckwell Park

Lighting installation acoustic assessment

Report Number

J180301 RP1

Client

City of Ryde Council

Date

3 December 2018

Version

v1

Prepared by

Rick Scully
Acoustic Consultant
3 December 2018

Approved by

Najah Ishac
Director, National Technical Leader - Acoustics
30 November 2018

Table of Contents

1 Introduction

1.1 Overview

EMM Consulting Pty Ltd (EMM) has been engaged by City of Ryde Council to prepare a noise impact assessment for the extended hours of use of Tuckwell Park that will be facilitated by the installation of new floodlights.

The City of Ryde Sport & Recreation Strategy identified that Council is under supplied in floodlight sports fields that are able to cater for the ever-growing demand for sports training and general recreation by the local community. As part of Council's commitment to 'Our Active and Healthy City' as outlined in the 2028 Community Strategic Plan, Council has set a goal to provide opportunities and choice for recreation and active learning and living. The proposed installation of sports field lighting at Tuckwell Park is designed to help Council achieve this goal by extending the hours available for sports field usage for training and social sport purposes.

This noise assessment has been prepared with reference to the following noise policies, plans and guidelines:

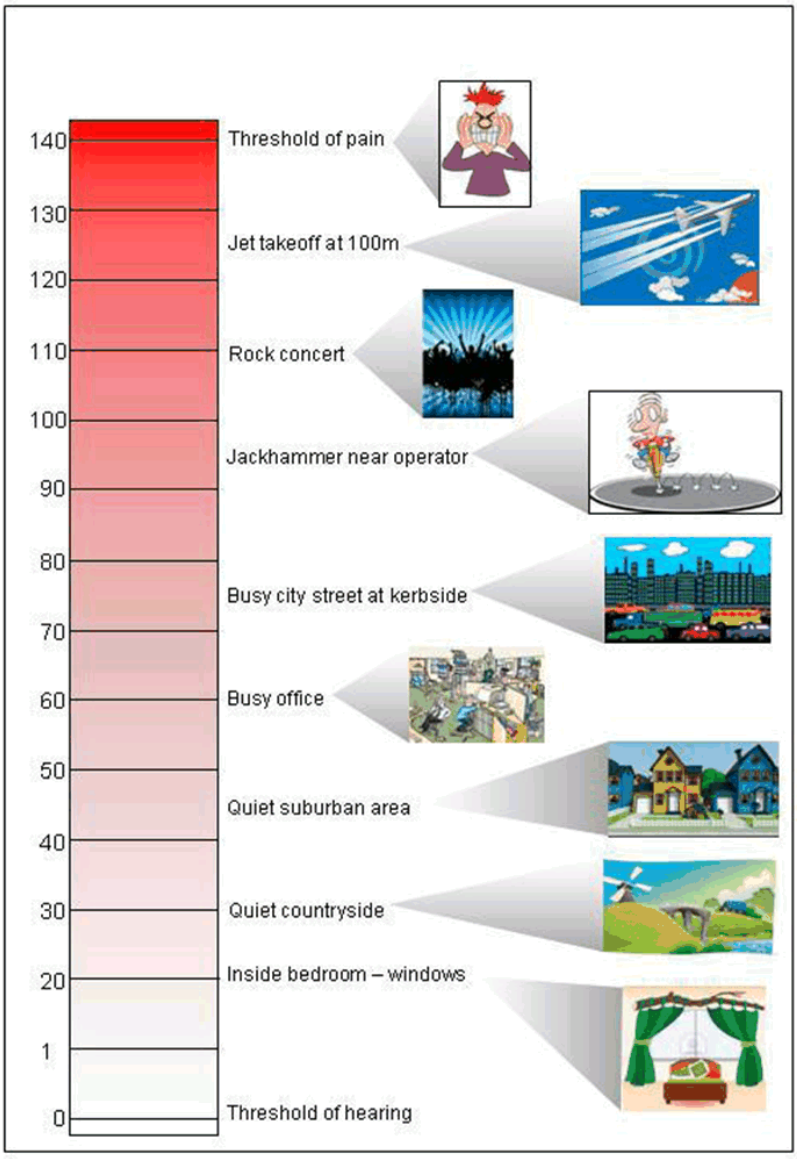
- City of Ryde Council Development Control Plan 2014;
- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPfI) (EPA 2017); and
- NSW Environment Protection Authority (EPA), Noise Guide for Local Government (NGLA) (EPA 2013).

1.2 Human perception to noise

The table below gives an indication as to what an average person perceives about changes in noise levels. Examples of common noise levels encountered on a daily basis are provided in Figure 1.1.

Table 1.1 Perceived change in noise

Change in sound level (dB)	Perceived change in noise
1-2	Generally indiscernible
3	Just perceptible
5	Noticeable difference
10	Twice (or half) as loud
15	Large change
20	Four times as loud (or a quarter) as loud



Source: Noise Measurement Manual (EHP 2013)

Figure 1.1 Common noise levels

1.3 Glossary of acoustic and other terms

A glossary of acoustic and other technical terms referenced in this report are provided below.

Abbreviation or term	Definition
ABL	The assessment background level (ABL) is defined in the INP as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Amenity noise criteria	The amenity noise criteria relate to existing industrial noise. Where industrial noise approaches base amenity noise criteria, then noise levels from new industries need to demonstrate that they will not be an additional contributor to existing industrial noise. See Section 3.1.2 for more detail.
Day period	Monday–Saturday: 7.00 am to 6.00 pm, on Sundays and public holidays: 8.00 am to 6.00 pm.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
DP&E	Department of Planning and Environment
EMM	EMM Consulting Pty Limited
EP&A Act	*Environmental and Planning Assessment Act 1979* (NSW)
EPA	The NSW Environmental Protection Authority (formerly the Environment Protection Authority and the Department of Environment, Climate Change and Water).
Evening period	Monday–Saturday: 6.00 pm to 10.00 pm, on Sundays and public holidays:
INP	Industrial Noise Policy
Intrusive noise criteria	The intrusive noise criteria refers to noise that intrudes above the background level by more than 5 dB. The intrusiveness criterion is described in detail in Section 3.1.1.
L_1	The noise level exceeded for 1% of the time.
L_{10}	The noise level which is exceeded 10% of the time. It is roughly equivalent to the average of maximum noise level.
L_{90}	The noise level that is exceeded 90% of the time. Commonly referred to as the background noise level.
L_{eq}	The energy average noise from a source. This is the equivalent continuous sound pressure level over a given period. The $L_{eq(15min)}$ descriptor refers to an L_{eq} noise level measured over a 15minute period.
L_{max}	The maximum sound pressure level received during a measuring interval.
Night period	Monday–Saturday: 10.00 pm to 7.00 am, on Sundays and public holidays: 10.00 pm to 8.00 am.
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
PSNL	The project-noise trigger level (PSNL) is criteria for a particular industrial noise source or industry. The PSNL is the lower of either the intrusive noise criteria or amenity noise criteria.
RBL	The rating background level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the average background levels.
RNP	Road Noise Policy
Sound power level (Lw)	A measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.

2 Project overview

2.1 Site description

Tuckwell park is located off Lane Cove Road (A3) and Fontenoy Road, Macquarie Park with access through the western carpark off Fontenoy Road. There is one playing field, one basketball court, amenities and a playground. The general site location and layout is shown in Figure 2.1.

Residential properties border the park from the north-east to the west on Tuckwell Place, with some properties overlooking the playing field to the west and north-east. There are also multi-storey apartment buildings opposite the park across Fontenoy Road. Key residential receiver propertiesare marked in Figure 2.1.

2.2 Project description

The proposed lighting is likely to allow for social sport competition (frisbee/touch football) in the summer months, with the lights in operation from 6:00pm to 9:30pm, Monday to Thursday. In the winter months, the lighting is likely to allow for training (primarily soccer) from 4:00pm to 9:30pm, Monday to Thursday.

This assessment addresses the predicted noise during the additional hours of use, which fall in the daytime and evening periods. The day period is commonly defined in NSW Environmental Protection Authority (EPA) noise policy and guidelines as the times between 7:00am and 6:00pm and the evening between 6:00pm and 10:00pm.

ITEM 1 (continued) **ATTACHMENT 2**

3 Existing acoustic environment

3.1 Noise sensitive receivers

The nearest noise sensitive receivers are to the east off Lane Cove Road and bordering the park from the north to the west on Tuckwell Place.

3.2 Ambient noise survey

3.2.1 Unattended continuous long-term noise monitoring

To establish the existing ambient noise environment of the area, unattended noise monitoring was conducted at three locations in the vicinity of the park near residential boundaries, as shown in Figure 2.1.

The location of noise monitoring is representative of the nearest sensitive receivers in each direction surrounding the park and were selected after a detailed inspection of the area considering other noise sources which may influence the data recorded (particularly traffic noise from Lane Cove Road), the proximity of noise-sensitive receivers and security issues for the noise monitoring devices.

Noise monitoring was conducted in general accordance with the procedures described in Australian Standard AS 1055-1997 *Acoustics - Description and Measurement of Environmental Noise* and the INP (EPA, 2000).

The measurements were carried out using two SVANTEK 977 Sound and Vibration Analysers (S/N 59681, 59682) and one Acoustic Research Laboratories NGARA Environmental Noise Logger (S/N 878113). Calibration of instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5 dB. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates.

Data affected by adverse meteorological conditions and by spurious and uncharacteristic events has been excluded from the results in accordance with the methodologies provided in the NPfI. The results of long-term unattended noise monitoring are summarised in Table 3.1. Daily statistical data and charts are provided in Appendix A.

Table 3.1 Noise monitoring results

Location	Measured background noise level, RBL, dB(A)			Measured L_{eq}, dB(A)		
	Day	Evening	Night	Day	Evening	Night
L1 – East	55	52	42	63	62	60
L2 – North	46	42	35	56	53	50
L3 – West	47	44	36	56	54	50

Notes: 1. Day: 7am to 6pm Monday to Saturday; 8am to 6pm Sundays and public holidays; Evening: 6pm to 10pm; Night: 10pm to 7am.

4 Noise goals

4.1 City of Ryde Council DCP

There is no specific guidance on noise management for sporting field land use in the Ryde City Council DCP. In the absence of such guidance, the following sections outline relevant noise goals that are considered applicable to assess the proposal and representative of good-practice noise assessment in NSW.

Noise criteria have been derived for the following activities:

1. sporting activity noise;
2. car park activity noise; and
3. road traffic noise on public roads.

4.2 Sporting and car park activity noise

4.2.1 Noise Guide for Local Government

The Protection of the Environment Operations Act 1997 (POEO Act) and the Protection of the Environment Operations (Noise Control) Regulation 2008 (Noise Control Regulation) provide the main legal framework and basis for managing unacceptable noise. The POEO Act aims to prevent offensive noise, which it defines as:

> (a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:
>
> (i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or
>
> (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or
>
> (b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.

The Noise Guide for Local Government (NGLG) prescribes that the offensive noise test be applied to outdoor sporting facilities. The offensive noise test is a subjective assessment of a noise source which aims to evaluate the following matters:

- the loudness of the noise, especially compared with other noise in the area;
- the character of the noise;
- the time and duration of the noise;
- whether the noise is typical for the area;
- how often the noise occurs; and
- the number of people affected by the noise.

This assessment therefore aims to identify if noise from the field can be controlled to a level that is not considered offensive.

4.2.2 Noise Policy for Industry

Noise from industrial sites or processes in NSW are regulated by the local council, DPE and/or the Environment Protection Authority (EPA) and usually have a licence and/or development consent conditions stipulating noise limits. These limits are normally derived from operational noise levels applied at assessment locations. They are based on EPA guidelines (ie NPfI) or noise levels that can be achieved at a specific site following the application of all reasonable and feasible noise mitigation.

The objectives of noise trigger levels for industry are to protect the community from excessive intrusive noise and preserve amenity for specific land uses. It should be noted that the audibility of a noise source does not necessarily equate to disturbance at an assessment location.

To ensure these objectives are met, the EPA provides two separate noise trigger levels: intrusiveness and amenity. The fundamental difference being intrusiveness noise levels apply over 15 minutes in any period (day, evening or night), whereas the amenity noise levels apply to the entire assessment period (day, evening or night).

There are no industrial noise sources associated with the proposal; however the general principles for deriving noise criteria as provided in the NPfI can also be applied for the purpose of this assessment. By applying similar principles, it is very likely that noise which may be considered offensive can be avoided.

No activity is planned for the night time period, therefore criteria for this period has not been included.

i Intrusiveness noise levels

The intrusiveness noise trigger levels require that $L_{Aeq,15\ minute}$ noise levels from the site during the relevant operational periods (ie day, evening and night) do not exceed the RBL by more than 5 dB. The NPfI recommends that the intrusive noise trigger level for evening be set at no greater than the intrusive noise level for daytime and that the intrusive noise level for night-time should be no greater than the intrusive noise level for day or evening.

Table 4.1 presents the intrusive noise level determined for the site based on the adopted RBLs. Where assessment locations have been grouped together in the following tables, it has been assumed that the ambient acoustic environment at these assessment locations is similar. It is noted that intrusive noise levels are applicable at residential assessment locations only.

The background noise levels recorded at:

- L1 (east and south of park) have been adopted to define the NPfI intrusiveness noise level for residential assessment locations R1, R2 and R11;
- L2 (north-western border of park) have been adopted to define the NPfI intrusiveness noise level for residential assessment locations R3 to R7 inclusive; and
- L3 (residence to west of park) have been adopted to define the NPfI intrusiveness noise level for residential assessment location R8 to R10.

Table 4.1 Project intrusiveness noise levels

Assessment location	Period[1]	Adopted RBL, dB(A)	Project intrusiveness noise level, $L_{Aeq,15min}$
R1, R2, R11	Day	55	60
	Evening	52	57
R3, R4, R5, R6, R7	Day	46	51
	Evening	42	47
R8, R9, R10	Day	47	52
	Evening	44	49

Notes: 1. Day: 7am to 6pm Monday to Saturday; 8am to 6pm Sundays and public holidays; Evening: 6pm to 10pm; Night: 10pm to 7am.

ii Amenity noise levels

The assessment of amenity is based on noise levels specific to the land use. The noise levels relate only to industrial noise and exclude road or rail noise. Where the measured existing industrial noise approaches recommended amenity noise levels, it needs to be demonstrated that noise levels from new industry will not contribute to existing industrial noise such that amenity noise levels are exceeded. As noted earlier, the subject assessment does not include industrial noise sources, however the principles of amenity could be used to assess whether the noise is offensive.

To ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, the project amenity noise level for new industrial developments is the recommended amenity noise level (outlined in Table 2.2 of the NPfI) minus 5 dB. However, exceptions to this approach apply where cumulative industrial noise is not a necessary consideration because no other industries are present in the area, or likely to be introduced into the area in the future. In such cases the relevant amenity noise level is assigned as the project amenity level for the development (refer Section 2.4 of NPfI).

Residential assessment locations potentially affected by operation of the site have been categorised in the NPfI "urban" or suburban amenity category as per the definitions provided in the NPfI, since they were deemed to be in an area with an acoustical environment that (urban, R1, R2 and R9 to 11):

- is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources;
- has through-traffic with characteristically heavy and continuous traffic flows during peak periods;
- is near commercial districts or industrial districts; and
- has any combination of the above.

Or (suburban, R3 to R8):

- has local traffic with characteristically intermittent traffic flows;
- has some limited commerce or industry; and
- often the evening ambient noise levels are defined by the natural environment and human activity.

The corresponding project amenity noise levels for the site are given in Table 4.2.

Table 4.2 Project amenity noise level

Assessment location	Indicative area	Time period[1]	Recommended amenity noise level, $L_{Aeq,period}$	Project amenity noise level dB[2], $L_{Aeq,period}$
R1, R2, R9, R10, R11	Urban	Day	60	60
		Evening	50	50
R3, R4, R5, R6, R7, R8	Suburban	Day	55	55
		Evening	45	45

Source: NSW NPfI (EPA 2017).

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Night: 10 pm to 7 am.
2. The recommended amenity noise level has been adopted for the project due to the absence of other industry in the area, as per Section 2.4 of the NPfI.

iii Project noise trigger level

The project noise trigger level (PNTL) is the lower of the calculated intrusive or amenity noise level and is provided in Table 4.3 for all assessment locations.

To standardise the time periods for the intrusiveness and amenity noise levels, the $L_{Aeq,15\ minute}$ will be taken to be equal to the $L_{Aeq,period}$ + 3 decibels (dB). This is consistent with NPfI methodology.

Table 4.3 Project noise trigger level

Assessment location	Period1	Intrusive noise level dB, $L_{Aeq,15\ minute}$	Amenity noise level dB, $L_{Aeq,15min}$	Project noise trigger level (PNTL), dB
R1, R2, R11	Day	60	63	60
	Evening	57	53	53
R3, R4, R5, R6, R7	Day	51	58	51
	Evening	47	48	47
R8	Day	52	58	52
	Evening	49	48	48
R9, R10	Day	52	63	52
	Evening	49	53	49

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Night: 10 pm to 7 am.

iv Sleep disturbance

Activity at the field is not planned to continue into the night period (past 10pm) and therefore an assessment of potential sleep disturbance is not included.

4.3 Road traffic noise on public roads

Operational related traffic requires assessment for potential noise impact. The principle guidance to assess the impact of road traffic noise on assessment locations is in the NSW RNP. Table 4.4 presents the road noise

assessment criteria for residential land uses (ie assessment locations), reproduced from Table 3 of the RNP for road categories relevant to the proposal.

Table 4.4 Road traffic noise assessment criteria for residential land uses

Road Category	Type of project/development	Assessment criteria – dBA	
		Day (7:00 am to 10:00 pm)	Night (10:00 pm to 7:00 am)
Freeway/arterial/sub-arterial roads	Existing residences affected by additional traffic on existing freeway/arterial/sub-arterial roads generated by land use developments.	Leq,15hr 60 (external)	Leq,9hr 55 (external)
Local Roads	Existing residences affected by additional traffic on existing local roads generated by land use developments.	Leq,1hr 55 (external)	Leq,1hr 50 (external)

Additionally, the RNP states where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to +2 dB once feasible and reasonable mitigation is applied.

5 Noise assessment

5.1 Assessment method

This section presents the methods and parameters used to model noise emissions from the project.

Noise modelling was undertaken based on three-dimensional digitised ground contours of the project area and surrounding land. Noise predictions were carried out using Brüel & Kjær Predictor (Predictor) noise prediction software. Predictor calculates total noise levels at assessment locations from the concurrent operation of multiple noise sources. The model considers factors such as:

- the lateral and vertical location of sporting and vehicle activity;
- activity to assessment location distances;
- ground effects;
- atmospheric absorption; and
- surrounding topography.

Noise receivers are in close proximity to the field. Meteorological affects such as source to receiver winds or temperature inversions are unlikely to have a material effect on received noise levels over relatively short distance. Noise modelling was therefore excluded adverse weather conditions.

The activities predicted to occur during the evening periods are not likely to attract spectators, consisting of mainly training sessions in winter and social sporting competitions in summer. Regardless, as a "worst-case" scenario, a line source has been used to represent a row of spectators should some be present.

Back fences have been modelled on the boundaries of the northern residential receivers (R5 and R6), these are at a height of 2 metres, and would likely provide a nominal level of noise reduction, due to the properties being at a lower elevation compared to the playing field.

5.2 Activity noise levels

Noise levels have been adapted from past measurements by EMM at Meadowbank Park (J17101RP1 dated 14 June 2017). Measurements were taken while soccer matches were being played with spectators watching, and while soccer training was occurring. Table 5.1 is an excerpt from this report showing the results of the measurements at Meadowbank Park.

Table 5.1 Attended short-term noise monitoring results

Location (EMM 2017)	Activity description	Measured sound pressure levels, dB (re 20 uPa)2				Comments
		L_{AFmax}	L_{AFmin}	SEL	L_{Aeq}	
1	Soccer with spectators	75	50	88	64	70 to 100 people
2	Soccer with spectators	79	47	85	61	Approx. 35 people
3	Soccer with spectators	79	45	82	61	Approx. 35 people
4	Soccer	76	40	80	56	13 people

5	Soccer	74	41	75	53	10 people

Source: J17101RP1 – EMM Consulting Pty Ltd (14 June 2017)

Notes: 1. Only 50% of the field area was occupied for measurement locations 4 and 5
2. Measurement duration of 10 to 15 minutes each.

5.3 Scenarios

The measured noise profile of the fields has been split into spectators and player components to develop typical and worst case scenarios that would be representative of activities. The worst case scenario adopted for modelling consists of the maximum noise levels from the measurements presented in Table 5.1, comprising a full soccer match with a relatively large number of spectators. The typical use of the field during the evening period is expected to be for training or social sport competitions, hence the noise level from locations 2 and 3 (Table 5.1), where no spectators were present and only half of the field area was occupied, has been adopted for the typical scenario.

Average activity sound power levels (SWL) adopted in the acoustic model based on the two scenarios described above are provided in Table 5.2.

Table 5.2 Field activity noise levels

Scenario	Total number of people	Activity	Sound power level
1 – Typical	Up to 35	Player noise	90
		Spectator noise	n/a
2 – Worst case	Greater than 35	Player noise	100
		Spectator noise	95

Notes: 1. Spectator noise has been modelled as a line source.
2. Field (player) noise has been modelled as an area source.

5.4 Noise prediction results

Predicted single point noise levels are provided Table 5.3 for the scenarios described in Section 5.32. The corresponding noise contours are shown in Figure 5.1.

Table 5.3 Predicted activity noise level at receivers

Receiver	Project noise trigger level, dB $L_{Aeq,15min}$		Predicted noise level, dB $L_{Aeq,15min}$		Exceedance, dB(A)			
	Day	Evening	Typical	Worst case	Typical		Worst case	
					Day	Evening	Day	Evening
R1	60	53	43	54	0	0	0	**1**
R2	60	53	37	47	0	0	0	0
R3	51	47	35	45	0	0	0	0
R4	51	47	34	45	0	0	0	0
R5	51	47	33	46	0	0	0	0
R6	51	47	34	47	0	0	0	0

R7	52	49	35	47	0	0	0	0
R8	52	48	36	48	0	0	0	0
R9	52	49	34	46	0	0	0	0
R10	52	49	37	49	0	0	0	0
R11	60	53	34	46	0	0	0	0

Noise levels from worst case activity are predicted to satisfy PNTLs at all receivers, except for R1, where a 1dB exceedance is predicted for the evening period. Consistent with EPA and DPE noise policies, a 1-2dB exceedance is considered negligible as such a change in noise level would be imperceptible to the human ear.

Noise levels from typical activity are predicted to satisfy PNTLs at all receivers.

5.5 Car parking and road traffic noise on public roads

A traffic impact assessment for the proposal has been prepared by Bitzios Consulting (report reference: P3758.001R Tuckwell Parking Lighting TIA). Of relevance to this noise assessment, the TIA concluded that:

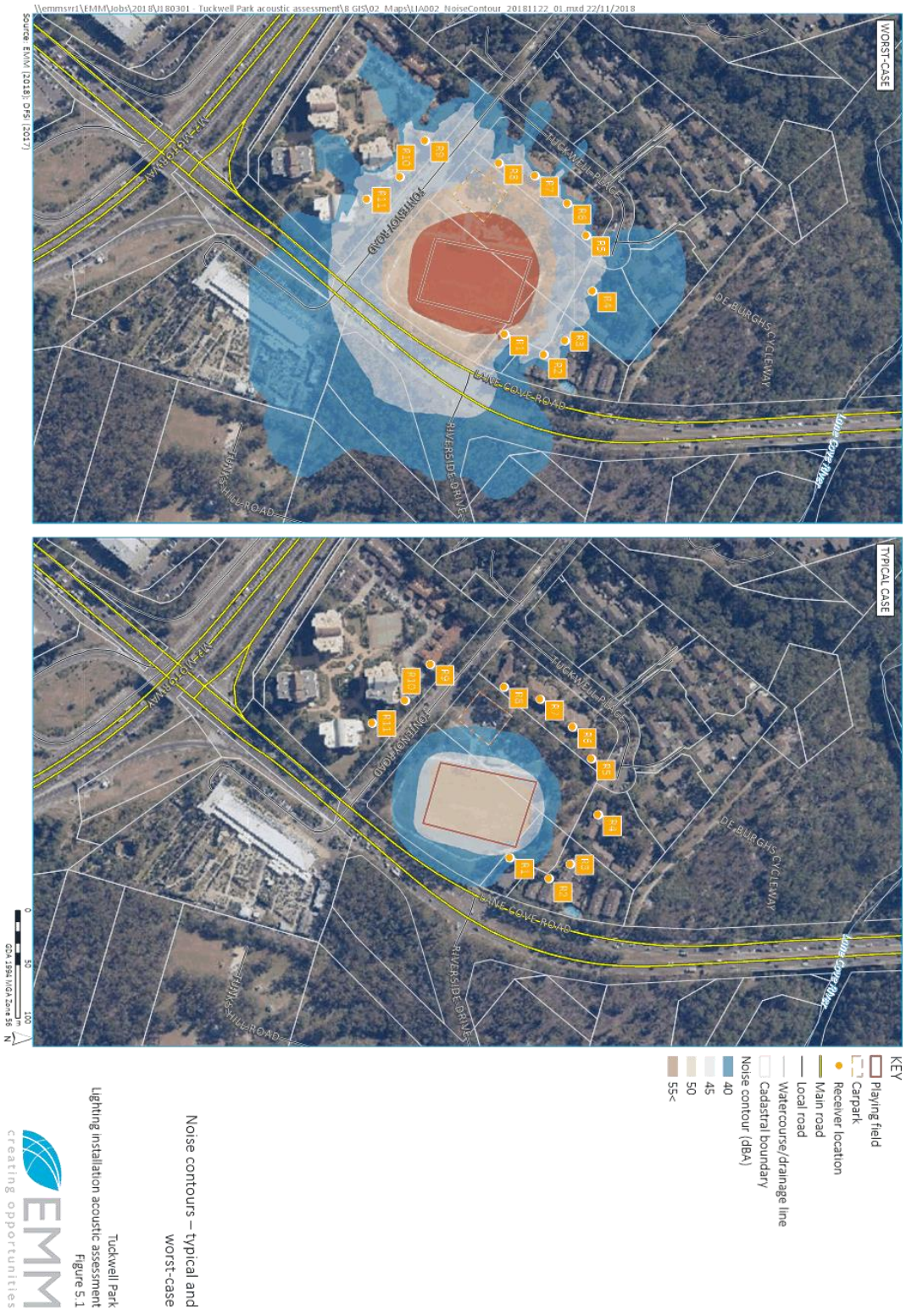
- the proposed lighting is unlikely to increase the peak parking demand; and
- it is expected that organised sports would put the most pressure on the traffic network surrounding the site, but it is unlikely that it would have more than a negligible impact.

In summary there will likely be no increase to peak traffic movements already experienced over an annual period, and accordingly the associated peak noise levels would remain unchanged. This outcome satisfies the intent of the RNP whereby existing noise levels are unlikely to increase by more than 2 dB.

The NSW EPA's Road Noise Policy (RNP) (2011) recommends a road traffic noise assessment criteria of $L_{Aeq,\ (15\ hour)}$ 60 dB(A) externally on sub-arterial roads during the daytime (7:00am to 10:00pm). The traffic impact assessment predicted a marginal increase in traffic volumes, 27 vehicles per day, due to the extended operating hours of the park. Given the sub-arterial classification of Fontenoy Road and Lane Cove Road, this increase in road volumes due to the project is considered insignificant as compared to existing traffic volumes. Hence any corresponding traffic noise increases should be negligible.

Notwithstanding, persons who use the fields should be encouraged to keep noise to a minimum during the evening period (after 6 pm) when transiting between the fields to the car park.

ITEM 1 (continued) **ATTACHMENT 2**



6 Mitigation and management recommendations

Noise levels from worst case activity are predicted to satisfy PNTLs at all receivers, except for R1, where a marginal 1dB exceedance is predicted. A 1-2dB exceedance is considered negligible as such a change in noise level would be imperceptible.

Notwithstanding, the following noise management recommendations are provided:

- management should be employed during the evenings such that spectators are instructed to be positioned on the western side lines to maximise the distance between nearest residential properties and therefore minimise noise; and
- persons who use the field should be encouraged to keep noise to a minimum during the evening period (after 6pm) when transiting from the fields to the car park;

For the purposes of the above, worst case activity can notionally be defined as field and spectator activity with greater than 35 people.

7 Conclusion

EMM has completed an acoustic assessment for the proposed light installation at Tuckwell Park. The installation will allow the extended use of the field during the summer and winter.

There is no specific guideline which addresses sport activity noise. The Noise Guide for Local Government (EPA 2013) provides general guidance to assess and manage noise from sporting fields and suggests an offensive noise test be applied. This is a subjective test with no objective numerical noise goals. In the absence of specific guidance, a review of available noise standards and policies has been conducted. Numerical noise goals have been set with the intention of preventing offensive noise.

A noise survey was completed at site to establish existing long-term background noise levels. From measurements of similar activities at a similar park, two scenarios were developed to represent typical (notionally up to 35 people) and worst case (notionally greater than 35 people) field activity scenarios.

Noise levels associated with the extended use were predicted and assessed. Noise levels from typical use of the field are predicted to satisfy the noise goals outlined in Chapter 4. Predicted noise levels from worst case activity satisfy the noise goals at all but one receiver, where a potential 1dB exceedance is predicted. A 1-2dB exceedance is considered negligible as such a change in noise level would be imperceptible to the human ear.

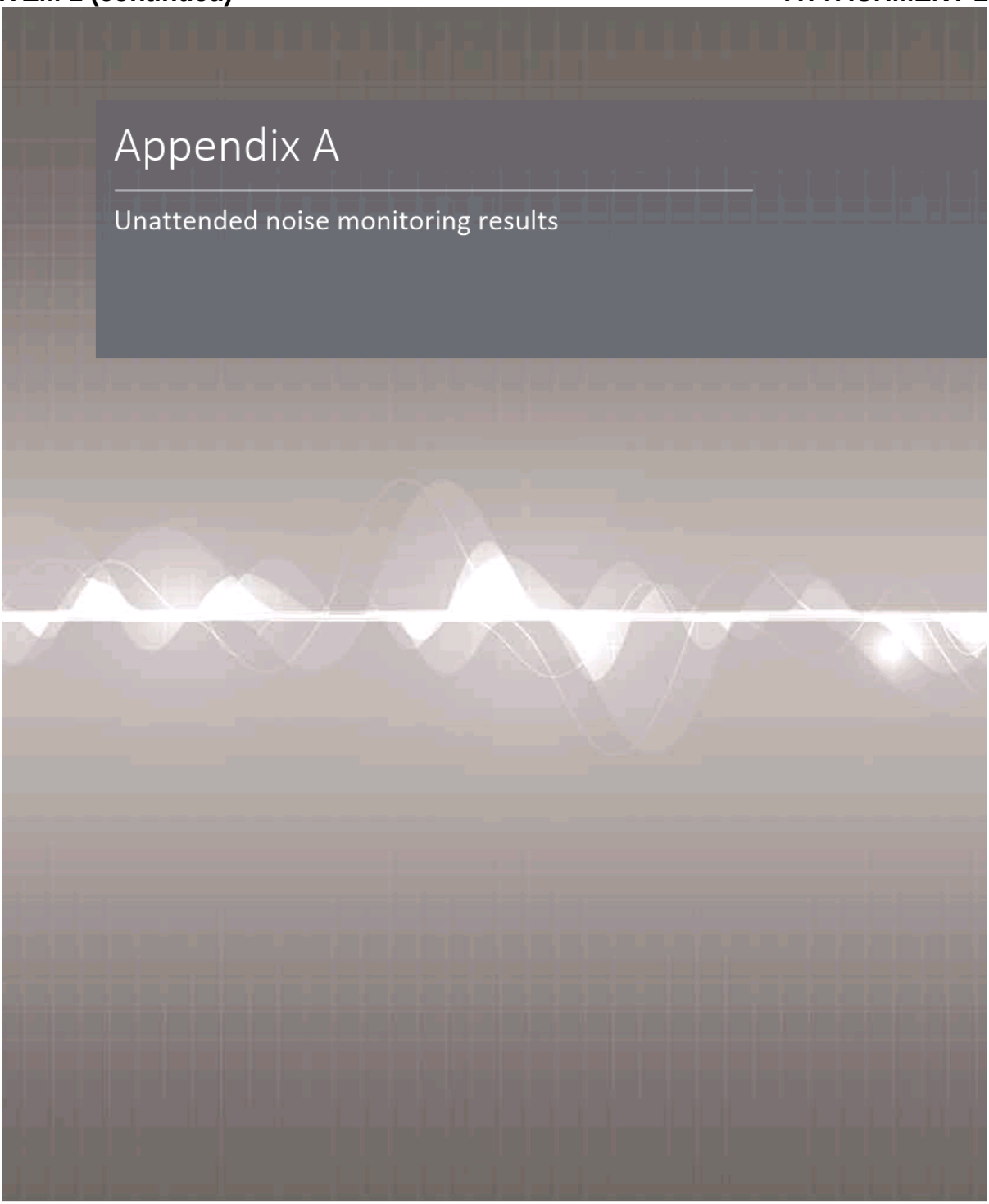
Based on the above and with the practical application of noise management measures provided in Section 6, the extended use of the field is unlikely to cause offensive noise.

Traffic noise from the car park and on public roads has been reviewed in accordance with relevant guidelines and policies. There will likely be no increase to peak traffic movements already experienced over an annual period, and accordingly the associated peak noise levels would remain unchanged to those currently experienced. This outcome satisfies the intent of the RNP whereby existing noise levels are unlikely to increase by more than 2 dB.

There is no increase to the capacity of the car park. The additional road traffic noise generated on surrounding roads by the extended operating hours of the park are considered to be insignificant given the likely existing traffic volumes.

Notwithstanding, persons who use the fields should be encouraged to keep noise to a minimum during the evening period (after 6pm) when transiting between the fields to the car park.

ITEM 1 (continued) **ATTACHMENT 2**



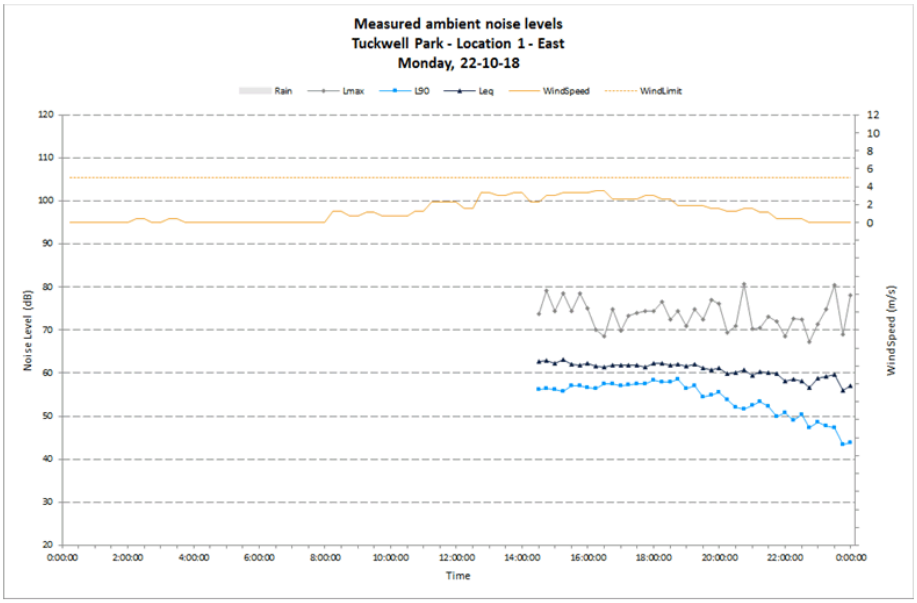
A.1 Location 1 – East

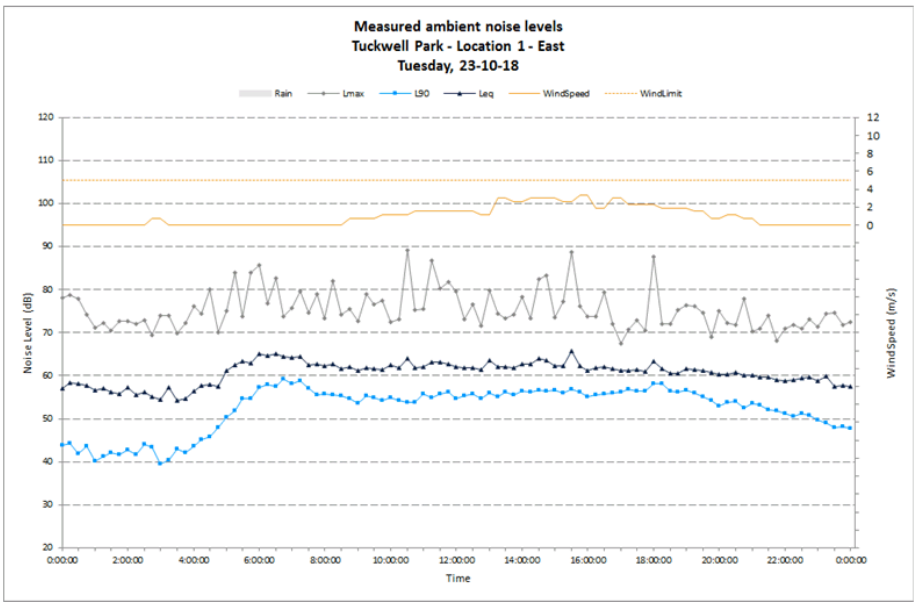
Table A.1 Location 1 – East – Results summary

Date	ABL Day	ABL Evening	ABL Night	$L_{Aeq,11\ hour}$ Day	$L_{Aeq,4\ hour}$ Evening	$L_{Aeq,9\ hour}$ Night	$L_{Aeq,15\ hour}$ Day	$L_{Aeq,24\ hour}$ Day	$L_{Aeq,8\ hour}$ Night
Monday, 22-10-18	0	51	41	0	61	60	0	0	59
Tuesday, 23-10-18	54	52	46	62	61	61	62	62	59
Wednesday, 24-10-18	58	54	39	64	63	60	64	63	59
Thursday, 25-10-18	56	53	42	64	61	60	64	63	59
Friday, 26-10-18	56	52	41	63	64	59	64	62	58
Saturday, 27-10-18	54	51	43	61	60	59	61	61	59
Sunday, 28-10-18	56	50	38	63	62	59	63	62	58
Monday, 29-10-18	55	52	43	63	62	60	63	62	59
Tuesday, 30-10-18	55	52	43	63	61	60	62	62	59
Wednesday, 31-10-18	55	52	39	63	62	60	62	62	59
Thursday, 01-11-18	55	53	44	62	60	59	62	61	59
Friday, 02-11-18	54	0	43	62	0	58	62	61	58
Saturday, 03-11-18	54	51	39	61	61	57	61	60	57
Sunday, 04-11-18	51	51	40	60	61	59	60	60	58
Monday, 05-11-18	0	0	0	0	0	0	0	0	0
Summary Values	55	52	42	63	62	60	62	62	58

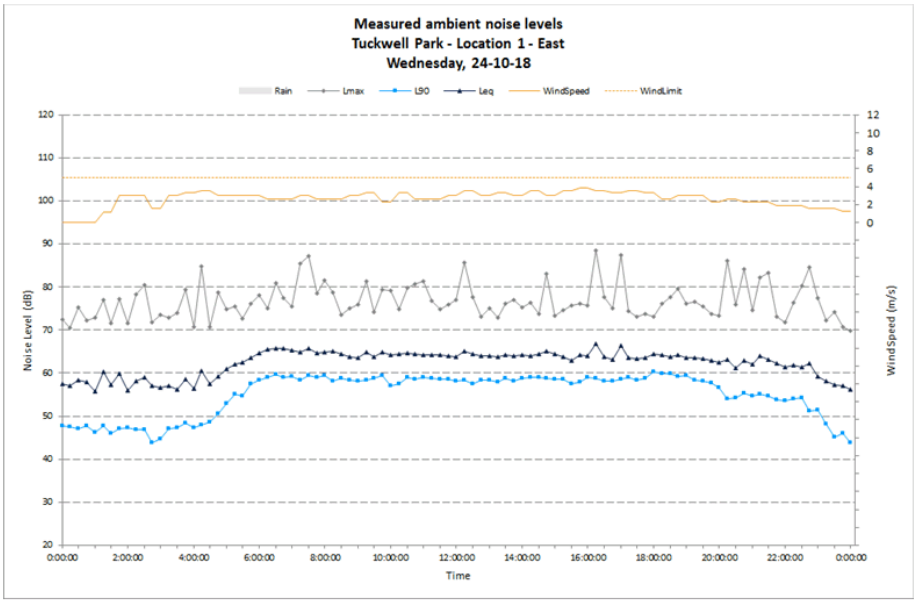
Notes: 1. 0 indicates periods with too few valid samples due to weather or logger operation
2. Leq24hr encompasses the period 7am to 7am

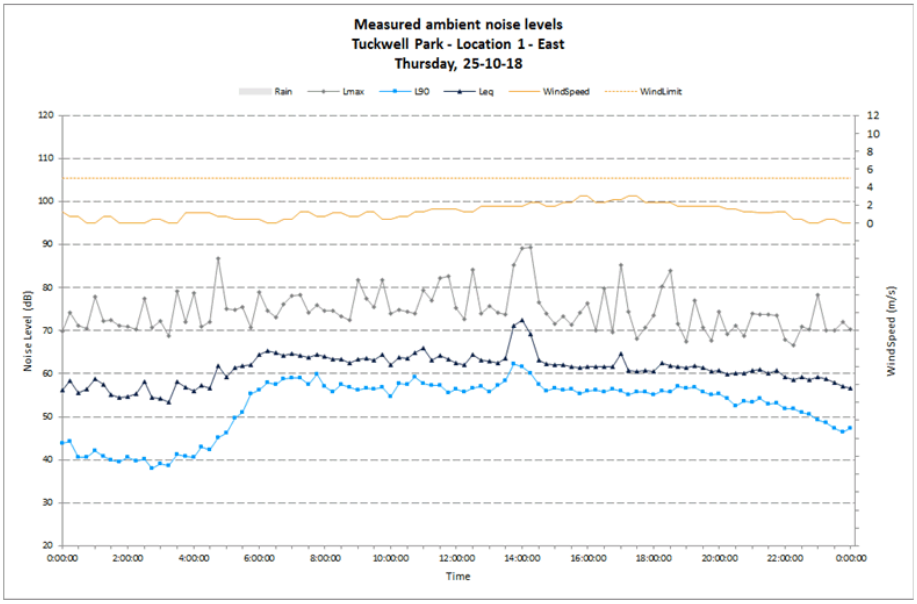
ITEM 1 (continued) **ATTACHMENT 2**



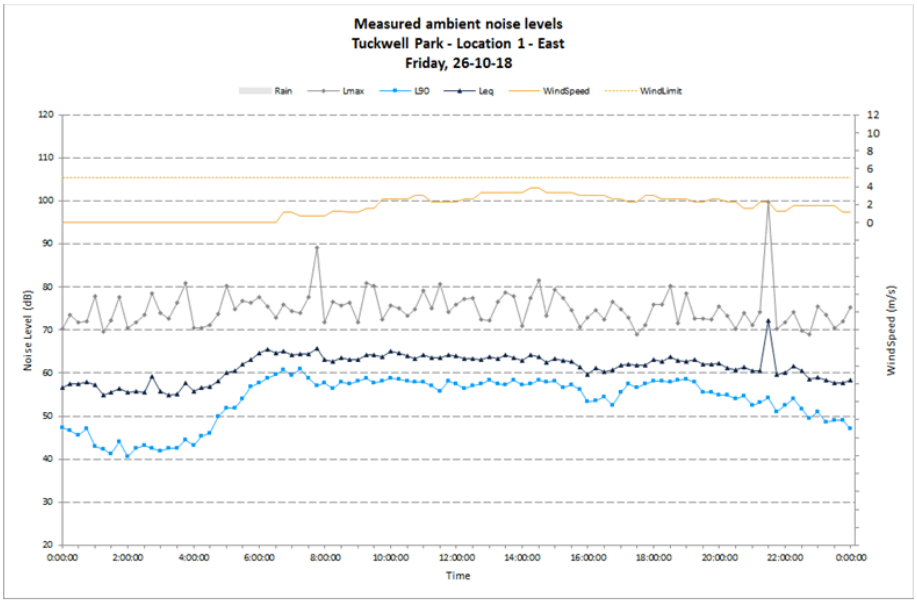


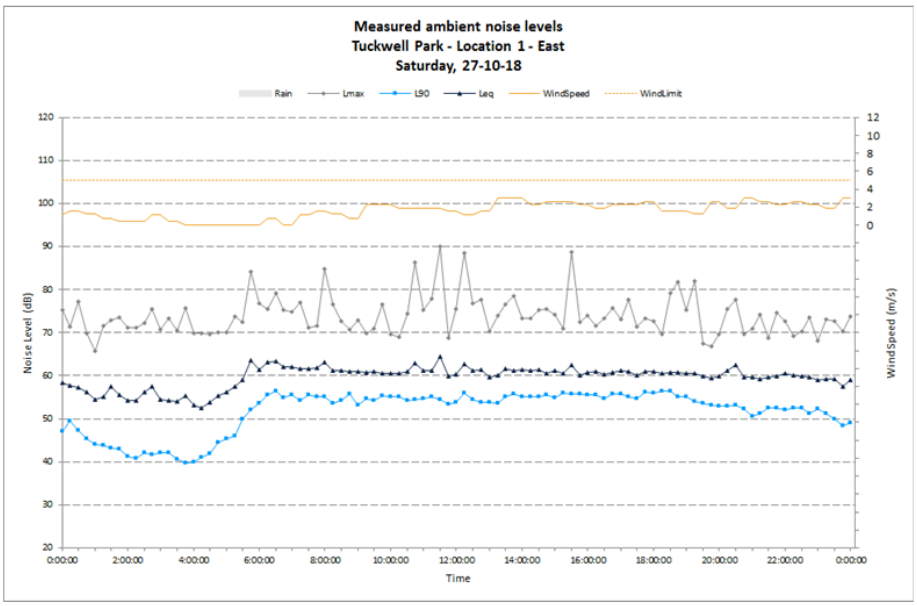
ITEM 1 (continued) **ATTACHMENT 2**



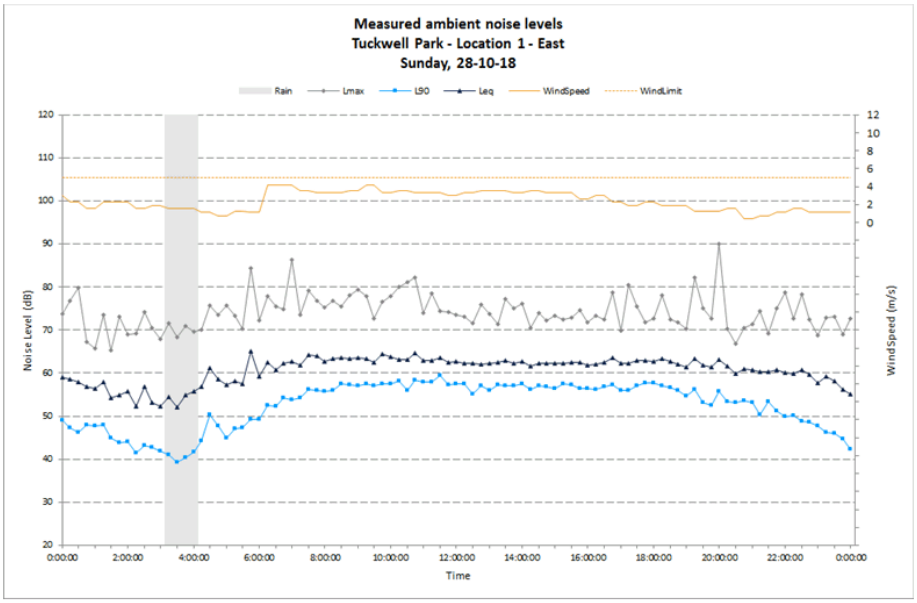


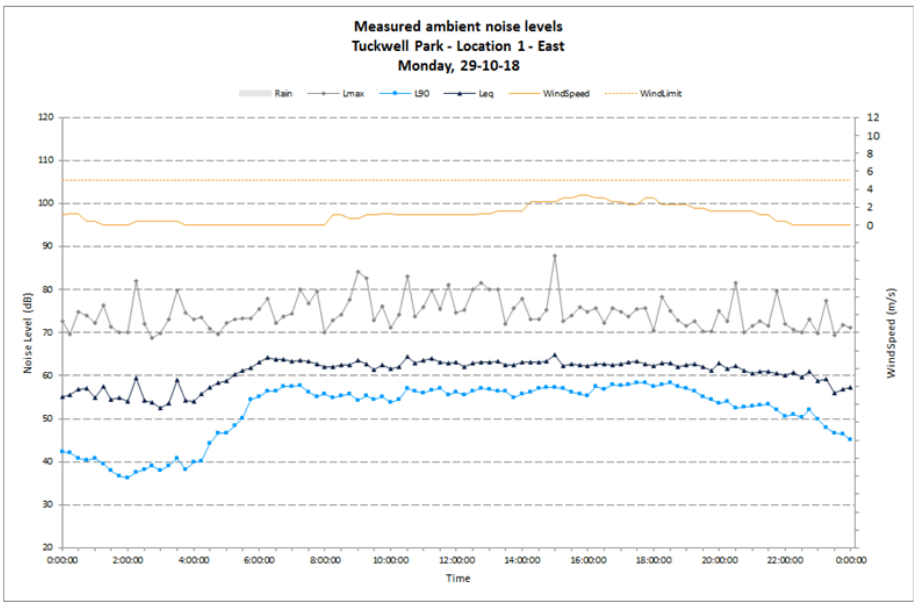
ITEM 1 (continued) **ATTACHMENT 2**





ITEM 1 (continued) **ATTACHMENT 2**





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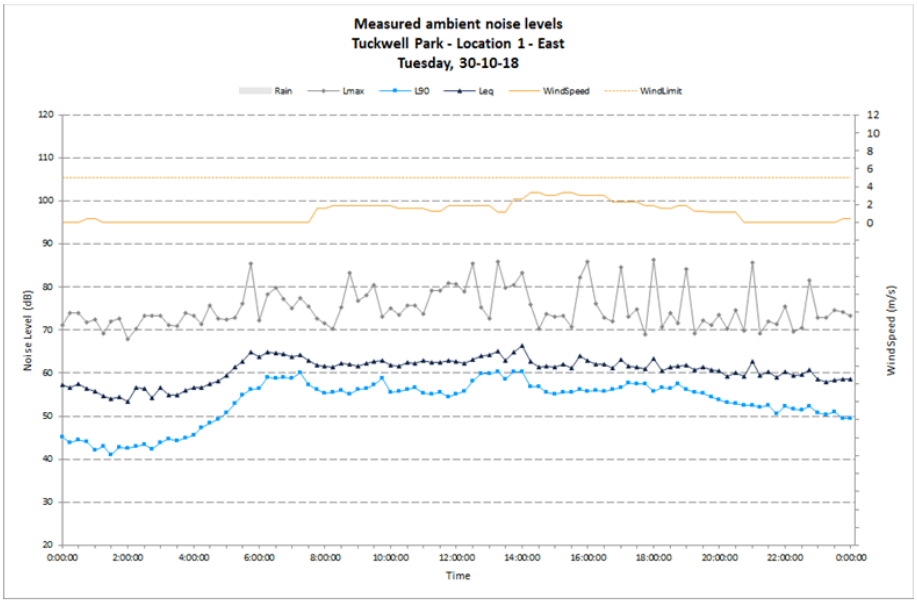

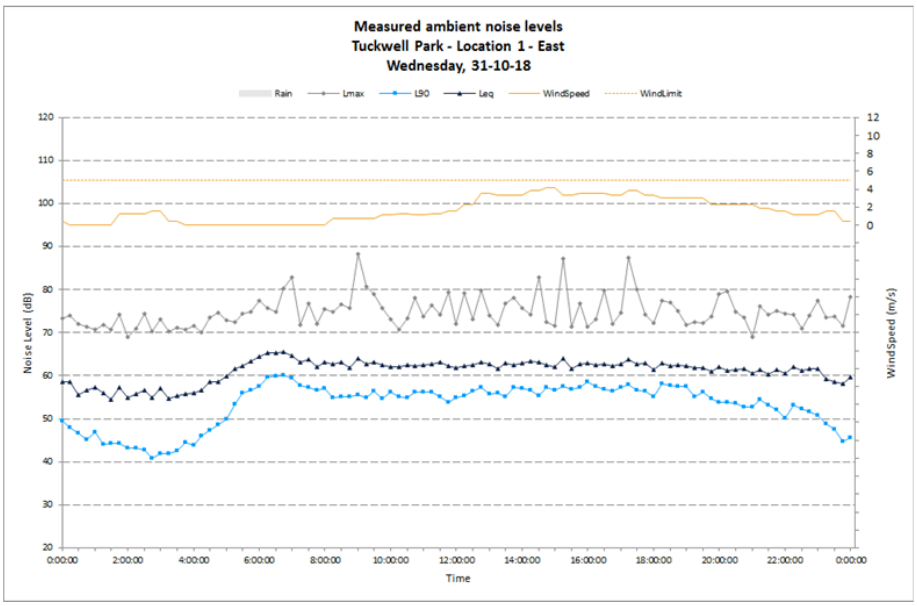

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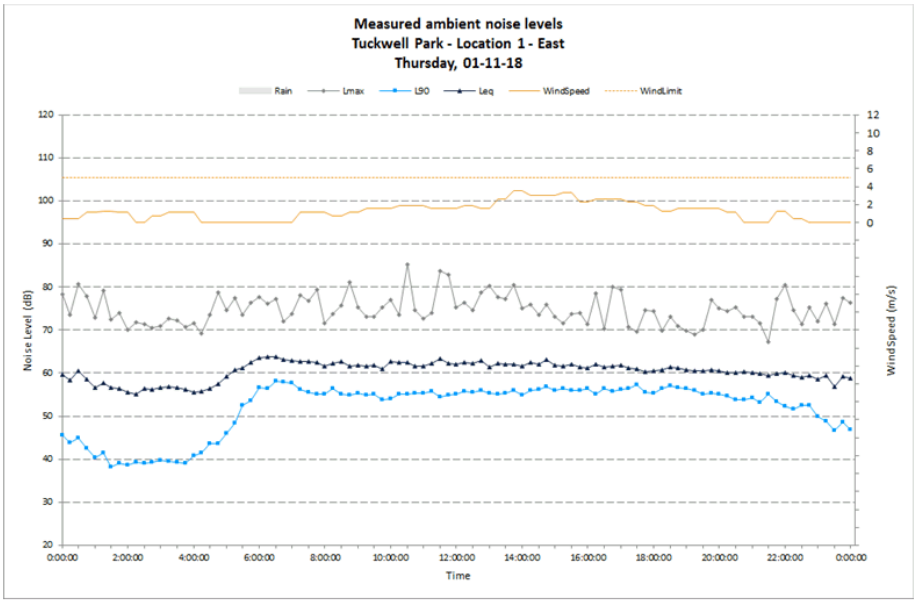
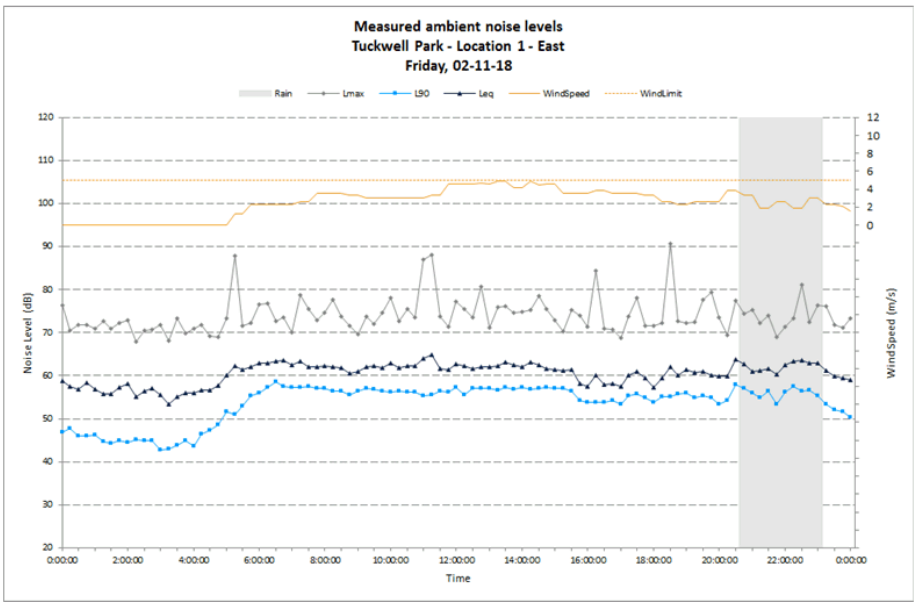
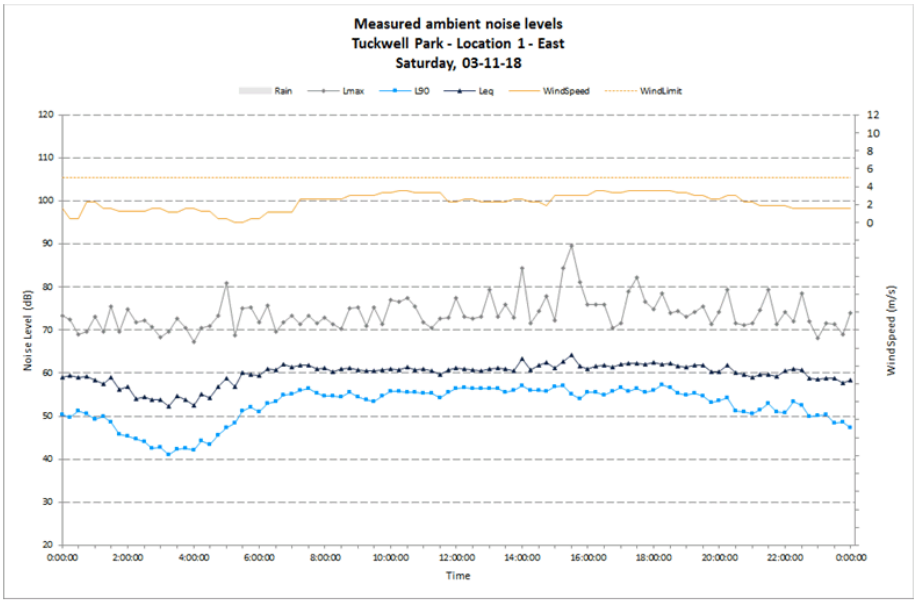
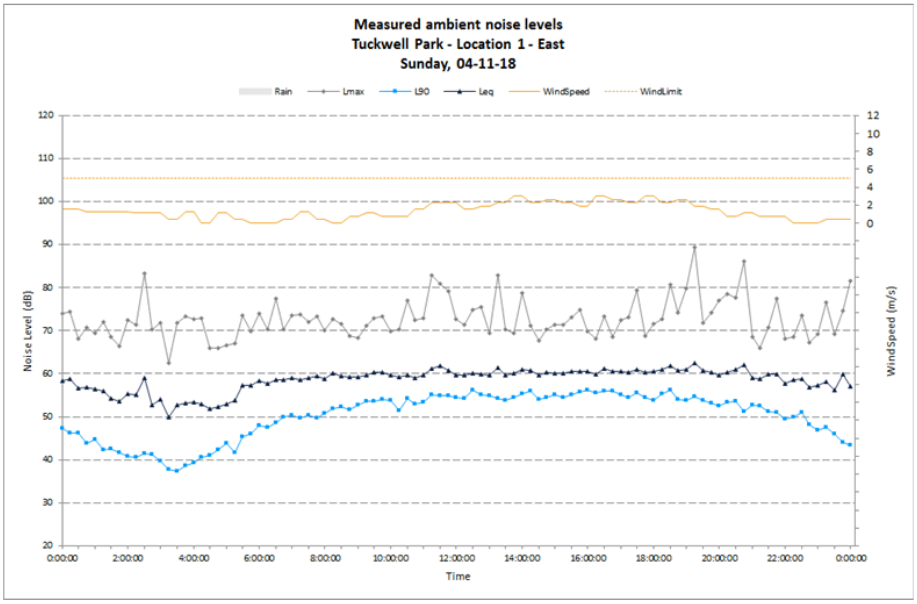


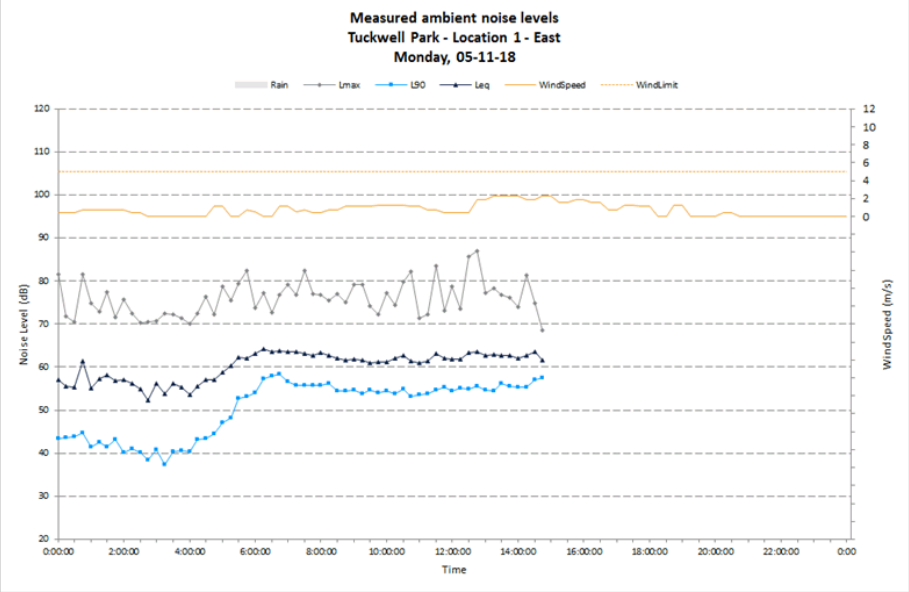


ITEM 1 (continued) **ATTACHMENT 2**





ITEM 1 (continued) **ATTACHMENT 2**



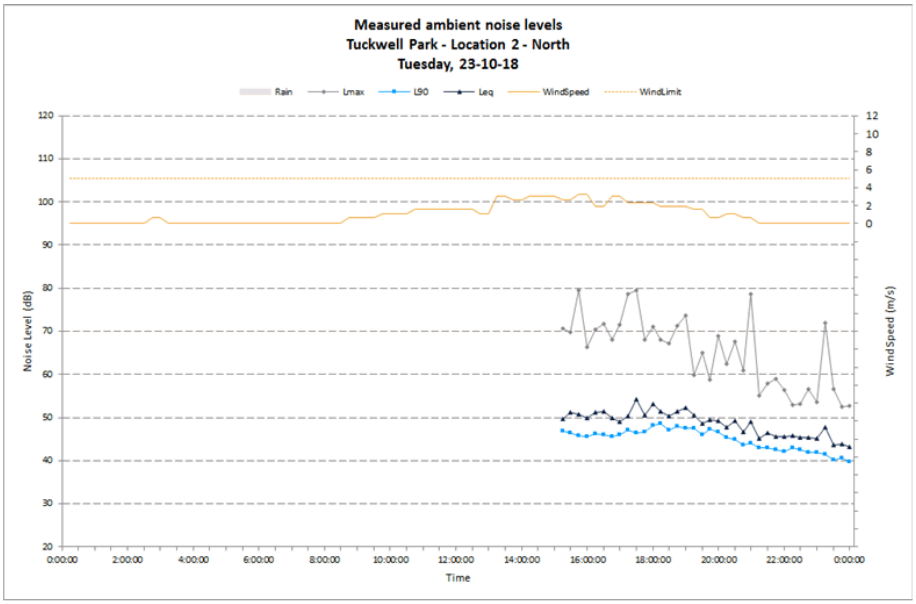
A.2 Location 2 – North

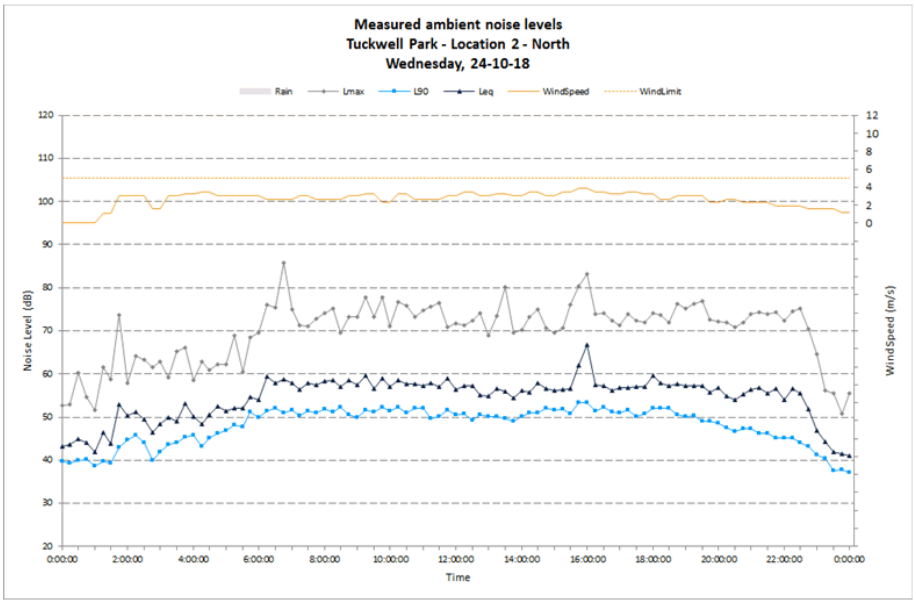
Table A.2 Location 2 – North – Results summary

Date	ABL Day	ABL Evening	ABL Night	$L_{Aeq,11\ hour}$ Day	$L_{Aeq,4\ hour}$ Evening	$L_{Aeq,9\ hour}$ Night	$L_{Aeq,15\ hour}$ Day	$L_{Aeq,24\ hour}$ Day	$L_{Aeq,8\ hour}$ Night
Tuesday, 23-10-18	0	43	40	0	49	52	0	0	50
Wednesday, 24-10-18	50	45	34	58	57	52	58	56	48
Thursday, 25-10-18	46	43	35	59	50	50	58	56	47
Friday, 26-10-18	47	42	34	56	55	49	56	55	48
Saturday, 27-10-18	44	43	36	52	53	54	53	53	53
Sunday, 28-10-18	47	42	32	57	55	50	57	55	48
Monday, 29-10-18	45	43	36	57	55	49	57	55	48
Tuesday, 30-10-18	46	42	36	52	50	50	52	51	46
Wednesday, 31-10-18	45	42	34	55	54	48	55	53	47
Thursday, 01-11-18	45	45	37	58	49	48	57	55	46
Friday, 02-11-18	46	0	36	54	0	46	54	53	45
Saturday, 03-11-18	45	42	33	56	54	47	56	54	46
Sunday, 04-11-18	43	42	34	52	49	46	52	50	45
Monday, 05-11-18	0	0	0	0	0	0	0	0	0
Summary Values	46	42	35	56	53	50	56	54	48

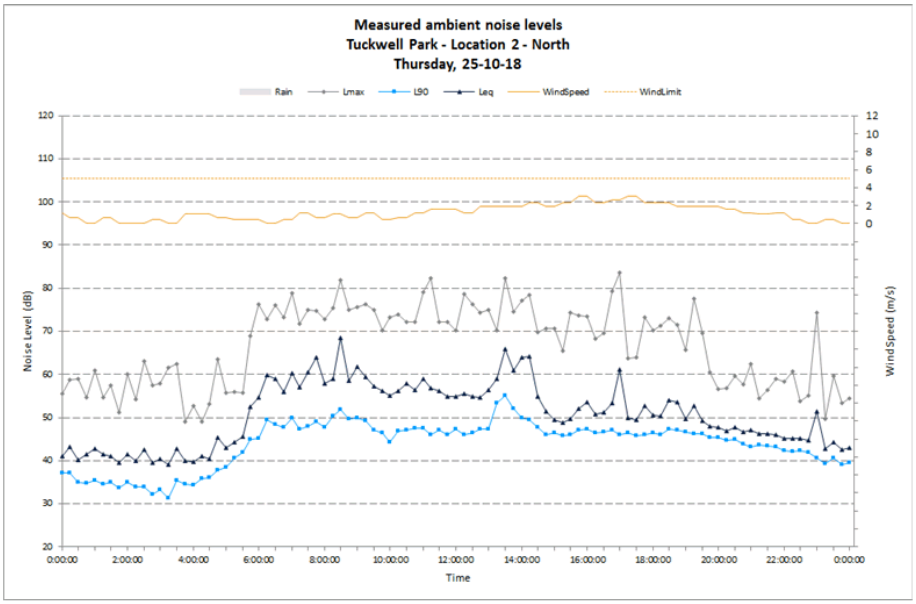
Notes: 1. 0 indicates periods with too few valid samples due to weather or logger operation
2. Leq24hr encompasses the period 7am to 7am

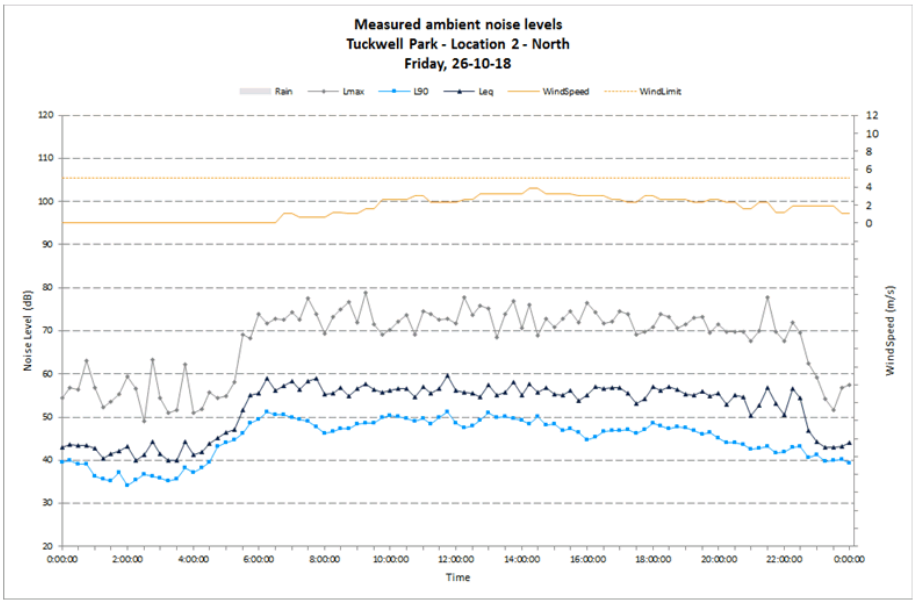
ITEM 1 (continued) **ATTACHMENT 2**



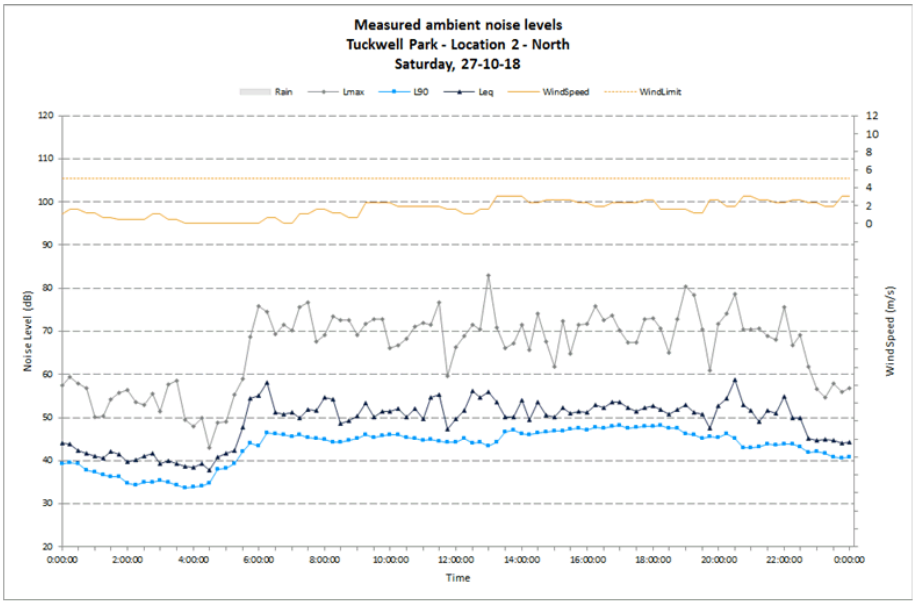


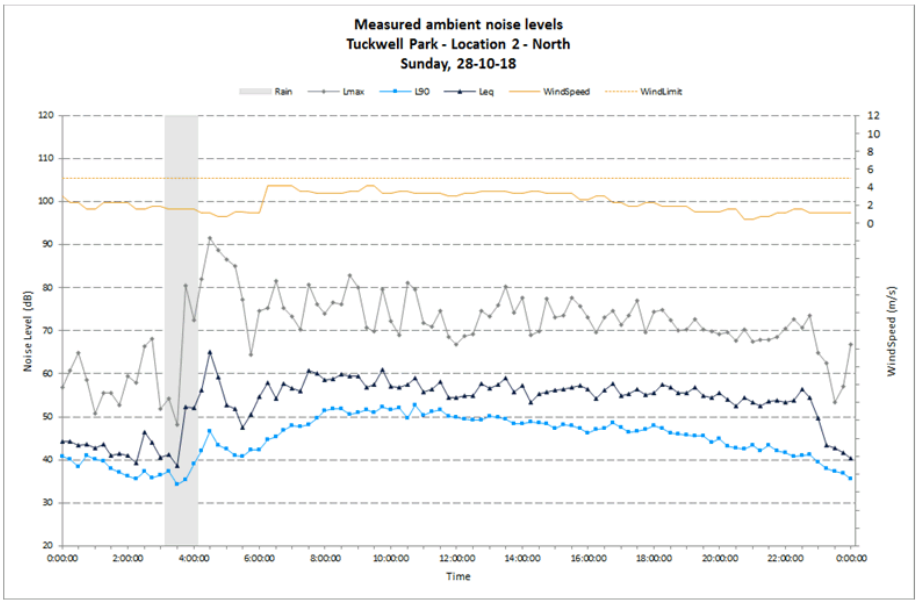
ITEM 1 (continued) **ATTACHMENT 2**



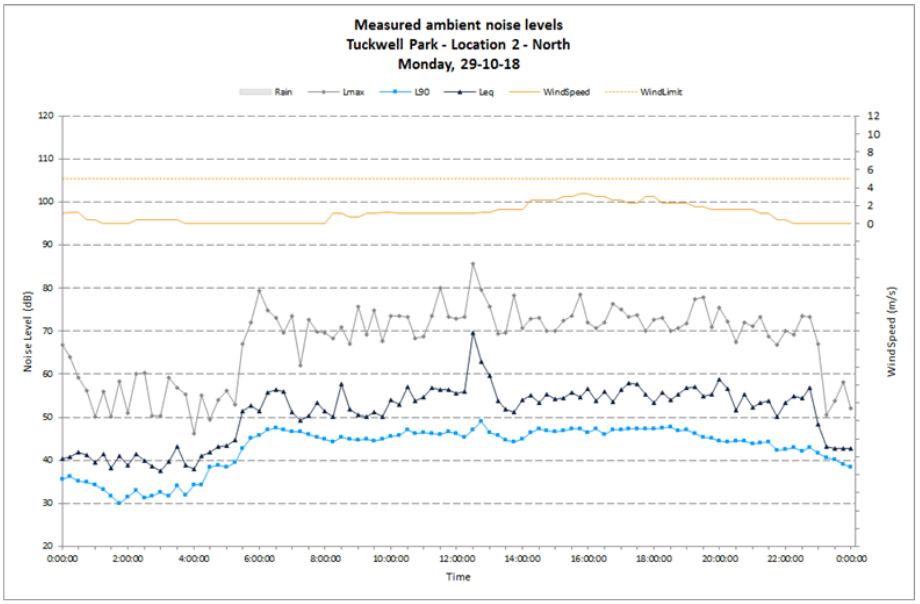


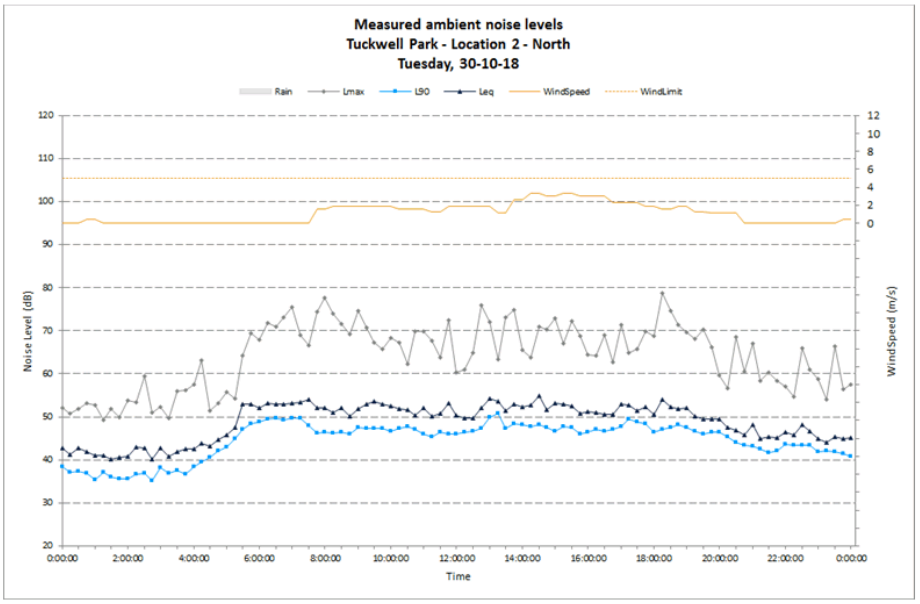
ITEM 1 (continued) **ATTACHMENT 2**



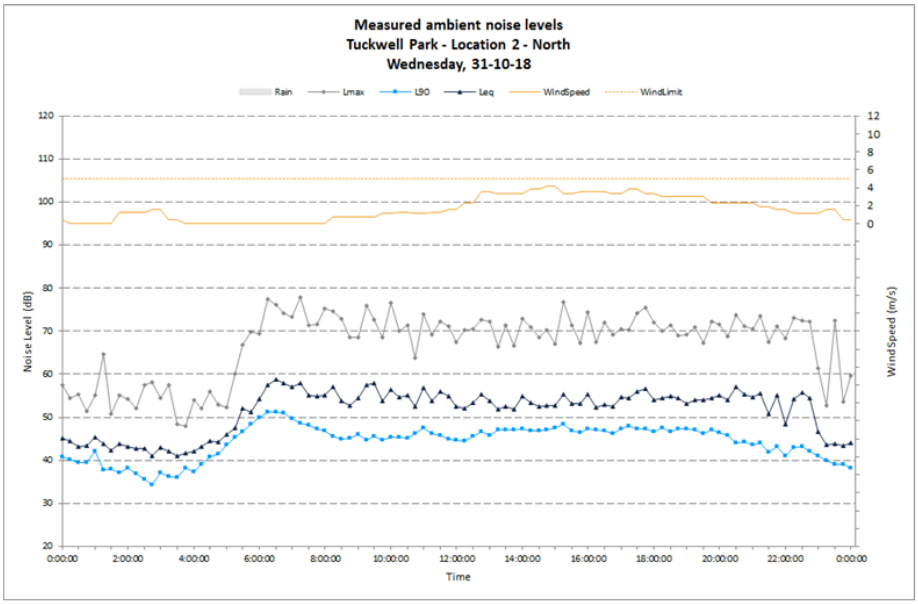


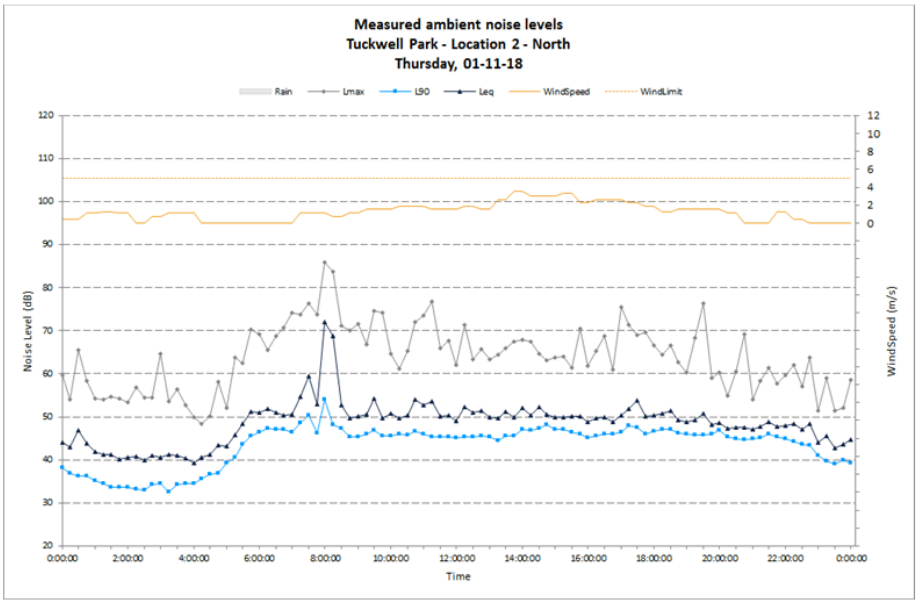
ITEM 1 (continued) **ATTACHMENT 2**



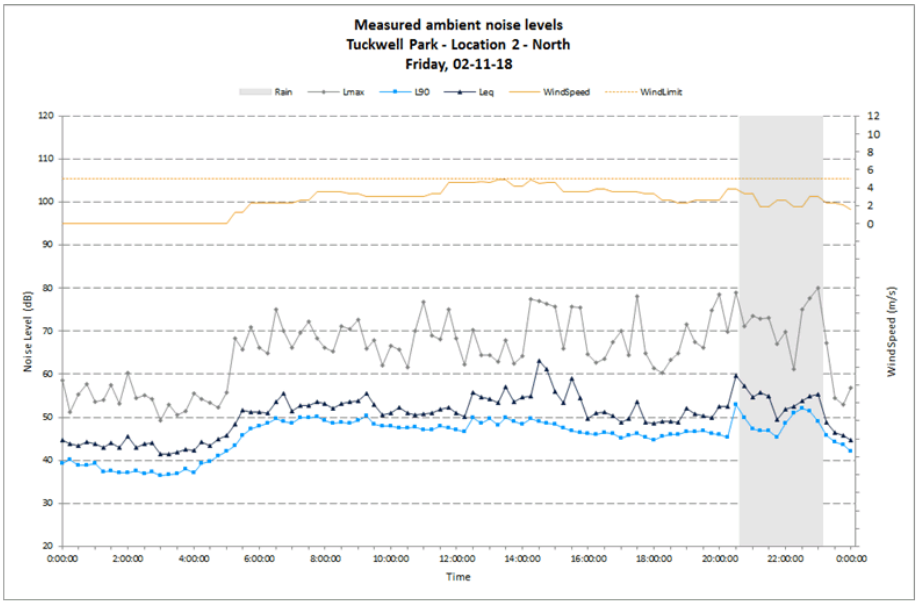


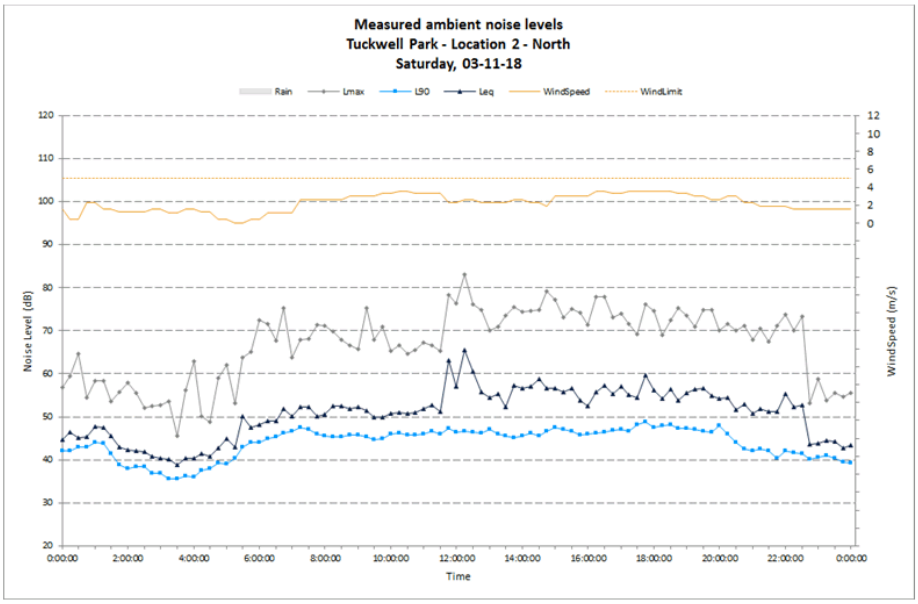
ITEM 1 (continued) **ATTACHMENT 2**



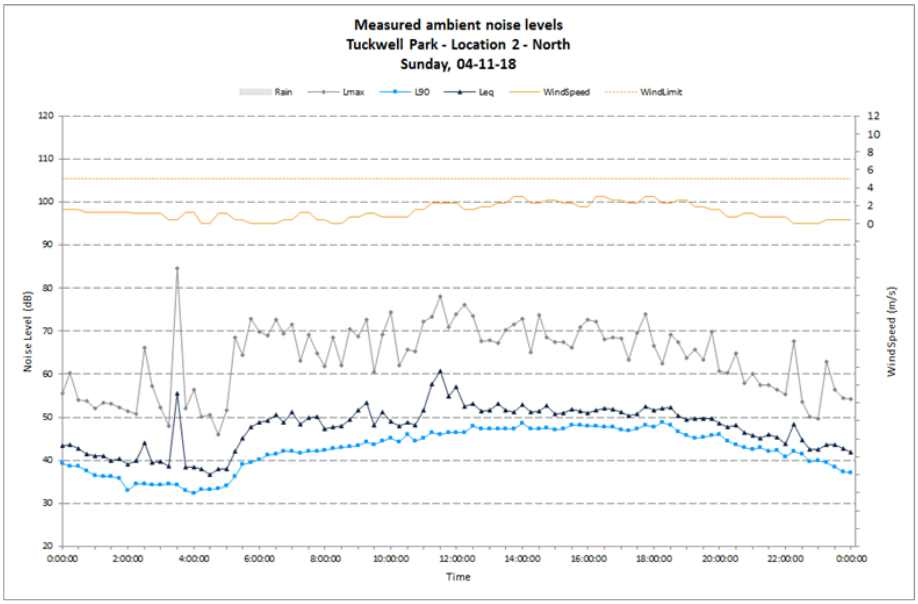


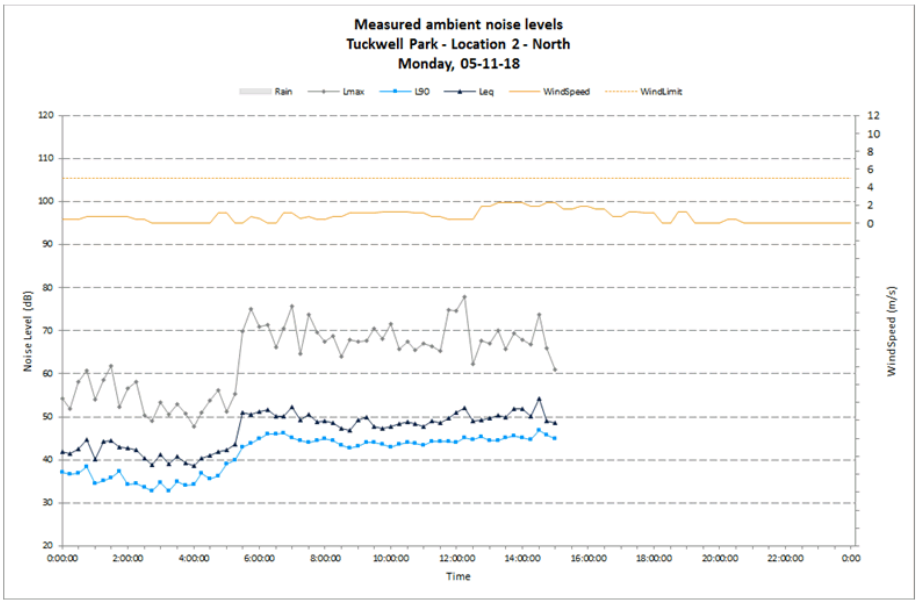
ITEM 1 (continued) **ATTACHMENT 2**





ITEM 1 (continued) **ATTACHMENT 2**





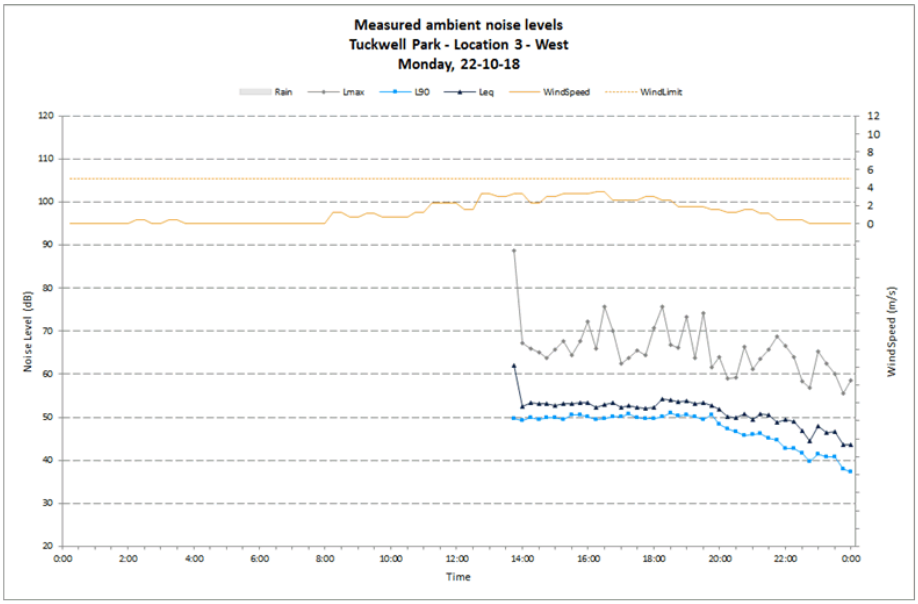
A.3 Location 3 – West

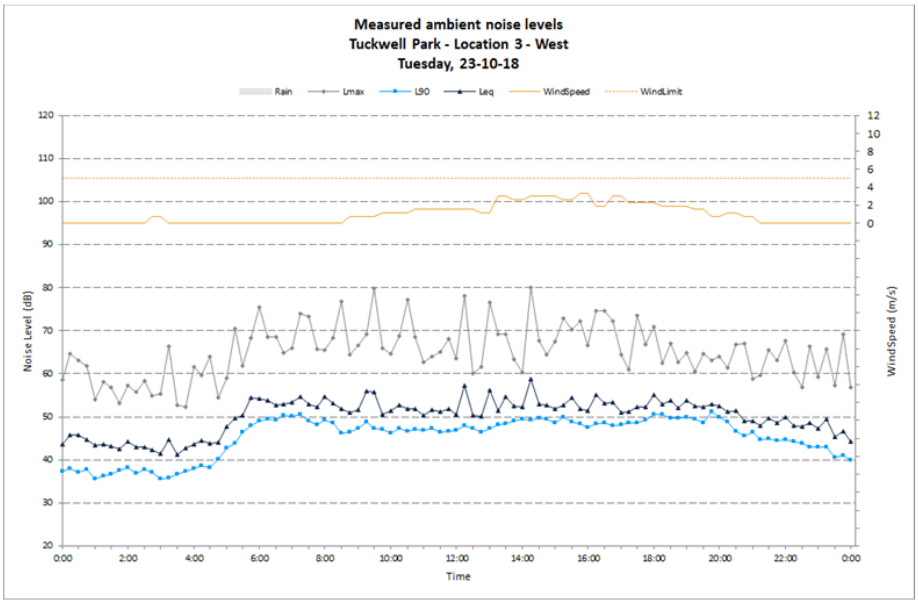
Table A.3 Location 3 – West – Results summary

Date	ABL Day	ABL Evening	ABL Night	$L_{Aeq,11\ hour}$ Day	$L_{Aeq,4\ hour}$ Evening	$L_{Aeq,9\ hour}$ Night	$L_{Aeq,15\ hour}$ Day	$L_{Aeq,24\ hour}$ Day	$L_{Aeq,8\ hour}$ Night
Monday, 22-10-18	0	45	36	0	52	48	0	0	47
Tuesday, 23-10-18	47	45	40	53	52	51	53	52	49
Wednesday, 24-10-18	49	45	34	57	56	52	57	56	49
Thursday, 25-10-18	48	45	36	59	51	51	58	56	48
Friday, 26-10-18	48	43	34	56	56	49	56	55	48
Saturday, 27-10-18	45	44	36	52	54	53	52	52	52
Sunday, 28-10-18	48	43	33	57	55	49	56	55	48
Monday, 29-10-18	47	44	38	61	56	50	60	58	49
Tuesday, 30-10-18	48	44	36	54	51	51	53	52	47
Wednesday, 31-10-18	47	43	34	55	55	49	55	53	48
Thursday, 01-11-18	47	47	39	55	51	49	54	53	48
Friday, 02-11-18	48	0	38	53	0	47	53	52	46
Saturday, 03-11-18	46	43	34	53	55	47	54	52	46
Sunday, 04-11-18	44	44	36	52	51	48	51	50	45
Monday, 05-11-18	0	0	0	0	0	0	0	0	0
Summary Values	47	44	36	56	54	50	56	54	48

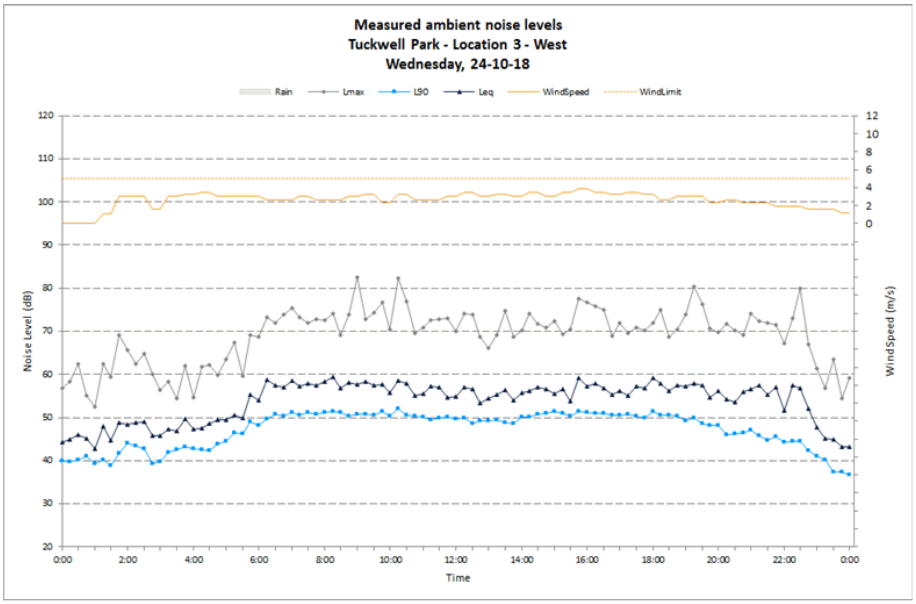
Notes: 1. 0 indicates periods with too few valid samples due to weather or logger operation
2. Leq24hr encompasses the period 7am to 7am

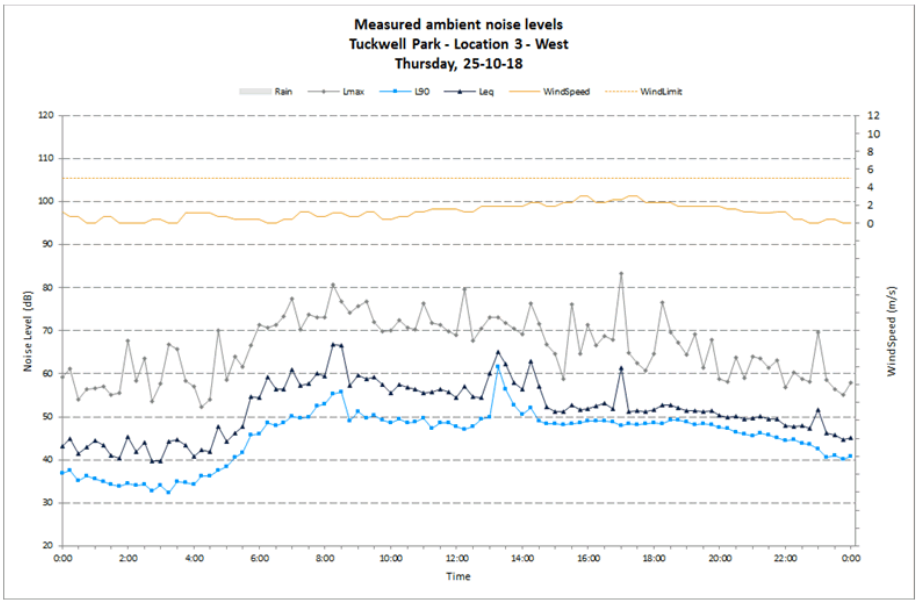
ITEM 1 (continued) **ATTACHMENT 2**



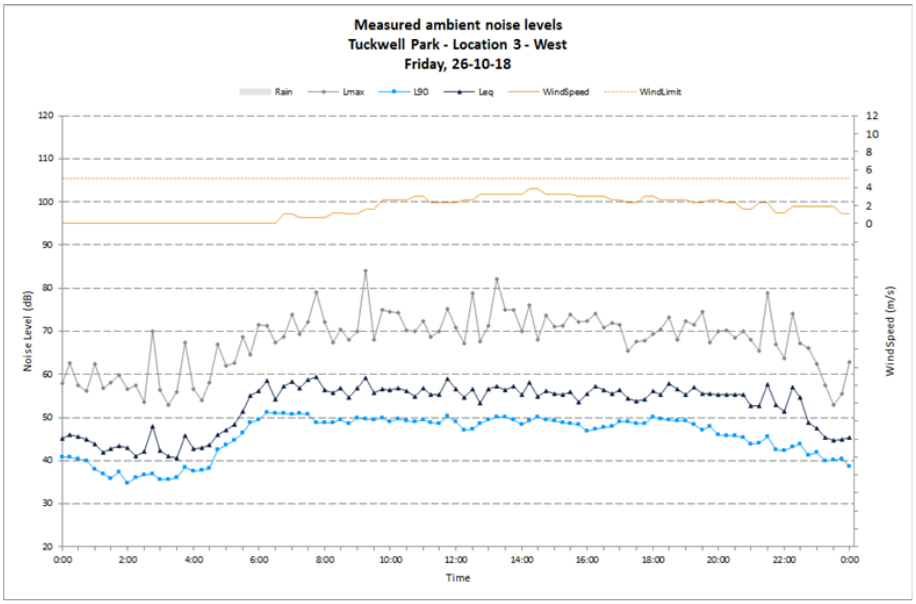


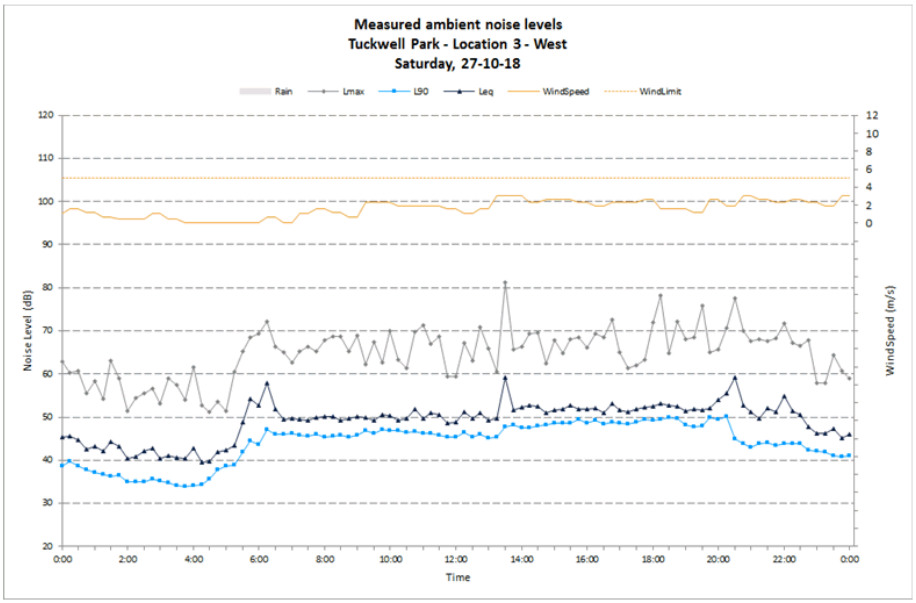
ITEM 1 (continued) **ATTACHMENT 2**



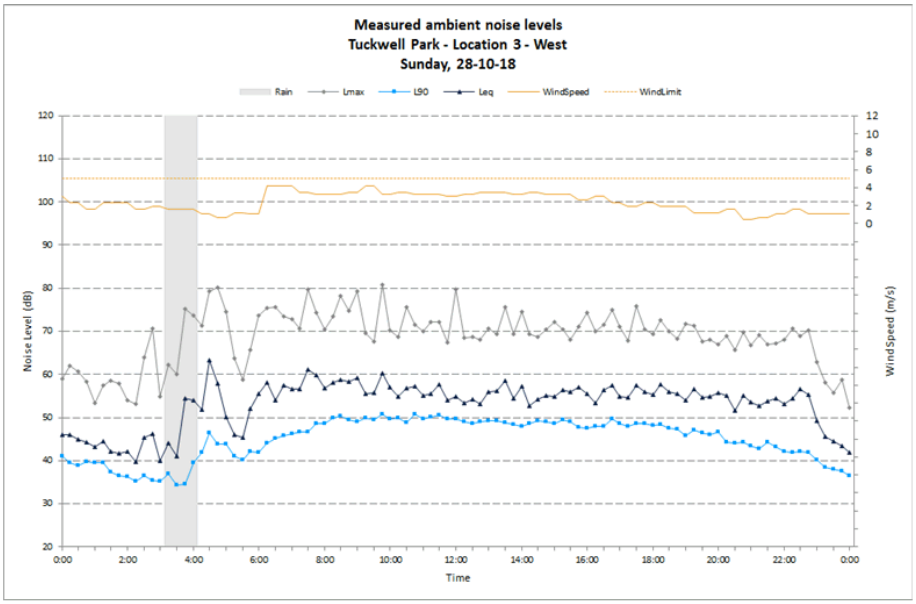


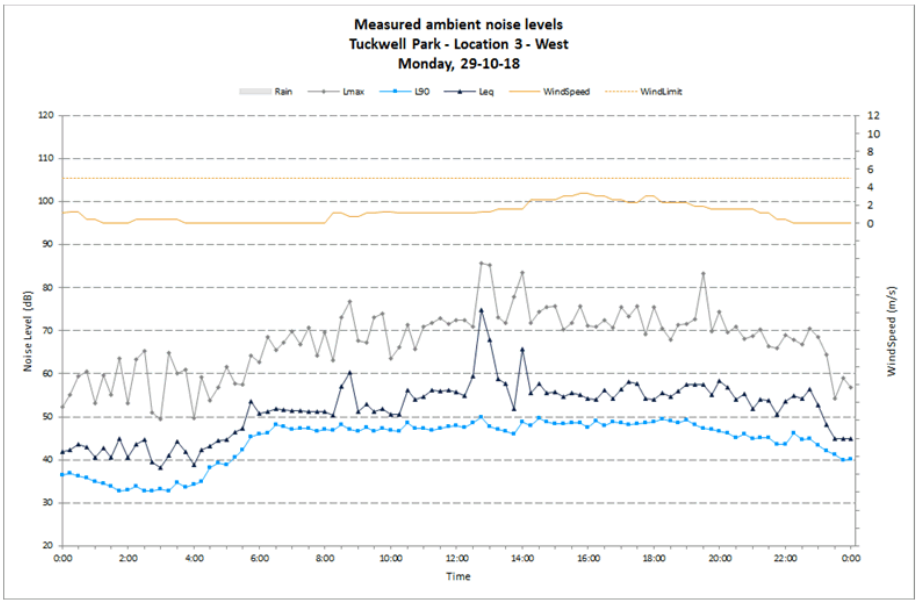
ITEM 1 (continued) **ATTACHMENT 2**



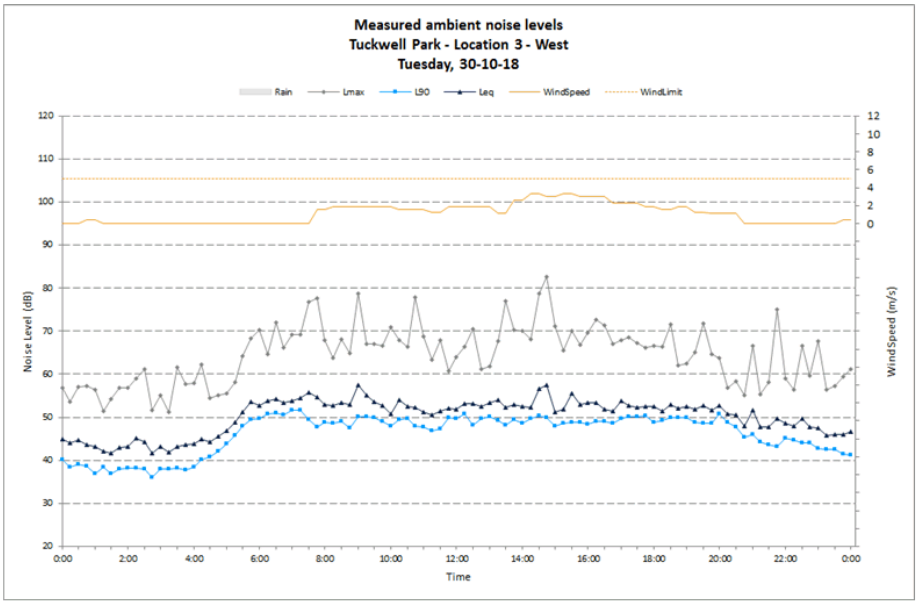


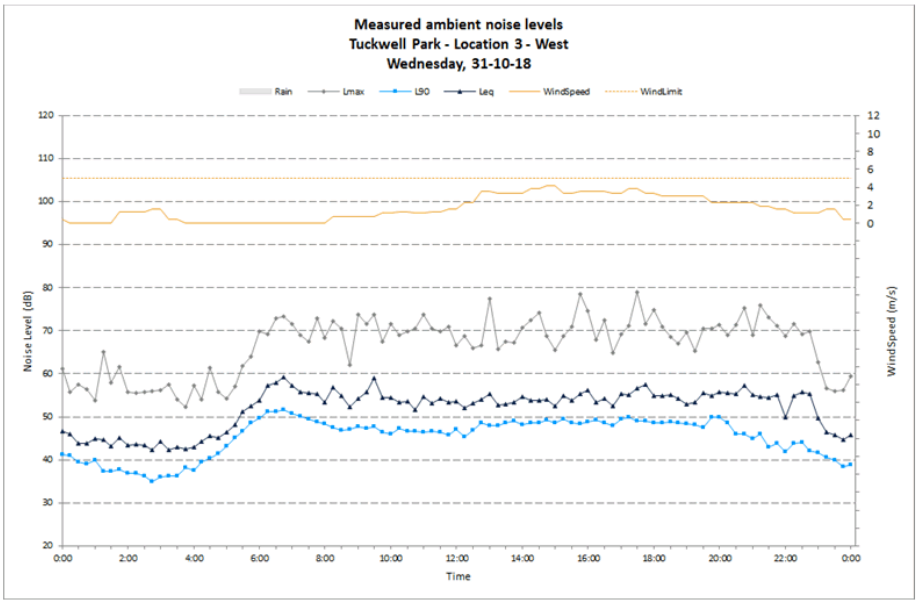
ITEM 1 (continued) **ATTACHMENT 2**



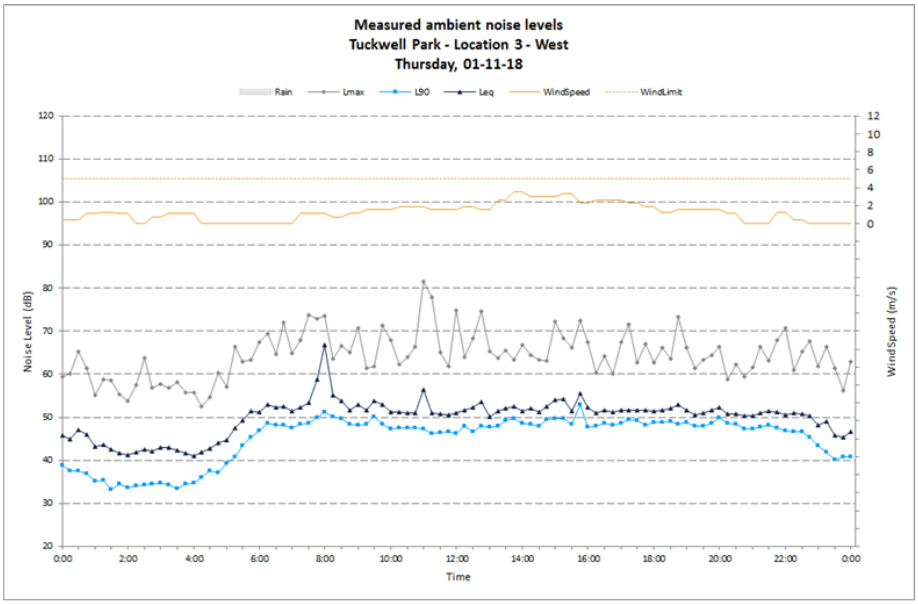


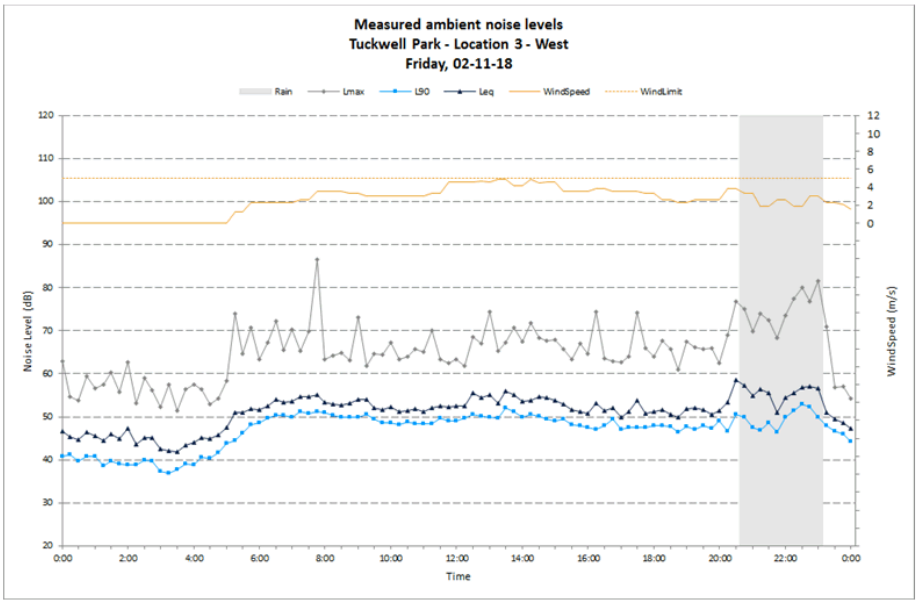
ITEM 1 (continued) **ATTACHMENT 2**



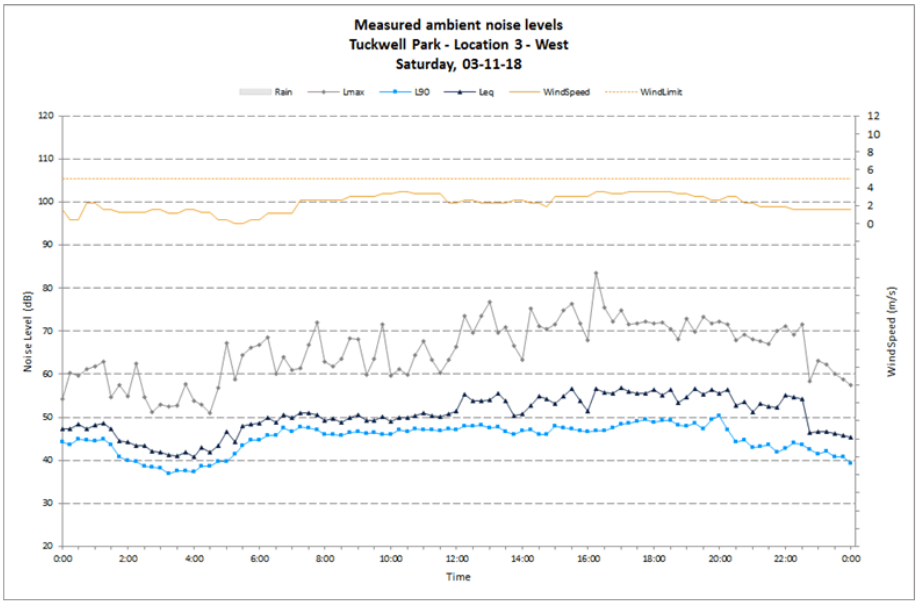


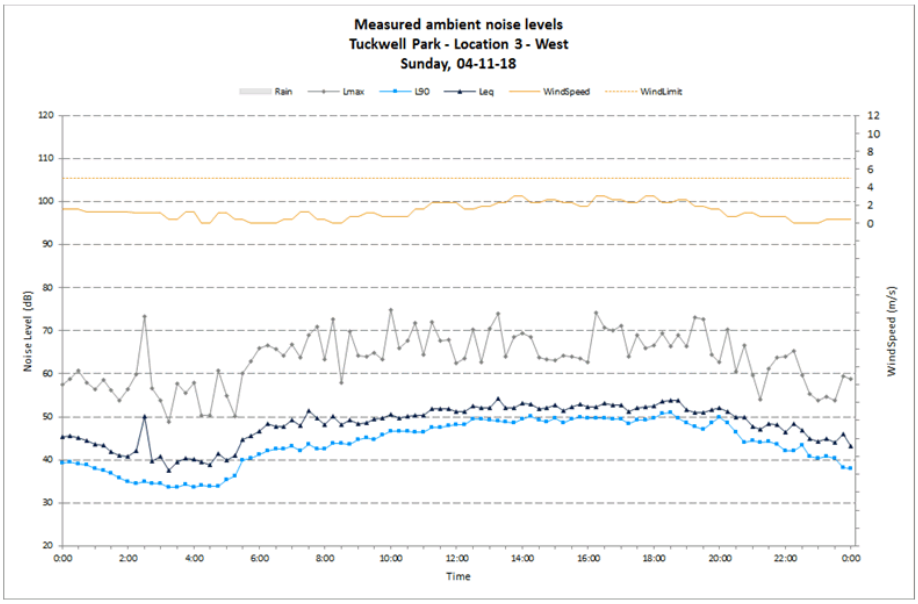
ITEM 1 (continued) **ATTACHMENT 2**



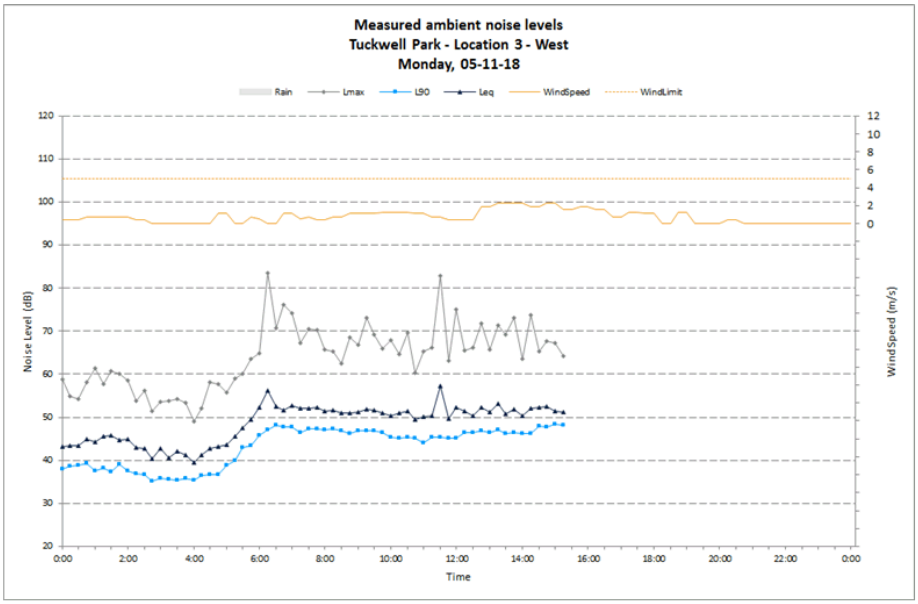


ITEM 1 (continued) **ATTACHMENT 2**





ITEM 1 (continued) **ATTACHMENT 2**



ITEM 1 (continued) **ATTACHMENT 2**

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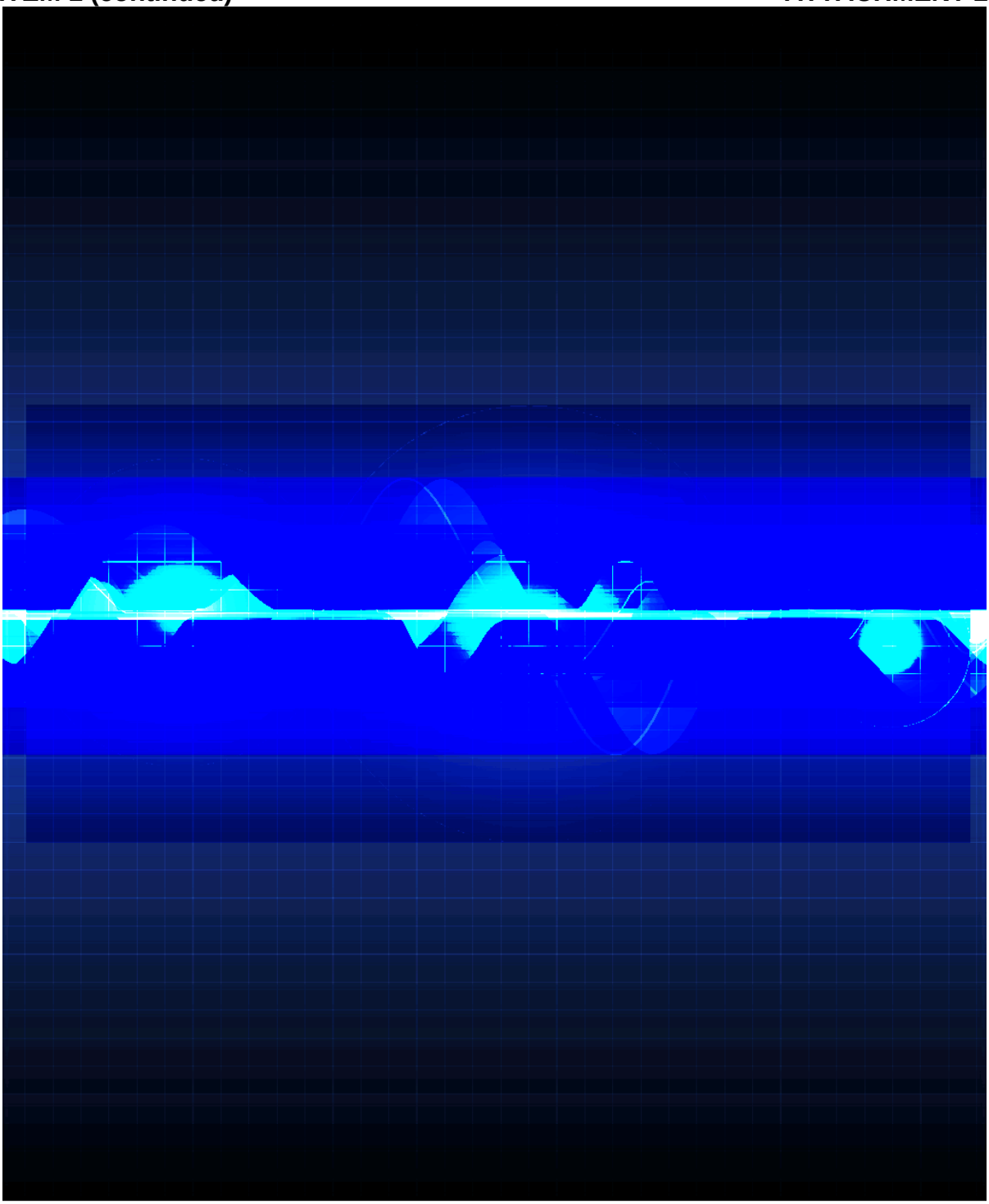
ITEM 1 (continued) **ATTACHMENT 2**



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ITEM 1 (continued) **ATTACHMENT 2**

Appendix C Lighting Assessment

ITEM 1 (continued) **ATTACHMENT 2**

Obtrusive Light - Compliance Report

AS 4282-1997, Pre-Curfew, Residential - Light Surrounds
Filename: Tuckwell 1
29/06/2018 12:14:21 PM

Illuminance

Maximum Allowable Value: 10 Lux

Calculations Tested (7):

Calculation Label	Test Results	Max. Illum.	
ObtrusiveLight_1_Ill_Seg1		**PASS**	2.5
ObtrusiveLight_1_Ill_Seg2		**PASS**	1.4
ObtrusiveLight_2_Ill_Seg1		**PASS**	0.5
ObtrusiveLight_2_Ill_Seg2		**PASS**	0.5
ObtrusiveLight_3_Ill_Seg1		**PASS**	0.6
ObtrusiveLight_4_Ill_Seg1		**PASS**	2.0
ObtrusiveLight_4_Ill_Seg2		**PASS**	2.0

Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 7500 Cd
Control Angle: 83 Degrees

Luminaire Locations Tested (12)
Test Results: **PASS**

All Luminaire Locations (12):

Lum.No.	Label	Cd	Tilt	Roll	Spin
10	BVP525_OUT_T30_50K_LED1930_75	760	68	0	0
5	BVP525_OUT_T30_50K_LED1930_75	1232	70	0	0
12	BVP525_OUT_T30_50K_LED1930_75	1232	70	0	0
1	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
2	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
3	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
4	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
6	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
7	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
8	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
9	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0
11	BVP525_OUT_T30_50K_LED1930_75	3706	72	0	0

ITEM 1 (continued) **ATTACHMENT 2**

Appendix D Bush fire assessment

ITEM 1 (continued) **ATTACHMENT 2**

TEAR OUT & ATTACH THIS BUSH FIRE ASSESSMENT REPORT WITH YOUR APPLICATION TO COUNCIL

SECTION TWO - BUSH FIRE ASSESSMENT REPORT (Attach to DA)

PART A Property Details

Applicants Name: **City of Ryde Council** ...**(Contact: Matthew Farah)**.....

Contact Phone Number; (H): **02 9952810**..... (M): .....

Council: **City of Ryde Council**..... Council Reference (if known): .....

Lot: **1** DP: **578025** Lot: **2** DP: **587346** Lot: **72** DP: **598636**

Address to be developed: **Tuckwell Park, Fontenoy Road, Macquarie Park**.....

My property is on Bush Fire Prone Land: [X] Yes

PART B Type of Proposal

Type of Proposal:

- [X] New Building
- [ ] Dual Occupancy
- [ ] Alteration/Additions to an existing building
- [ ] Urban
- [ ] Rural Residential
- [ ] Isolated Rural

Proposal Description: *e.g. two storey house with attached garage* **Construct four 22m high light poles with lights**

Copy of plans attached [X] Yes

PART C Bush Fire Attack and Level of Construction

Step 1: Asess the vegetation about the proposed building in all directions and convert from Keith to AUSLIG (1990) using Table1

CATEGORY	NORTH	EAST	SOUTH	WEST
Converted vegetation	[ ] Forest [ ] Woodland [ ] Shrubland [ ] Scrub [ ] Mallee/Mulga [ ] Rainforest [ ] Tussock [ ] Moorland [X] Managed Land	[X] Forest [ ] Woodland [ ] Shrubland [ ] Scrub [ ] Mallee/Mulga [ ] Rainforest [ ] Tussock [ ] Moorland [ ] Managed Land	[ ] Forest [ ] Woodland [ ] Shrubland [ ] Scrub [ ] Mallee/Mulga [ ] Rainforest [ ] Tussock [ ] Moorland [X] Managed Land	[ ] Forest [ ] Woodland [ ] Shrubland [ ] Scrub [ ] Mallee/Mulga [ ] Rainforest [ ] Tussock [ ] Moorland [X] Managed Land

Copy of any relevant photos attached [ ] Yes

NSW RURAL FIRE SERVICE **GUIDELINES FOR SINGLE DWELLING DEVELOPMENT APPLICATIONS V116**

22

ITEM 1 (continued) **ATTACHMENT 2**

TEAR OUT & ATTACH THIS BUSH FIRE ASSESSMENT REPORT WITH YOUR APPLICATION TO COUNCIL

Step 2: Determine the distance from asset to boundary line

ASPECT	NORTH	EAST	SOUTH	WEST
Distance	..... m	..45..... m	..... m	..... m

Step 3: Determine the distance from the building line to the vegetation in each direction as above

ASPECT	NORTH	EAST	SOUTH	WEST
Distance	..... m	..45..... m	..... m	..... m

Step 4: Determine the effective slope that will influence bush fire behaviour in each direction

CATEGORY	NORTH	EAST	SOUTH	WEST
Slope under the hazard (over 100m) [in degrees]	☐ upslope/flat ☐ >0 to 5 ☐ >5 to 10 ☐ >10 to 15 ☐ >15 to 18	☒ upslope/flat ☐ >0 to 5 ☐ >5 to 10 ☐ >10 to 15 ☐ >15 to 18	☐ upslope/flat ☐ >0 to 5 ☐ >5 to 10 ☐ >10 to 15 ☐ >15 to 18	☐ upslope/flat ☐ >0 to 5 ☐ >5 to 10 ☐ >10 to 15 ☐ >15 to 18

Step 5: Determine the Fire Danger Index (FDI) that applies to your local government area (see page 9). Circle the relevant FDI below

FDI	☒ 100	☐ 80	☐ 50

Step 6: Match the relevant FDI, vegetation, distance and slope to determine the required APZ and Construction level

FDI	☒ 100 (see Table 4. page 11)	☐ 80 (see Table 5. page 12)	☐ 50 (see Table 6. page 13)

Identify the bush fire attack level for each direction, select the highest level for the entire building and record below. Note BAL-12.5 is the lowest construction level within the scope of AS3959.

Bush Fire Attack Level

☐ BAL- FZ
☐ BAL- 40
☐ BAL- 29
☒ BAL- 19
☐ BAL–12.5
☐ No requirement

Does your proposal meet the required construction level ☒ YES ☐ NO

PART D
Flame Zone **Provide details and evidence of an alternative solution.**

If you determine your house is located in the flame zone you may wish to seek the advice of a specialist bush fire consultant.

NSW RURAL FIRE SERVICE **GUIDELINES FOR SINGLE DWELLING DEVELOPMENT APPLICATIONS V116**

23

ITEM 1 (continued) **ATTACHMENT 2**

TEAR OUT & ATTACH THIS BUSH FIRE ASSESSMENT REPORT WITH YOUR APPLICATION TO COUNCIL

PART E Water Supplies

Does your property have a reticulated (piped) water supply?; If so, please provide details on the distance to the nearest fire hydrant on your site plan.

Reticulated (piped) water supply is available

[X] Yes [ ] No Distance ..**<100m**.. (m) to hydrant from ~~house~~ **light poles**.

Do you have or do you plan to have a dedicated water supply for firefighting purposes?

[ ] Yes [X] No

Development Type	Water Requirement	Planned	Existing
Residential Lots (<1,000m2)	5,000 l/lot		
Rural-residential Lots (1,000–10,000m2)	10,000 l/lot		
Large Rural/Lifestyle Lots (>10,000m2)	20,000 l/lot		
Dual Occupancy	2,500 l/unit		
Townhouse/Unit Style (e.g. Flats)	5,000 l/unit up to 20,000l maximum		

Do you have or do you plan to have a static water supply (e.g. pool, tank or dam). Include approx. size in litres and also include tank material if using a tank:

Water supply type	Capacity	Construction material	Planned	Existing
e.g. pool	50,000l	Above ground rolled steel with plastic liner		
Water tank onsite	23,000l	Above ground		Existing

NOTE: Check with your local council concerning their Local Environmental Plan (LEP) or their Development Control Plan (DCP) as this may dictate the type and size of tank.

PART F Gas Supplies

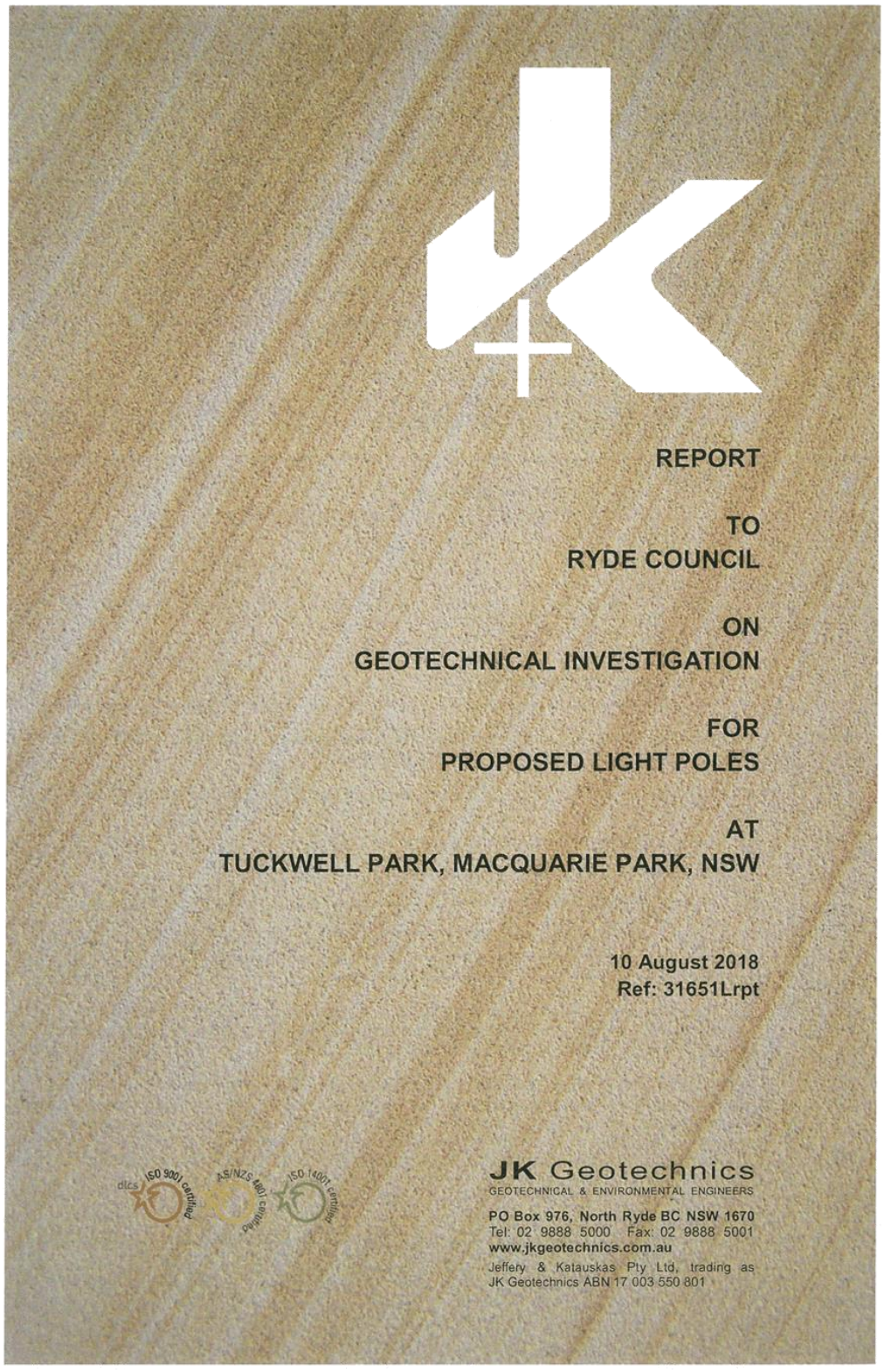
GAS
Do you have reticulated (piped) or bottled gas?

TYPE OF GAS

Reticulated gas [ ] Yes [X] No
Bottled gas [X] Yes [ ] No Bottled gas is used for barbeques and is located at the amenity block, outside the buffer zone

NOTE: *When attaching development plans please ensure they clearly show location and details of electricity and gas (where relevant) on your property.*

ITEM 1 (continued) **ATTACHMENT 2**



ITEM 1 (continued) **ATTACHMENT 2**

Date: 10 August 2018
Report No: 31651Lrpt
Revision No: 0

Report prepared by:

Michael Serra
Senior Geotechnical Engineer

Report reviewed by:

Linton Speechley
Principal I Geotechnical Engineer

For and on behalf of
JK GEOTECHNICS
PO Box 976
NORTH RYDE BC NSW 1670

ITEM 1 (continued) **ATTACHMENT 2**

TABLE OF CONTENTS

1 INTRODUCTION

This report presents the results of a geotechnical investigation for the proposed light poles at Tuckwell Park, Macquarie Park, NSW. The location of the site is shown on the attached Figure 1. The investigation was commissioned by Mr Matthew Farah of Ryde Council and was completed in accordance with our proposal (Ref: P47559L, dated 4 July 2018).

We understand that it is proposed to install four new light poles around the existing sports field.

The purpose of the investigation was to obtain geotechnical information on subsurface conditions at the proposed light pole locations. Based on this information we have provided comments and recommendations on geotechnical parameters for footing design.

2 INVESTIGATION PROCEDURE

Prior to the commencement of the fieldwork, we carried out a Dial Before You Dig (DBYD search and the borehole locations were electromagnetically scanned by a specialist subcontractor for buried services.

The fieldwork for the investigation was carried out on 16 July 2018, and included the auger drilling of four boreholes (BH1 to BH4 inclusive) to depths ranging from 3.5m to 6.0m below existing surface levels. The boreholes were drilled using our truck mounted JK350 drill rig.

The borehole locations, as shown on the attached Figure 2, were set out by taped measurements from existing surface features and plotted on an aerial photograph.

The apparent compaction of the fill and the strength of the residual soils was assessed from the Standard Penetration Test (SPT) 'N' values, augmented by hand penetrometer readings on cohesive samples recovered in the SPT split tube sampler. The strength of the weathered bedrock was assessed from observation of the auger drilling resistance using a Tungsten Carbide 'TC' drill bit, together with examination of the recovered rock cuttings and correlation with the results of subsequent moisture content tests completed on the rock chips. It should be noted that strengths assessed in this way are approximate and variances of one strength order should not be unexpected.

Groundwater observations were made during and on completion of drilling. No longer term groundwater monitoring was carried out.

The fieldwork was completed in the full-time presence of our geotechnical engineer, (Mr Bryan Zheng), who set out the borehole locations, logged the encountered subsurface profile and nominated insitu sampling and testing. The borehole logs are attached, together with a set of explanatory notes, which describe the investigation techniques, and their limitations, and define the logging terms and symbols used.

Selected soil samples were returned to Soil Test Services (STS) and Envirolab Services Pty Ltd, both NATA accredited laboratories, for testing to determine moisture content, Atterberg limits, linear shrinkage, soil pH, sulphate contents, chloride contents and resistivity. The results of the laboratory testing are summarised in STS Table A, and the Envirolab Certificate of Analysis No. 196525. Contamination testing of the site soils was not carried out as this was outside the agreed scope of this geotechnical investigation.

3 RESULTS OF INVESTIGATION

3.1 Site Description

The site is located near the crest of a north facing hillside and is bound by Fontenoy Road and Lane Cove Road to the south and east, respectively, and by residential allotments to the north and west. The existing grassed playing field is relatively level, and appears to have been formed by minor cuts and primarily fill earth works. The grassed playing field is up to about 3.8m above the northern neighbouring residential properties with grassed batters sloping down from the edge of the field to the adjoining properties at between about 5° and 15°. The playing field is surrounded by a concrete footpath and various large trees.

An asphaltic concrete (AC) paved carpark is located in the western corner of the site; with a single storey brick amenities building and playing equipment area located in the north-western portion of the site. At the time of our investigation, a proposed basketball court was under construction to the south of the amenities block. The carpark, equipment and amenities are in fair to good condition.

Neighbouring the eastern corner of the site is No.448 Lane Cove Road, which comprises a block of four, two storey townhouses. The rear of the townhouses appear to have been cut into the slope, and the cut is retained by block retaining walls ranging from about 1m to 2m high.

3.2 Subsurface Conditions

Reference to the 1:100,000 Geological Map of the Sydney Region indicates that the site is underlain by Hawkesbury Sandstone. The investigation has encountered a moderate depth of fill over the northern portion of the site and relatively shallow bedrock over the southern portion. Some of the pertinent details of the materials encountered are presented below. For a more detailed description of the materials encountered at a particular test location reference should be made to the attached borehole logs.

Fill

Fill was encountered in BH2 and BH3 and extended to inferred depths of 3.0m. The fill was predominantly a silty clay and contained variable amounts of igneous, sandstone and ironstone gravel. Based on the SPT 'N' values, the fill was assessed to be well compacted.

Residual Soil

Residual silty clays were encountered from the surface in BH1 and BH4 and below the fill in BH2. No residual soils were encountered in BH3, although the extremely weathered sandstone encountered below the fill will remould to a material with similar properties to a residual soil. The residual soils comprised silty clays of high plasticity and hard strength, with some ironstone gravel inclusions.

Weathered Siltstone and Sandstone Bedrock

Weathered siltstone or sandstone bedrock was encountered at depths of 1.0m in BH1 and 0.8m in BH4. The bedrock encountered in these boreholes was assessed as low or medium strength. In BH2, the upper extremely weathered bedrock was encountered at a depth of 4.2m and this was underlain by medium to high strength sandstone bedrock at a depth of 5.0m. 'TC' bit refusal occurred in the medium to high strength bedrock. In BH3, the upper extremely weathered bedrock was encountered immediately below the fill at a depth of 3.0m and this was underlain by medium strength sandstone bedrock at a depth of 4.7m.

Groundwater

No groundwater seepage was encountered during or shortly after completion of auger drilling. No longer term groundwater monitoring was undertaken.

3.3 Laboratory Test Results

The results of moisture content tests on the recovered rock chips correlate reasonably well with our field strength assessments. The Atterberg limit and linear shrinkage test has shown the clay fill tested from BH2 to be of high plasticity, and it will therefore have a high potential for shrink-swell movements with changes in moisture content.

The soil pH values on samples of the clay fill and weathered sandstone ranged from 4.4 to 6.2. The sulphate contents ranged from less than 10mg/kg to 23mg/kg, the chloride contents were 10mg/kg to 61mg/kg and the resistivity values ranged from 18,000ohm.cm to 58,000ohm.cm. Based on these results, the soils would be classified as having up to a 'moderate'' exposure classification for concrete piles and 'Non-Aggressive' exposure classification for steel piles in accordance with Tables 6.4.2(C) and 6.5.2(C) of AS2159-2009 'Piling – Design and Installation'.

4 COMMENTS AND RECOMMENDATIONS

The investigation has indicated that the site is underlain by a variable layer of fill (which generally appears to be well compacted) overlying inferred hard residual silty clays and then weathered siltstone and sandstone bedrock. No fill was encountered in the southern-most boreholes (BH1 and BH4), while towards the northern end of the site (BH2 and BH3), the fill appears to extend down to depths of about 3m. We note that it is often difficult to determine the exact depth of fill in small diameter boreholes, particularly where the fill has been placed as a cut to fill earthworks operation. Therefore the depth of fill shown on the logs may vary and it is possible that the lower layers of fill are natural residual soils or alternatively that the upper layers of residual soils are fill.

Based on the subsurface conditions encountered within the boreholes, it is our opinion that footings for the new light poles should be founded within the underlying weathered bedrock. In BH1 and BH4 the bedrock was encountered at depths of 1.0m and 0.8m, respectively. Therefore at these locations, pad footings founded on the bedrock would seem a suitable founding system. In BH2 and BH3, where the depth to at least extremely weathered sandstone was 4.2m and 3.0m, respectively, we consider that bored piles would be a suitable footing solution to carry the vertical loads.

We consider that pad footings founded on and with a minimum embedment of 0.3m into the underlying bedrock of at least very low strength may be designed on the basis of a maximum allowable end bearing pressure of 600kPa.

Where bored piles are socketed into the underlying extremely weathered sandstone then we consider that they may also be designed for a maximum allowable end bearing pressure of 600kPa provided the length to diameter ratio of the pile is greater than 4. Bored piles may also be designed for a skin friction of 50kPa through the extremely weathered sandstone for that portion of the socket deeper than the minimum 0.3m socket.

If bored piles are founded with a minimum embedment of 0.3m into the underlying sandstone bedrock of at least medium strength, then we consider that they may be designed for a maximum allowable end bearing pressure of 1000kPa and a maximum allowable skin friction of 100kPa, for those portions of the socket through medium strength sandstone in excess of the minimum 0.3m socket.

The above allowable skin friction values are suitable for compressive loads. Where piles are to carry tension loads, then the above allowable skin friction values should be reduced by 50% (i.e. halved).

We expect that the light pole footings will also need to carry lateral loads. The following table provides our recommended design parameters for design of laterally loaded piled footings. Due to the reactive nature of the fill and residual soils, the upper fill or residual soil to a depth of 1.5 times the pile diameter should be ignored in any lateral load calculation to account for the possibility that the soils will shrink away from the pile shaft. Where piles are embedded through both the soils and weathered rock, consideration must also be given in the design for strain incompatibility, where the soils require a greater strain to achieve the allowable loads than the bedrock. We would be pleased to assist or review any laterally loaded pile design if requested.

Material	Bulk Unit Weight (kN/m^3)	Undrained Cohesion (kPa)	Effective Cohesion (kPa)	Friction Angle (ϕ)	Elastic Modulus (MPa)
Well Compacted Clay fill	19	100	2	28	10
Very Stiff or Hard Residual Soils	20	150	5	28	20

Material	Bulk Unit Weight (kN/m^3)	Allowable Lateral Resistance (kPa)	Elastic Modulus (MPa)
Extremely Weathered Sandstone	21	200	100
Medium Strength Sandstone	23	400	500

Where pad footings founded on the underlying bedrock of at least very low strength are used to support the light poles, the rock founding stratum should be thoroughly cleaned of any loose, or softened material and grooved (or roughened) to resist sliding. The lateral resistance for a pad footing may be calculated using a friction angle of 45° for the roughened very low strength sandstone bedrock, plus any passive soil resistance using a passive earth pressure coefficient Kp of 2.7 and a triangular passive earth pressure envelope.

We recommend that all footing excavations and pile drilling be inspected by a geotechnical engineer to confirm that the conditions encountered are consistent with our expectations from this investigation. We note that fill can be variable and although it was shown to be well compacted in the boreholes drilled as part of this investigation, poorer areas of fill may exist. Footings and bored piles should be excavated/drilled, cleaned, inspected and poured with minimal delay. If groundwater is encountered during pile drilling, then water should be pumped from the base of piles prior to pouring. If there is a delay in pouring concrete, the base of the bored piers will have to be redrilled to remove any softened material or 'fall-in'.

5 GENERAL COMMENTS

The recommendations presented in this report include specific issues to be addressed during the construction phase of the project. In the event that any of the construction phase recommendations presented in this report are not implemented, the general recommendations may become inapplicable and JK Geotechnics accept no responsibility whatsoever for the performance of the structure where recommendations are not implemented in full and properly tested, inspected and documented.

The subsurface conditions between the completed boreholes may be found to be different (or may be interpreted to be different) from those expected. Variation can also occur with groundwater conditions, especially after climatic changes. If such differences appear to exist, we recommend that you immediately contact this office.

This report provides advice on geotechnical aspects for the proposed civil and structural design. As part of the documentation stage of this project, Contract Documents and Specifications may be prepared based on our report. However, there may be design features we are not aware of or have not commented on for a variety of reasons. The designers should satisfy themselves that all the necessary advice has been obtained. If required, we could be commissioned to review the geotechnical aspects of contract documents to confirm the intent of our recommendations has been correctly implemented.

A waste classification will need to be assigned to any soil excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), General Solid, Restricted Solid or Hazardous Waste. Analysis takes seven to 10 working days to complete, therefore, an adequate allowance should be included in the construction program unless testing is completed prior to construction. If contamination is encountered, then substantial further testing (and associated delays) should be expected. We strongly recommend that this issue is addressed prior to the commencement of excavation on site.

ITEM 1 (continued) **ATTACHMENT 2**

115 Wicks Road
Macquarie Park, NSW 2113
PO Box 976
North Ryde, BC 1670
Telephone: 02 9888 5000
Facsimile: 02 9888 5001

SOIL TEST SERVICES
ABN 43 002 145 173

TABLE A
MOISTURE CONTENT, ATTERBERG LIMITS AND LINEAR SHRINKAGE TEST REPORT

Client: JK Geotechnics
Project: Proposed Light Poles
Location: Tuckwell Park, Macquarie Park, NSW

Ref No: 31651L
Report: A
Report Date: 30/07/2018
Page 1 of 1

AS 1289	TEST METHOD	2.1.1	3.1.2	3.2.1	3.3.1	3.4.1
BOREHOLE NUMBER	DEPTH m	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX %	LINEAR SHRINKAGE %
1	2.00-2.50	3.5				
2	1.50-1.95	17.4	51	22	29	14.5
3	4.70-5.00	11.3				
4	1.50-2.00	6.1				
4	4.60-4.80	5.3				

Notes:

- The test sample for liquid and plastic limit was air-dried & dry-sieved
- The linear shrinkage mould was 125mm
- Refer to appropriate notes for soil descriptions
- Date of receipt of sample: 20/7/18

ITEM 1 (continued) **ATTACHMENT 2**

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 196525

Client Details

Client	JK Geotechnics
Attention	L Speechley, Bryan Zheng
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	31651L, Macquarie Park
Number of Samples	3 Soil
Date samples received	18/07/2018
Date completed instructions received	18/07/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/07/2018
Date of Issue	23/07/2018

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Nick Sarlamis, Inorganics Supervisor

Authorised By

Jacinta Hurst, Laboratory Manager

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

Misc Inorg - Soil				
Our Reference		196525-1	196525-2	196525-3
Your Reference	UNITS	B BH2	A BH3	A BH4
Depth		3.0-3.45	4.0-4.5	1.0-1.5
Type of sample		Soil	Soil	Soil
Date prepared	-	19/07/2018	19/07/2018	19/07/2018
Date analysed	-	19/07/2018	19/07/2018	19/07/2018
pH 1:5 soil:water	pH Units	6.2	5.5	4.4
Chloride, Cl 1:5 soil:water	mg/kg	<10	<10	23
Sulphate, SO4 1:5 soil:water	mg/kg	10	48	61
Resistivity in soil*	ohm m	58000	31000	18000

Envirolab Reference: 196525
Revision No: R00

Page 2 of 7

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyer.

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			19/07/2018	1	19/07/2018	19/07/2018		19/07/2018	
Date analysed	-			19/07/2018	1	19/07/2018	19/07/2018		19/07/2018	
pH 1:5 soil:water	pH Units		Inorg-001		1	6.2	6.3	2	101	
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	<10	32	105	110	
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	10	40	120	115	
Resistivity in soil*	ohm m	1	Inorg-002	<1	1	580	320	58		

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

ITEM 1 (continued) **ATTACHMENT 2**

Client Reference: 31651L, Macquarie Park

Report Comments
MISC_INORG_DRY: The duplicate result is greater than the acceptable RPD, indicates possible sample heterogeneity.

ITEM 1 (continued) **ATTACHMENT 2**

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 1 1/1

Client: RYDE COUNCIL
Project: PROPOSED LIGHT POLES
Location: TUCKWELL PARK, MACQUARIE PARK, NSW

Job No. 31651L **Method:** SPIRAL AUGER JK350 **R.L. Surface:** N/A
Date: 16-7-18 **Datum:**
Logged/Checked by: B.Z./M.S.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPL -ETION					N = 28 8,14,14	0		CH	Silty CLAY: high plasticity, yellow brown, trace fine to medium grained sub angular and angular ironstone gravel.	w<PL	Hd		GRASS COVER RESIDUAL
						1		-	SILTSTONE: grey, with iron indurated bands and extremely weathered bands.	DW	L-M		HAWKESBURY SANDSTONE MODERATE 'TC' BIT RESISTANCE WITH LOW BANDS
						2		-	Interbedded SILTSTONE and SANDSTONE: SILTSTONE, grey brown. SANDSTONE, fine grained, grey and light grey, with iron indurated bands and extremely weathered bands.	DW	L-M		MODERATE RESISTANCE LOW RESISTANCE WITH MODERATE BANDS
						3					M		MODERATE RESISTANCE WITH HIGH BANDS
									END OF BOREHOLE AT 3.5m				'TC' BIT REFUSAL
						4							
						5							
						6							
						7							

ITEM 1 (continued) **ATTACHMENT 2**

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 2 1/1

Client: RYDE COUNCIL
Project: PROPOSED LIGHT POLES
Location: TUCKWELL PARK, MACQUARIE PARK, NSW

Job No. 31651L **Method:** SPIRAL AUGER JK350 **R.L. Surface:** N/A
Date: 16-7-18 **Datum:**
Logged/Checked by: B.Z./M.S.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPL -ETION						0			FILL: Silty clay, high plasticity, light grey and red brown, trace fine to coarse grained sub angular igneous and ironstone gravel.	w<PL			GRASS COVER
					N = 18 10,9,9	1			as above, but without gravel.				APPEARS WELL COMPACTED
					N = 14 10,7,7	2			as above, but brown mottled red brown and dark grey, with fine to medium grained, sub angular and angular ironstone igneous gravel.				
					N = 20 15,11,9	3		CH	Silty CLAY: high plasticity, yellow brown mottled red brown, trace of fine to medium grained ironstone gravel.	w<PL	Hd		RESIDUAL POSSIBLE FILL
						4		-	Extremely Weathered sandstone: sandy CLAY, medium to high plasticity, light grey and red brown, with iron indurated bands and very low strength bands.	XW	Hd		HAWKESBURY SANDSTONE BANDED VERY LOW TO LOW 'TC' BIT RESISTANCE
						5			SANDSTONE: fine to medium grained, light grey and red brown, with extremely weathered bands and iron indurated bands.	MW	M-H		MODERATE TO HIGH RESISTANCE
									END OF BOREHOLE AT 5.1m				'TC' BIT REFUSAL
						6							
						7							

ITEM 1 (continued) **ATTACHMENT 2**

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 3 1/1

Client: RYDE COUNCIL
Project: PROPOSED LIGHT POLES
Location: TUCKWELL PARK, MACQUARIE PARK, NSW

Job No. 31651L **Method:** SPIRAL AUGER JK350 **R.L. Surface:** N/A
Date: 16-7-18 **Datum:**
Logged/Checked by: B.Z./M.S.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPL -ETION					N = 26 8,11,15	0			FILL: Silty clay, high plasticity, brown mottled red brown and dark grey, with fine to coarse grained sub angular and angular igneous, ironstone and sandstone gravel.	w<PL			GRASS COVER APPEARS WELL COMPACTED
					N = 11 5,4,7	1							
						2							
					N = 25 7,15,10	3		-	Extremely Weathered sandstone: sandy CLAY, medium to high plasticity, light grey and light brown, with very low strength bands and iron indurated bands.	XW	Hd		HAWKESBURY SANDSTONE BANDED VERY LOW TO LOW 'TC' BIT RESISTANCE
						4							
						5			SANDSTONE: fine to medium grained, light grey and light brown, with iron indurated bands and extremely weathered bands.	DW	M		MODERATE RESISTANCE WITH LOW BANDS
						6			END OF BOREHOLE AT 6.0m				
						7							

ITEM 1 (continued) **ATTACHMENT 2**

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 4 1/1

Client: RYDE COUNCIL
Project: PROPOSED LIGHT POLES
Location: TUCKWELL PARK, MACQUARIE PARK, NSW

Job No. 31651L **Method:** SPIRAL AUGER JK350 **R.L. Surface:** N/A
Date: 16-7-18 **Datum:**
Logged/Checked by: B.Z./M.S.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPL -ETION						0		CH	Silty CLAY: high plasticity, light brown and red brown.	w<PL	Hd		GRASS COVER RESIDUAL
					N <19 13,6/50mm				as above, but with fine to medium grained, sub angular ironstone gravel.			>600 >600	
						1		-	SANDSTONE: light grey and orange brown, with extremely weathered bands and iron indurated bands.	DW	L		HAWKESBURY SANDSTONE LOW 'TC' BIT RESISTANCE
						2			as above, but with high strength bands.		M		MODERATE RESISTANCE MODERATE TO HIGH RESISTANCE
						3			as above, but interbedded with dark grey, very low strength SILTSTONE and extremely weathered bands and iron indurated bands.		L-M		LOW RESISTANCE WITH MODERATE BANDS
						4			SANDSTONE: fine to medium grained, light grey, trace extremely weathered bands, and iron indurated bands.	MW	M-H		HIGH RESISTANCE
						5			END OF BOREHOLE AT 4.8m				'TC' BIT REFUSAL
						6							
						7							

ITEM 1 (continued) **ATTACHMENT 2**

ITEM 1 (continued) **ATTACHMENT 2**

ITEM 1 (continued) **ATTACHMENT 2**

JK Geotechnics

REPORT EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the geotechnical report in regard to classification methods, field procedures and certain matters relating to the Comments and Recommendations section. Not all notes are necessarily relevant to all reports.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Geotechnical engineering involves gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geotechnical practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) is referred to as 'laminite'.

SAMPLING

Sampling is carried out during drilling or from other excavations to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on plasticity, grain size, colour, moisture content, minor constituents and, depending upon the degree of disturbance, some information on strength and structure. Bulk samples are similar but of greater volume required for some test procedures.

Undisturbed samples are taken by pushing a thin-walled sample tube, usually 50mm diameter (known as a U50), into the soil and withdrawing it with a sample of the soil contained in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shrink-swell behaviour, strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Details of the type and method of sampling used are given on the attached logs.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as
  N = 13
  4, 6, 7
- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as
  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as 'N_c' on the borehole logs, together with the number of blows per 150mm penetration.

Cone Penetrometer Testing (CPT) and Interpretation: The cone penetrometer is sometimes referred to as a Dutch Cone. The test is described in Australian Standard 1289.6.5.1–1999 (R2013) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Static Cone Penetration Resistance of a Soil – Field Test using a Mechanical and Electrical Cone or Friction-Cone Penetrometer'*.

In the tests, a 35mm or 44mm diameter rod with a conical tip is pushed continuously into the soil, the reaction being provided by a specially designed truck or rig which is fitted with a hydraulic ram system. Measurements are made of the end bearing resistance on the cone and the frictional resistance on a separate 134mm or 165mm long sleeve, immediately behind the cone. Transducers in the tip of the assembly are electrically connected by wires passing through the centre of the push rods to an amplifier and recorder unit mounted on the control truck. The CPT does not provide soil sample recovery.

As penetration occurs (at a rate of approximately 20mm per second), the information is output as incremental digital records every 10mm. The results given in this report have been plotted from the digital data.

The information provided on the charts comprise:

- Cone resistance – the actual end bearing force divided by the cross sectional area of the cone – expressed in MPa. There are two scales presented for the cone resistance. The lower scale has a range of 0 to 5MPa and the main scale has a range of 0 to 50MPa. For cone resistance values less than 5MPa, the plot will appear on both scales.
- Sleeve friction – the frictional force on the sleeve divided by the surface area – expressed in kPa.
- Friction ratio – the ratio of sleeve friction to cone resistance, expressed as a percentage.

  The ratios of the sleeve resistance to cone resistance will vary with the type of soil encountered, with higher relative friction in clays than in sands. Friction ratios of 1% to 2% are commonly encountered in sands and occasionally very soft clays, rising to 4% to 10% in stiff clays and peats. Soil descriptions based on cone resistance and friction ratios are only inferred and must not be considered as exact.

Correlations between CPT and SPT values can be developed for both sands and clays but may be site specific.

Interpretation of CPT values can be made to empirically derive modulus or compressibility values to allow calculation of foundation settlements.

Stratification can be inferred from the cone and friction traces and from experience and information from nearby boreholes etc. Where shown, this information is presented for general guidance, but must be regarded as interpretive. The test method provides a continuous profile of engineering properties but, where precise information on soil classification is required, direct drilling and sampling may be preferable.

There are limitations when using the CPT in that it may not penetrate obstructions within any fill, thick layers of hard clay and very dense sand, gravel and weathered bedrock. Normally a 'dummy' cone is pushed through fill to protect the equipment. No information is recorded by the 'dummy' probe.

Flat Dilatometer Test: The flat dilatometer (DMT), also known as the Marchetti Dilometer comprises a stainless steel blade having a flat, circular steel membrane mounted flush on one side.

The blade is connected to a control unit at ground surface by a pneumatic-electrical tube running through the insertion rods. A gas tank, connected to the control unit by a pneumatic cable, supplies the gas pressure required to expand the membrane. The control unit is equipped with a pressure regulator, pressure gauges, an audio-visual signal and vent valves.

The blade is advanced into the ground using our CPT rig or one of our drilling rigs, and can be driven into the ground using an SPT hammer. As soon as the blade is in place, the membrane is inflated, and the pressure required to lift the membrane (approximately 0.1mm) is recorded. The pressure then required to lift the centre of the membrane by an additional 1mm is recorded. The membrane is then deflated before pushing to the next depth increment, usually 200mm down. The pressure readings are corrected for membrane stiffness.

The DMT is used to measure material index (I_D), horizontal stress index (K_D), and dilatometer modulus (E_D). Using established correlations, the DMT results can also be used to assess the 'at rest' earth pressure coefficient (K_o), over-consolidation ratio (OCR), undrained shear strength (C_u), friction angle (ϕ), coefficient of consolidation (C_h), coefficient of permeability (K_h), unit weight (γ), and vertical drained constrained modulus (M).

The seismic dilatometer (SDMT) is the combination of the DMT with an add-on seismic module for the measurement of shear wave velocity (V_s). Using established correlations, the SDMT results can also be used to assess the small strain modulus (G_o).

Portable Dynamic Cone Penetrometers: Portable Dynamic Cone Penetrometer (DCP) tests are carried out by driving a 16mm diameter rod with a 20mm diameter cone end with a 9kg hammer dropping 510mm. The test is described in Australian Standard 1289.6.3.2–1997 (R2013) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – 9kg Dynamic Cone Penetrometer Test'*.

The results are used to assess the relative compaction of fill, the relative density of granular soils, and the strength of cohesive soils. Using established correlations, the DCP test results can also be used to assess California Bearing Ratio (CBR).

Refusal of the DCP can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Vane Shear Test: The vane shear test is used to measure the undrained shear strength (C_u) of typically very soft to firm fine grained cohesive soils. The vane shear is normally performed in the bottom of a borehole, but can be completed from surface level, the bottom and sides of test pits, and on recovered undisturbed tube samples (when using a hand vane).

The vane comprises four rectangular blades arranged in the form of a cross on the end of a thin rod, which is coupled to the bottom of a drill rod string when used in a borehole. The size of the vane is dependent on the strength of the fine grained cohesive soils; that is, larger vanes are normally used for very low strength soils. For borehole testing, the size of the vane can be limited by the size of the casing that is used.

For testing inside a borehole, a device is used at the top of the casing, which suspends the vane and rods so that they do not sink under self-weight into the 'soft' soils beyond the depth at which the test is to be carried out. A calibrated torque head is used to rotate the rods and vane and to measure the resistance of the vane to rotation.

With the vane in position, torque is applied to cause rotation of the vane at a constant rate. A rate of 6° per minute is the common rotation rate. Rotation is continued until the soil is sheared and the maximum torque has been recorded. This value is then used to calculate the undrained shear strength. The vane is then rotated rapidly a number of times and the operation repeated until a constant torque reading is obtained. This torque value is used to calculate the remoulded shear strength. Where appropriate, friction on the vane rods is measured and taken into account in the shear strength calculation.

LOGS

The borehole or test pit logs presented herein are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction.
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density, strength and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse engineering characteristics or behaviour. If the volume and quality of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing is normally carried out in accordance with Australian Standard 1289 *'Methods of Testing Soils for Engineering Purposes'* or appropriate NSW Government Roads & Maritime Services (RMS) test methods. Details of the test procedure used are given on the individual report forms.

ENGINEERING REPORTS

Engineering reports are prepared by qualified personnel and are based on the information obtained and on current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal (eg. a three storey building) the information and interpretation may not be relevant if the design proposal is changed (eg. to a twenty storey building). If this happens, the Company will be pleased to review the report and the sufficiency of the investigation work.

ITEM 1 (continued) **ATTACHMENT 2**

Reasonable care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical aspects and recommendations or suggestions for design and construction. However, the Company cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions – the potential for this will be partially dependent on borehole spacing and sampling frequency as well as investigation technique.
- Changes in policy or interpretation of policy by statutory authorities.
- The actions of persons or contractors responding to commercial pressures.
- Details of the development that the Company could not reasonably be expected to anticipate.

If these occur, the Company will be pleased to assist with investigation or advice to resolve any problems occurring.

SITE ANOMALIES

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, the Company requests that it immediately be notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

REPRODUCTION OF INFORMATION FOR CONTRACTUAL PURPOSES

Where information obtained from this investigation is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. The Company would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Copyright in all documents (such as drawings, borehole or test pit logs, reports and specifications) provided by the Company shall remain the property of Jeffery and Katauskas Pty Ltd. Subject to the payment of all fees due, the Client alone shall have a licence to use the documents provided for the sole purpose of completing the project to which they relate. Licence to use the documents may be revoked without notice if the Client is in breach of any obligation to make a payment to us.

REVIEW OF DESIGN

Where major civil or structural developments are proposed or where only a limited investigation has been completed or where the geotechnical conditions/constraints are quite complex, it is prudent to have a joint design review which involves an experienced geotechnical engineer/engineering geologist.

SITE INSPECTION

The Company will always be pleased to provide engineering inspection services for geotechnical aspects of work to which this report is related.

Requirements could range from:

i) a site visit to confirm that conditions exposed are no worse than those interpreted, to

ii) a visit to assist the contractor or other site personnel in identifying various soil/rock types and appropriate footing or pile founding depths, or

iii) full time engineering presence on site.

ITEM 1 (continued) **ATTACHMENT 2**

SYMBOL LEGENDS

SOIL

- FILL
- TOPSOIL
- CLAY (CL, CI, CH)
- SILT (ML, MH)
- SAND (SP, SW)
- GRAVEL (GP, GW)
- SANDY CLAY (CL, CI, CH)
- SILTY CLAY (CL, CI, CH)
- CLAYEY SAND (SC)
- SILTY SAND (SM)
- GRAVELLY CLAY (CL, CI, CH)
- CLAYEY GRAVEL (GC)
- SANDY SILT (ML, MH)
- PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK

- CONGLOMERATE
- SANDSTONE
- SHALE/MUDSTONE
- SILTSTONE
- CLAYSTONE
- COAL
- LAMINITE
- LIMESTONE
- PHYLLITE, SCHIST
- TUFF
- GRANITE, GABBRO
- DOLERITE, DIORITE
- BASALT, ANDESITE
- QUARTZITE

OTHER MATERIALS

- BRICKS OR PAVERS
- CONCRETE
- ASPHALTIC CONCRETE

Jeffery & Katauskas Pty Ltd, trading as JK Geotechnics

April 2018

ITEM 1 (continued) **ATTACHMENT 2**

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_U > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_U > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
Fine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_u = \frac{D_{60}}{D_{10}} \quad \text{and} \quad C_c = \frac{(D_{30})^2}{D_{10}\, D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash, for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour

April 2016

Jeffery & Katauskas Pty Ltd, trading as JK Geotechnics

ITEM 1 (continued) **ATTACHMENT 2**

LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record	▼	Standing water level. Time delay following completion of drilling/excavation may be shown.
	C	Extent of borehole/test pit collapse shortly after drilling/excavation.
	▶	Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25	Vane shear reading in kPa of undrained shear strength.
	PID = 100	Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	w > PL	Moisture content estimated to be greater than plastic limit.
	$w \approx$ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	$w \approx$ LL	Moisture content estimated to be near liquid limit.
	w > LL	Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	( )	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL	VERY LOOSE – Density Index (I_D) Range (%) ≤ 15; SPT 'N' Value Range (Blows/300mm) 0 – 4
	L	LOOSE – > 15 and ≤ 35; 4 – 10
	MD	MEDIUM DENSE – > 35 and ≤ 65; 10 – 30
	D	DENSE – > 65 and ≤ 85; 30 – 50
	VD	VERY DENSE – > 85; > 50
	( )	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.

ITEM 1 (continued) **ATTACHMENT 2**

Log Symbols continued

Log Column	Symbol	Definition
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as:
		RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock.
		EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock.
		ALLUVIAL – soil deposited by creeks and rivers.
		ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents.
		MARINE – soil deposited in a marine environment.
		AEOLIAN – soil carried and deposited by wind.
		COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits.
		LITTORAL – beach deposited soil.

Log Symbols continued

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

ITEM 1 (continued) **ATTACHMENT 2**

Log Symbols continued

Abbreviations Used in Defect Description

Cored Borehole Log Column		Symbol Abbreviation	Description
Point Load Strength Index		• 0.6	Axial point load strength index test result (MPa)
		x 0.6	Diametral point load strength index test result (MPa)
Defect Details	– Type	Be	Parting – bedding or cleavage
		CS	Clay seam
		Cr	Crushed/sheared seam or zone
		J	Joint
		Jh	Healed joint
		Ji	Incipient joint
		XWS	Extremely weathered seam
	– Orientation	Degrees	Defect orientation is measured relative to normal to the core axis (ie. relative to the horizontal for a vertical borehole)
	– Shape	P	Planar
		C	Curved
		Un	Undulating
		St	Stepped
		Ir	Irregular
	– Roughness	Vr	Very rough
		R	Rough
		S	Smooth
		Po	Polished
		Sl	Slickensided
	– Infill Material	Ca	Calcite
		Cb	Carbonaceous
		Clay	Clay
		Fe	Iron
		Qz	Quartz
		Py	Pyrite
	– Coatings	Cn	Clean
		Sn	Stained – no visible coating, surface is discoloured
		Vn	Veneer – visible, too thin to measure, may be patchy
		Ct	Coating ≤ 1mm thick
		Filled	Coating > 1mm thick
	– Thickness	mm.t	Defect thickness measured in millimetres

2 31 COBHAM AVENUE, MELROSE PARK - CHANGE OF USE OF A GROUND FLOOR HOME BUSINESS PREMISES TO A BUSINESS PREMISES TO ACCOMODATE A TATTOO PARLOUR - LDA2019/0078

Report prepared by: Manager - Development Assessment
Report approved by: Director - City Planning and Environment
Report dated: 25/06/2019 **File Number:** GRP/09/6/12/1/2 - BP19/730

City of Ryde
Local Planning Panel Report

DA Number	**LDA2019/78**
Site Address & Ward	**31 Cobham Avenue, Melrose Park – West Ward**
Zoning	**B1 – Neighbourhood Centre**
Proposal	**Change of use of a ground floor Home Business premises to a Business Premises to accommodate a tattoo parlour.**
Property Owner	**KAT Australia Pty Ltd**
Applicant	**Peter Kim**
Report Author	**Sandra Bailey– Manager Development Assessment**
Lodgement Date	**4 March 2019**
No. of Submissions	**Fifty-five (55) submissions (49 in opposition)**
Cost of Works	**$0**
Reason for Referral to LPP	**Contentious development** – is the subject of 10 or more unique submissions by way of objection.

ITEM 2 (continued)

Recommendation	**Refusal**
Attachments	**Attachment 1:** NSW Police referral **Attachment 2:** Plans submitted with the development application.

1. Executive Summary

The following report is an assessment of a development application for the proposed change of use of a ground floor Home Business premises to a Business Premises to accommodate a tattoo parlour on land at 31 Cobham Avenue, Melrose Park.

The submitted proposal was amended, following Council correspondence advising the proposal to include a home business at the first floor level in association with the commercial use at ground floor was not a permissible form of development.

The amended proposal seeks consent for the change of use to a tattoo parlour at the ground floor commercial unit and provides for two (2) beds for tattooing.

The applications was notified and in response a total of fifty-five (55) submissions were received. The submissions overwhelmingly where in opposition to the proposed development raising concerns with the site suitability, impacts upon the neighbourhood character, carparking and safety.

The development application was referred to the NSW Police Force who raised no objection to the development subject to appropriate conditions of consent.

The proposed use, albeit defined as a commercial business and permissible within the B1 Neighbourhood Centre, it is a use which is contrary to the zone objectives in that it is a business that does not serve the needs of the people who live or are within the surrounding neighbourhood. The proposed use has a specific clientele and it is a business which does not serve the needs of the surrounding neighbourhood as demonstrated in the number of submissions received objecting to the nature of the development. Additionally, the proposed use does not provide employment opportunities in an accessible location. The employment opportunities are specific to the use, which due to the *Tattoo Parlours Act* 2012, require all tattoo artists to be licensed and this restricts employment to those persons specifically associated with the business use. The intent of the Neighbourhood Centre zoning is to provide for small scale business providing for daily needs such a corner store, hairdressers, news agency or retail premises such as butchers. These uses provide a direct and ongoing service to the community and not a specified group of clientele.

The proposed use is considered to be contrary to the public interest. The development application is recommended for refusal.

ITEM 2 (continued)

2. The Site and Locality

The site is legally described as Lot 162 within DP 15965 and is known as 31 Cobham Avenue, Melrose Park. The site is located on the south-western corner of Cobham Avenue and Andrew Street (**Figure 1**). The site is irregular in shape with an area of approximately 175.5m². The site has a splayed corner of 4.3 metres and a secondary frontage of 24.3 metres to Andrew Street. The site has a rear, partially splayed boundary to Andrew Lane.

Figure 1 Aerial photograph of site

The site currently consists of a two storey mixed commercial and residential building (**Figure 2 and 3**). The building comprises a commercial office at ground level, including storage and commercial WC. A residential dwelling also exists at ground and first floor levels. The ground floor contains a kitchen, powder room, laundry, combined living and dining room. The first floor contains 2 bedrooms, bathroom and family room with front facing balcony situated over the commercial space. The site has vehicular access from Andrew Lane to a double garage (with storage). There is an existing courtyard between the mixed use building and the garage that provides access to the dwelling above.

ITEM 2 (continued)

Figure 2 Subject site as viewed from south-western corner with Andrew Street

Figure 3 Southern elevation of site as viewed from Andrew Street

Adjoining properties and locality

The site is located within a low density residential setting, mainly consisting of single and two storey dwellings zoned R2 Low Density Residential (**Figure 4**). The site is adjoined to the north by commercial buildings both single and two storeys in scale

ITEM 2 (continued)
between 31 – 39A Cobham Avenue(**Figure 5**). The site is adjoined to the west by Andrew Lane which provides vehicular access to the commercial properties presenting to Cobham Avenue.

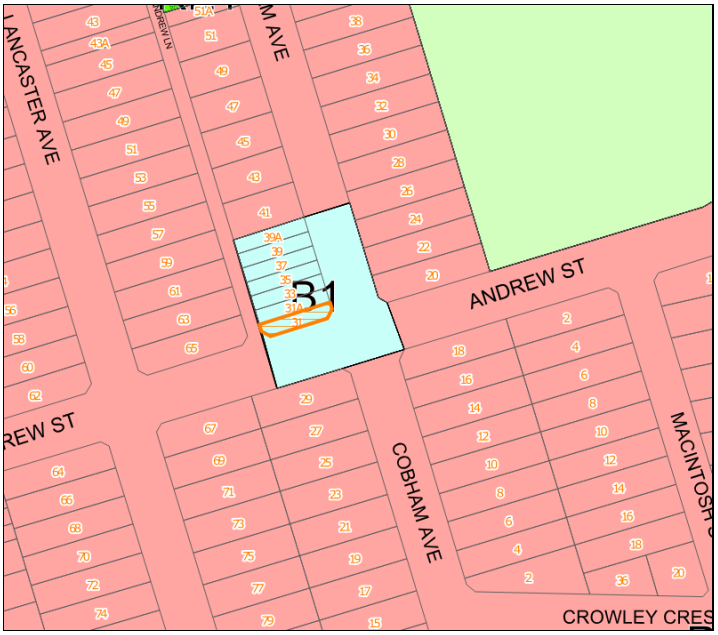


Figure 4 Zoning of surrounding properties


Figure 5 Adjoining commercial properties to the north 33 - 39 Cobham Avenue

3. The Proposal

The proposal is for the change of use of a ground floor Home Business premises to a Business Premises to accommodate a tattoo parlour on the subject site. The originally submitted plans proposed the following works:

ITEM 2 (continued)

- Change of use of the commercial ground floor unit to a business premises for the purpose of a tattoo parlour.
- Proposed hours of operation 9:00am to 6:00pm Monday to Friday and 9:00am to 4:00pm Saturday and Sunday.
- Provision of 4 staff members.
- Increase the size of the commercial unit for use as tattoo parlour to be 37.1m² in area.
- Deletion of approved kitchen within the commercial unit.
- Part conversion of first floor to accommodate two tattoos beds and bathroom and use as a home business.
- Deletion of the door from the commercial WC that leads to the residential laundry.

Amended plans 9 April 2019

- Change of use of the commercial ground floor unit to a business premises for the purpose of a tattoo parlour.
- Provision of two tattoo beds.
- Commercial floor area of 29.6m².
- Deletion of the door from the commercial WC that leads to the residential laundry.

The amended proposal no longer seeks consent for a home business at first floor and does not seek to undertake works at the first floor level of the building. The amended development still proposes 4 staff and the hours of operation between 9.00am to 6.00pm Monday to Friday and 9.00am to 4.00pm Saturday to Sunday. Figure 6 demonstrates the proposed layout of the use.

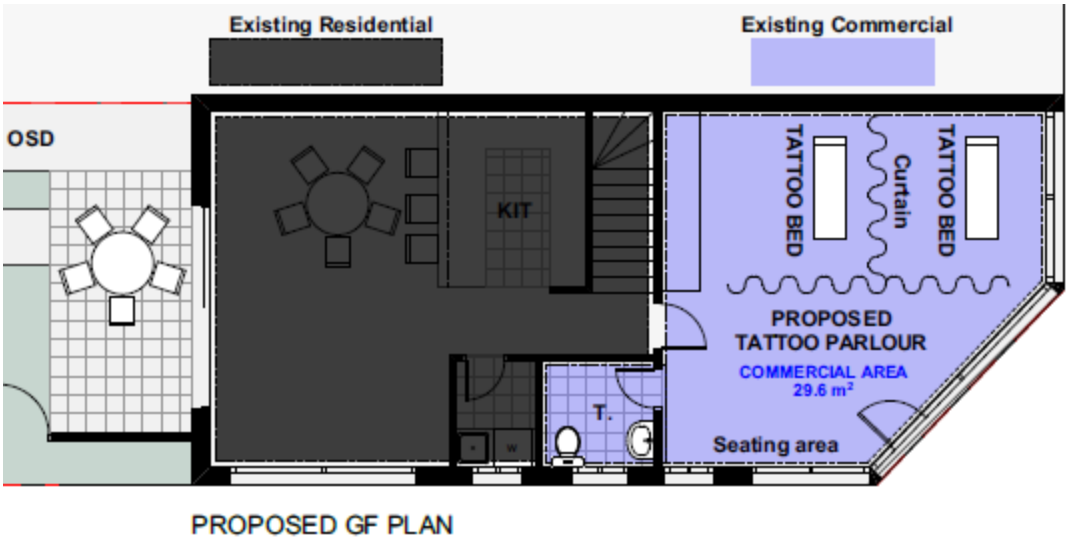


Figure 6 Amended plan of the development. The tattoo parlour is restricted to the ground floor commercial area only.

ITEM 2 (continued)
Whereas the original plans proposed to use the ground floor commercial office area as well as the residential unit, the amended plans are restricted to the ground floor commercial office space only.

4. Background

Development History

10 August 2007	Local Development Application LDA2007/5 for two storey mixed commercial residential development: 2 commercial units on ground floor, 2 x 2 bedroom residential units on first floor was refused.
30 April 2008	Land and Environment proceedings 11280 of 2007 approved a 2 storey mixed commercial and residential development on land at 31 – 31A Cobham Avenue. The approved building is shown in **Figures 7 and 8**.

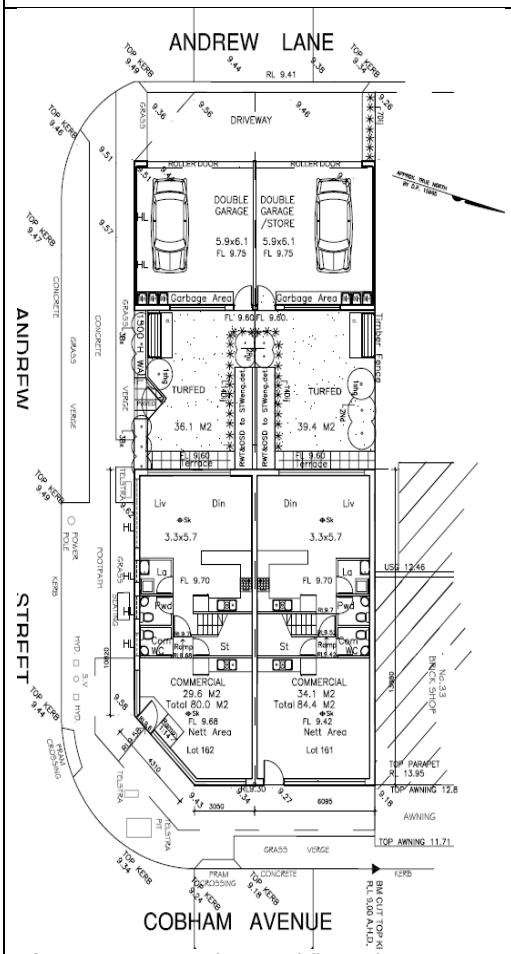


Figure 7 Approved ground floor plan

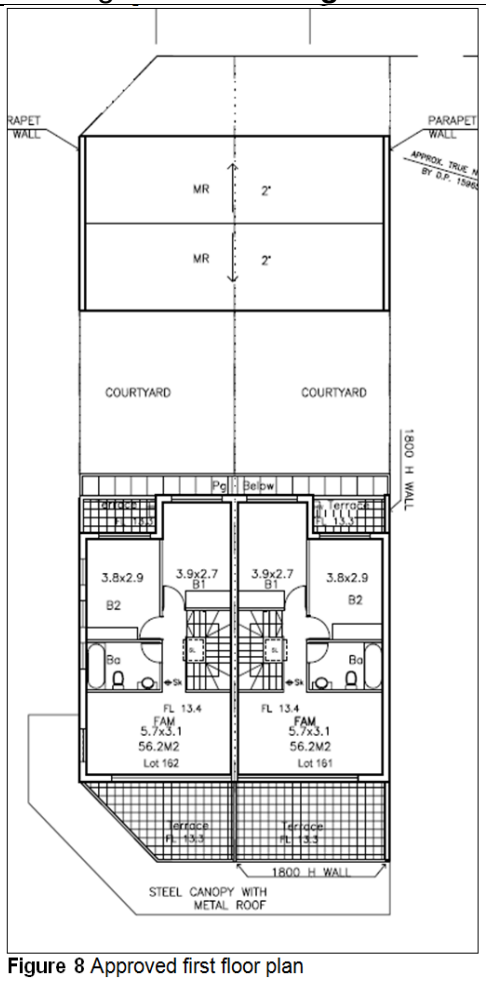


Figure 8 Approved first floor plan

ITEM 2 (continued)

Application History

4 March 2019	Development Application lodged.
8 March – 24 March 2019	The Development Application was notified to adjoining property owners. Fifty-five (55) submissions were received. Of these submissions, 49 objected to the development.
2 April 2019	Council wrote to the Applicant and advised of fundamental concerns with the proposed development and recommended the application be withdrawn. The issues raised include: The proposal seeks to undertake a change of use to a *business premise* then also seeks consent for a *home business.* It is unclear as to how the proposal can be deemed a *home business* where the 'use' relies on the *business premises* where by the *home business* is not *carried on in a dwelling, or in a building ancillary to the dwelling*. In this regard, the commercial tenancy is not ancillary. It functions in its own right as a commercial premise. There are fundamental concerns held regarding the permissibility of the proposal. The application has not satisfactorily considered the characterisation of the development for the purpose of demonstrating its permissibility in accordance with the Ryde LEP 2014.
9 April 2019	The Applicant submitted amended plans and updated Statement of Environmental Effects. These plans restricted the tattoo parlour to the ground floor commercial floor space. The amended development was not required to be readvertised.

STATUTORY PROVISIONS

Tattoo Parlours Act 2012 and Tattoo Parlours Regulation 2013

ITEM 2 (continued)

The *Tattoo Parlours Act* 2012 requires body art tattooing businesses to be licensed and without a license, body art tattooing businesses may not operate. Employed body art tattooists also need to be licensed with NSW Fair Trading. As part of the licensing requirements, it is necessary to consent to a National Police Check and provide a declaration about all close associates. Appropriate conditions of consent will be imposed to ensure compliance with the above Act and Regulation.

The proposed development was referred to the NSW Police Force who raised no objection to the development subject to appropriate conditions of consent. These conditions included the need for CCTV, adequate lighting, signage, access control and a condition to ensure that the hours are restricted to the proposed hours to ensure that the development does not impact on the residential amenity.

5. Planning Assessment

5.1 Ryde Local Environmental Plan 2014

Ryde Local Environmental Plan 2014 (RLEP 2014):

Clause 2.3 Zone Objectives and Land Use Table

The subject site is identified as being within the B1 Neighbourhood Centre zone under the provisions of RLEP 2014. The proposal is for change of use to the ground floor commercial unit to a tattoo parlour. A tattoo parlour is defined in the RLEP as a business premise. Business premises are a permissible land use within the B1 Neighbhourhood Centre and is defined as follows:

> ***business premises*** *means a building or place at or on which:*
>
> *(a) an occupation, profession or trade (other than an industry) is carried on for the provision of services directly to members of the public on a regular basis, or*
>
> *(b) a service is provided directly to members of the public on a regular basis,*
>
> *and includes a funeral home and, without limitation, premises such as banks, post offices, hairdressers, dry cleaners, travel agencies, internet access facilities, betting agencies and the like, but does not include an entertainment facility, home business, home occupation, home occupation (sex services), medical centre, restricted premises, sex services premises or veterinary hospital.*

A restricted premises is defined as follows:

ITEM 2 (continued)

restricted premises *means premises that, due to their nature, restrict access to patrons or customers over 18 years of age, and includes sex shops and similar premises, but does not include a pub, hotel or motel accommodation, home occupation (sex services) or sex services premises.*

A tattoo parlour is not a restricted premises as it is legally permissible for a person under 18 years of age to enter a tattoo parlour as well as get a tattoo.

The proposed use satisfies the definition of business premises.

Pursuant to Clause 2.3(2) of RLEP 2014, the consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone. The objectives of the B1 Neighbourhood Centre Zone are as follows:

- *To provide a range of small-scale retail, business and community uses that serve the needs of people who live or with in the surrounding neighbourhood.*
- *To encourage employment opportunities in accessible locations.*

The proposed use, albeit defined as a business premise and permissible within the B1 Neighbourhood Centre Zone, is a use which is contrary to the zone objectives in that it is a business that does not serve the needs of the people who live or are within the surrounding neighbourhood. The proposed use has a specific clientele and it is a business which does not serve the needs of the surrounding neighbourhood on the basis of the number of submissions received advising it does not serve a purpose in the community of Melrose Park.

The proposed use does not provide employment opportunities in an accessible location. The employment opportunities are specific to the use, which due to the *Tattoo Parlours Act* 2012, require all tattoo artists to be licensed and this restricts employment to those persons specifically associated with the business use.

The intent of the Neighbourhood Centre zoning is to provide for a range of small scale retail, business and community uses that serve the needs of people who live or work in the surrounding neighbourhood. Such uses would be more aligned with a corner store, hairdressers, newsagency, chemist or retail premises such as butchers and bakery. These uses provide a direct and ongoing service to the community and not a specified group of clientele as is associated with the proposed use.

As the development fails to satisfy the objectives of the zone, the application is recommended for refusal.

Part 4 Principal development standards

Clause 4.3 Height of buildings

ITEM 2 (continued)
The site is subject to a maximum height of 9.5 metres. The proposal does not seek to alter the height of the existing building.

Clause 4.4 Floor space ratio

The site is subject to a maximum FSR of 0.8:1. The proposal does not alter the existing floor space of the building and is acceptable.

5.2 Draft Environmental Planning Instruments

Draft Remediation of Land State Environmental Planning Policy

The Draft SEPP is a relevant matter for consideration as it is an Environmental Planning Instrument that has been placed on exhibition. The explanation of Intended Effects accompanying the draft SEPP advises:

As part of the review of SEPP 55, preliminary stakeholder consultation was undertaken with Councils and industry. A key finding of this preliminary consultation was that although the provisions of SEPP 55 are generally effective, greater clarity is required on the circumstances when development consent is required for remediation work.

The draft SEPP does not seek to change the requirement for consent authorities to consider land contamination in the assessment of development applications. The subject site has been historically used for residential purposes. As such, it is unlikely to contain any contamination and further investigation is not warranted in this case.

Draft Environment SEPP

The draft Environment SEPP was exhibited from 31 October 2017 to 31 January 2018. The consolidated SEPP proposes to simplify the planning rules for a number of water catchments, waterways and urban bushland areas. Changes proposed include consolidating a number of SEPPs, which include:

- State Environmental Planning Policy No. 19 – Bushland in Urban Areas
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The proposal is not inconsistent with the provisions of the draft SEPP.

5.3 Development Control Plans

Part 7.2 Waste Minimisation and Management

ITEM 2 (continued)

The revised Statement of Environmental Effects states *Any sharp or clinical waste will be placed in containers in accordance with AS4261:1994 and AS4031:1992 and disposed of in accordance with the EPA (Protection of the Environment Operations (Waste) Regulation 1996.* The proposed development was considered by Council's Environmental Health Officer, who if the proposed use was considered acceptable could include conditions of consent in relation to the safe operation of the use and waste management.

Part 9.1 Signage

The proposal does not seek consent for any signage.

Part 9.2 Access for People with Disabilities

The existing building enables accessible access to the premises and is consistent with the control requirements.

Part 9.3 Parking Controls

The existing building has a double garage accessed from Andrew Lane which is intended to service the dwelling and the commercial floor space. As the development involves the establishment of a business premise within the commercial floor space. Council cannot require the provision of any additional car parking.

The tattoo parlour however, will employ 4 staff. It is considered that the two space garage will not provide sufficient on site parking for workers or clientele. This development will result in the use of additional on street parking. This demand for parking also demonstrates that the use is not an appropriate use within a B1 Neighbourhood Centre. Such a use is more appropriate in a town centre or light industrial zoning.

ITEM 2 (continued)

Figure 9. Cobham Avenue showing the commercial premise on the left hand side and the surrounding residential neighbourhood. There is restricted parking in front of the premises.

Figure 10. Andrew Street adjacent to the site. The photo demonstrates the garaging that adjoins Andrew Lane. There is no parking immediately adjacent to the site.

5.4 Section 7.11 Development Contributions Plan 2007 (Amendment 2010)

Council's current Section 7.11 Development Contributions Plan 2007 (Interim Update (2014) effective 10 December 2014 requires a contribution for the provision of various additional services required. The development would not result in the need for any monetary contribution.

5.5 Any matters prescribed by the regulations

The Regulation underpins the day-to-day operation of the NSW planning system. The Regulation guides the processes, plans, public consultation, impact assessment and decisions made by local councils, the Department of Planning and others. The

ITEM 2 (continued)
proposal is recommended for refusal and no further assessment in regards to the Regulations is necessary.

6. The likely impacts of the development

The proposed development is considered to adversely impact upon the surrounding neighbourhood as it will have an unacceptable impact on the character of the local community for reasons outlined throughout this report.

7. Suitability of the site for the development

The proposed change of use to a tattoo parlour is not considered to be suitable for the B1 Neighbourhood Centre zoning. Although the use falls within the broad scale definition of a business premises, the use will not satisfy the zone objectives and is not suitable for the Melrose Park neighbourhood.

8. The Public Interest

The proposed development is not considered to be in the public interest as the site is not suitable for the establishment of a tattoo parlour. The proposal will have an adverse impact upon the neighbourhood character of Melrose Park and provides for use which does not meet the needs of the local community. The proposal is contrary to the public interest as evident from the significant number of resident submissions who objected to the application.

9. Submissions

In accordance with DCP 2014 Part 2.1 Notice of Development Applications, the proposal was notified to adjoining property owners between 8 March – 24 March 2019. In response, fifty-five (49) submissions opposing the development were received and six (6) in support of the proposed development.

The concerns raised in the submissions are summarised and addressed below.

- ***West Ryde already has a tattoo parlour there is no need for another one in Melrose Park.***

Comment: The commercial viability of a business is not a relevant consideration of the *Environmental Planning and Assessment Act* 1979.

- ***Tattoo parlour is not in character with the area and the use is not suitable for a residential area.***

ITEM 2 (continued)

Comment: Concern is held regarding the suitability of the site for use as a tattoo parlour and this forms part of the recommendation for refusal.

- **I have the following questions for the submission:**

  1 What are the hours of operation? and how does that fit with a residential area?
  2 Where is the proposed parking going to be allocated for clients?
  3 What will the signage/frontage of the parlour look like?
  4 Will you be able to see directly in into the shop front?
  5 Will the clients be able to look directly into our residence across the road?
  6 Are noise restrictions /rules different for a business in a residential area?
  7 How many clients does the business expect each day?

Comment:

1. The proposed hours are 9:00am to 6:00pm Monday to Friday and 9:00am to 4:00pm Saturday and Sundays.
2. There is no proposed parking. The proposal relies upon the existing parking arrangement.
3. There is no proposed signage as part of the development application.
4. The proposal does not seek to alter the façade of the building.
5. The change in use will not alter the existing arrangement in relation to the dwelling across the road.
6. Any use would be subject to noise requirements to ensure the amenity of neighbouring residential properties is maintained.
7. The proposal seeks consent for 2 tattoo beds. There is no nominated number of clients as it is job specific which may include 2 clients per day, dependant upon the size of the tattoo being undertaken.

- ***There is no car parking available. Cars will park in front of my house and for extended periods given that extensive tattoos can take many hours.***

Comment: The applicant has tried to reduce the impact of parking in the local streets by proposing to operate the business by appointments only. The site does not contain sufficient parking to accommodate workers or clientele. For this reason, the development will have an adverse impact on the existing on street parking.

- ***There was a fatal shooting at the tattoo parlour in West Ryde.***

Comment: This is not a matter for consideration under the *Environmental Planning and Assessment Act* 1979.

ITEM 2 (continued)

- ***The approval of a tattoo parlour will increase noise levels and attract persons of bad character.***

Comment: The proposed land use is not considered to generate any adverse noise impacts due to the nature of the business. The proposal if it were to be supported, would be subject to conditional requirements to ensure the residential amenity in relation to noise levels was maintained.

There is no evidence to suggest the proposed business will attract persons of bad character.

- ***The proposal will devalue my property and may impact securing future tenants.***

Comment: There is no evidence to suggest the proposed business will devalue surrounding properties or impact on rental opportunities of surrounding properties.

- ***The impact upon children who walk past the shop to go to local schools.***

Comment: The proposed use is restricted to within the commercial unit. However, the community concern regarding children regularly passing the prominent corner location and the use is a matter for public interest in which the development is contrary to.

- ***The proposed use would have significant adverse impact on neighbourhood amenity and drastically lower the tone of the neighbourhood.***

Comment: The proposed use is considered to be contrary to the public interest.

- ***The use is not appropriate for a low density residential zoning***

Comment: The site is zoned B1 Neighbourhood Centre and does not have residential zoning. The proposed use is a permissible form of development. Despite this, the use will not satisfy the zone objectives as the use will not serve the needs of people who live or are within the surrounding neighbourhood.

- ***There is no dedicated car parking and will impact street parking which is already limited due to the bus zone and zebra crossing.***

Comment: The development will rely on the existing car parking arrangement. Given that 4 staff will be involved with the premises plus clientele, the existing car parking will not be adequate to accommodate the use. The development will put additional demand upon the on-street parking. The use is not considered appropriate in the B1 neighbourhood centre zoning.

ITEM 2 (continued)

- ***It is well known tattoo parlours draw gangs and bikies.***

Comment: These concerns have been significantly addressed through the enactment of the *Tattoo Parlours Act* 2012. The Act now requires tattoo parlours to be licensed and without a license, body art tattooing businesses may not operate. Additionally, employed tattooists are required to be licensed. The licenses are issued by NSW Fair Trading after a National Police Check that includes a declaration about all close associates.

- ***Concern about the operating hours.***

Comment: The proposed hours of operation are Monday-Friday 9:00am to 6:00pm and Saturday and Sunday 9:00am to 4:00pm. The proposed hours are not considered to adversely impact upon the amenity of surrounding residential properties.

Submissions received in support of the proposed development

- ***Tattoos are not associated with drugs or criminal activity and the opening of this parlour will not put your kids at risk or ruin your family orientated neighbourhood.***
- ***This is not a quiet residential street.***
- ***Most people who get tattoos take public transport and the use will not result in an influx of parking issues.***
- ***You don't have to be part of a gang to own a business. Opening a tattoo parlour is no different to opening a corner shop.***
- ***It is funny that all these objections think tattoo shops have degenerates and criminals and drug dealers hanging out. Why not shut down the financial sector because of the widespread illegal drug use.***
- ***I would much prefer a tattoo parlour than a massage parlour. As long as the operators respect the local community and operate to the regulations I don't see why it would not work for the area.***

Comment: The above comments are noted.

10. Referrals

Senior Development Engineer:

Council's Senior Development Engineer has reviewed the proposal and has made the following comments:

"Vehicle Access and Parking

ITEM 2 (continued)

The proposal maintains the existing two (2) off-street parking spaces within the rear garage accessed from Andrew Lane, which was approved under the original development consent.

The proposal does not seek to increase the floor space of the building and therefore complies with Part 9.3 of Council's DCP requirements. However, the proposed change of use will necessitate a demand for parking and given the existing site arrangement with the car parking associated with the residential use, will impact upon on street parking. The use is more likely to be utilised by clientele outside of the immediate vicinity of the site and would require on street parking. It is likely, the original consent, due to the size of the commercial premises and zoning, anticipated a use more aligned with catering for local residents (such as a bakery, butcher etc) which would walk to the premises and not necessitate additional parking.

The proposed use seeks approval for the following:

- *Four (4) staff members,*
- *Maintain the residential use, and*
- *Provide two (2) tattoo beds.*

However, if consideration was given to the specific use of the premises as a tattoo parlour, the following rates would be more reasonably applied:

- *1 space per 2 employees,*
- *1 spaces for residential use, and*
- *1 space per tattoo bed (client).*

The proposed development would require four (4) off-street parking spaces to adequately accommodate the use. The development is deficient by two (2) off-street parking spaces and is unacceptable."

Environmental Health

Council's Environmental Health Officer has reviewed the proposal and has made the following comments:

"The proposed hours of operation for the tattoo parlour are:

Monday-Friday 9:00am to 6:00pm
Saturday and Sunday 9:00am to 4:00pm

The operation and fit out of the proposed tattoo parlour must meet all the requirements and standards of the Public Health (Skin Penetration) Regulation 2012."

Conditions are recommended to ensure compliance with the relevant standards should the application be approved..

ITEM 2 (continued)
External Referrals

NSW Police:

NSW Police have reviewed the proposal and have raised no objection to the proposed development subject to appropriate conditions of consent. (See Attachment 1).

11. Conclusion

After consideration of the proposed development against the relevant section of the Environmental Planning and Assessment Act 1979 and the relevant statutory and policy provisions, the proposal is considered unsuitable for the site and is not in the public interest. The application is recommended for refusal for the following reasons:

1. The development is contrary to the zone objectives of the B1 Neighbourhood Centre Zone as the development does not service the needs of the people who live within the surrounding neighbourhood.
2. The development is not in the public interest as evident from the significant number of residential submissions who objected to the application.

12. Recommendation

A. That Development Application LDA2019/78 for the Change of use of a ground floor Home Business premises to a Business Premises to accommodate a tattoo parlour on land at 31 Cobham Avenue, Melrose Parking be refused for the following reasons:

1. The proposed change of use to a Tattoo Parlour is not considered suitable for the site and is contrary to the public interest and is unacceptable pursuant to Section 4.15 (1)(c), (d) and (e) of the Environmental Planning and Assessment Act 1979.

Particulars:

(a) The site is zoned B1 Neighbourhood Centre. The proposed use is contrary to the objectives of the zone for the following reasons:
   i. The business does not service the needs of the people who live or are within the surrounding neighbourhood. The proposed use has a specific clientele which extends outside of the surrounding neighbourhood.
   ii. The proposed use does not provide employment opportunities in an accessible location. The employment opportunities are specific to the use, which due to the *Tattoo Parlours Act* 2012, require all tattoo artists

ITEM 2 (continued)

to be licensed and this restricts employment to those persons specifically associated with the business use.

iii. The intent of the Neighbourhood Centre zoning is to provide for a range of small scale retail, business and community uses that serve the needs of people who live or work in the surrounding neighbourhood. Such uses would be more aligned with a corner store, hairdressers, newsagency, chemist or retail premises such as butchers and bakery. These uses provide a direct and ongoing service to the community and not a specified group of clientele as is associated with the proposed use.

(b) The site is not suitable for the proposed development of a tattoo parlour pursuant to Section 4.15(1)(c) of the Environmental Planning and Assessment Act 1979. The use is not considered suitable in the Melrose Park neighbourhood.

(c) Council received forty-nine (49) submissions opposing the proposed development. The opposition was to site suitability, impact upon the neighbourhood character, lack of car parking and safety pursuant to Section 4.15(1)(d) of the Environmental Planning and Assessment Act 1979.

(d) The proposal is contrary to the public interest pursuant to Section 4.15(1)(e) of the Environmental Planning and Assessment Act 1979 as detailed in the reasoning for refusal.

B. That those persons who made a submission to be notified of the decision.

ATTACHMENTS

1 Comments from NSW Police
2 Plans - subject to copyright provision - CIRCULATED UNDER SEPARATE COVER

Report Prepared By:

Sandra Bailey
Manager - Development Assessment

Report Approved By:

Liz Coad
Director - City Planning and Environment

ITEM 2 (continued) **ATTACHMENT 1**

Unclassified
1

NSW POLICE FORCE

RYDE POLICE AREA COMMAND

Gladesville Police Station
8 Victoria Road,
Gladesville NSW 2111
Tel: (02) 9879 9699
Fax: (02) 9879 9611
5 June 2019

Attention Jason Chanphakeo,

Application No: Development Application No: LDA2019/78
Property: 31 Cobham Ave Melrose Park
Proposal: Change of use to a Tattoo Parlour

Ryde Police Area Command received the above-mentioned development application for the change of use and fit out for a Tattoo Parlour.

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City of Ryde
Records Management Services
12 JUN 2019
Doc No: .....
File No: .....

The Ryde Crime Prevention Officers have reviewed the application.

Police noted that the business hours for the Tattoo Parlour are:
Monday to Friday 9:00am to 6:00pm
Saturday and Sunday 9:00am to 4:00pm

Police recommend that these hours are strictly adhered to with no extended trading beyond these time frames due to the close proximity of the residential area.

In April 2001 the NSW Minister for Planning introduced Crime Prevention Guidelines to Section 79C of the Environmental Planning and Assessment Act, 1979. These guidelines require consent authorities to ensure that development provides safety and security to users and the community. 'If a development presents a crime risk, the guidelines can be used to justify modification of the development to minimize crime risk, or, refusal of the development on the grounds that crime risk cannot be appropriately minimised'.

The Guidelines contain two parts. 'Part A details the need for a formal crime risk assessment (Safer by Design Evaluation) to be done in conjunction with trained police, and Part B outlines basic Crime Prevention Through Environmental Design (CPTED) principles and strategies that can be used by consent authorities to justify the modification proposals to minimize risk'. (DUAP 2001:2).

Crime Prevention Through Environmental Design (CPTED)

Crime Prevention Through Environmental Design (CPTED) is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients from intersecting in time and space.

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Predatory offenders often make cost-benefit assessments of potential victims and locations before committing crime. CPTED aims to create the reality (or perception) that the costs of committing crime are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

- Maximize risk to offenders (increasing the likelihood of detection, challenge and apprehension).
- Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime)
- Minimise the actual and perceived benefits of crime (removing, minimizing or concealing crime attractors and rewards) and
- Minimise excuse making opportunities (removing conditions that encourage/facilitate rationalization of inappropriate behaviour)

CPTED employs four key strategies. These are surveillance, access control, territorial re-enforcement and space/activity management.

Surveillance

Natural surveillance is achieved when normal space users can see and be seen by others. This highlights the importance of building layout, orientation and location; the strategic use of design; landscaping and lighting. *Natural surveillance* is a by-product of well-planned, well-designed and well-used space. *Technical/mechanical Surveillance* is achieved through mechanical/electronic measures such as CCTV, help points and mirrored building panels. *Technical/mechanical surveillance* is commonly used as a 'patch' to supervise isolated, higher risk locations. *Formal (or Organised) Surveillance* is achieved through the tactical positioning of guardians. An example would be the use of on-site supervisors at higher risk locations.

General Comments:

It was noted that it did not state whether CCTV would be included throughout the development.

It is recommended that the premises install CCTV cameras as outlined below:

1. The applicant must install and maintain surveillance cameras and recorders to monitor and record all entrance and exit points to the building. The cameras should include the area around the mail boxes. The cameras should also monitor the 50 metre vicinity outside the building including, but not limited to, the footpath area in front and at the rear of the premises. CCTV cameras should also cover the public spaces. Recordings should be made twenty-four (24) hours a day seven (7) days a week.

2. As a minimum, CCTV cameras at entry and exit points to the premises MUST record footage of a nature and quality in which it can be used to **identify** a person recorded by the camera. All other cameras MUST record footage of a nature and quality in which it can be used to **recognise** a person recorded by the camera.

3. The time and date must automatically be recorded on all recordings made whilst it is recording. All recordings are to be kept for a minimum period of thirty (30) days before they can be reused or destroyed.

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4. If requested by police, the applicant is to archive any recording until such time as they are no longer required.

5. Recordings are to be made in a common media format such as Windows Media Player or similar or should be accompanied by applicable viewing software to enable viewing on any windows computer.

6. The CCTV control system should be located within a secured area of the premise and only accessible by authorised personnel.

7. If the CCTV system is not operational, immediate steps are to be taken by the applicant to ensure that it is returned to a fully operational condition as soon as possible.

Police recommend in addition to the above CCTV a back to base alarm system as well as duress alarms within the business area.

Lighting

There is a proven correlation between poor lighting, fear of crime, the avoidance of public places and crime opportunity (Painter, 1997). Good lighting can assist in increasing the usage of an area. There was minimal indication of lighting with the plans, which were reviewed to indicate the lighting proposals for the development.

General Comments:

- Lighting should be designed to the Australian and New Zealand Lighting Standards.
- A lighting maintenance policy needs to be established for the development.
- Australia and New Zealand Lighting Standard 1158.1 – Pedestrian, requires lighting engineers and designers to consider crime risk and fear when selecting lamps and lighting levels.

Recommended Conditions of Consent:

- The areas around the entrances and communal areas should be well lit and that all lighting should be designed to Australian and New Zealand Lighting standards.
- Sensor lighting should be installed into areas that may be areas of concealment.

Territorial Re-enforcement

Criminals rarely commit crime in areas where the risk of detection and challenge are high. People who have guardianship or ownership of areas are more likely to provide effective supervision and to intervene in crime than passing strangers. Effective guardians are often ordinary people who are spatially 'connected' to a place and feel an association with, or responsibility for it. *Territorial Re-enforcement* uses actual and symbolic boundary markers, spatial legibility and environmental cues to 'connect' people with space, to encourage communal responsibility for public areas and facilities, and to communicate to people where they should/not be and what activities are appropriate.

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General Comments

- Confusion resulting from vague entry design can legitimise exploration, trespassing and excuse making by opportunistic criminals. Entries should be legible and inviting.
- Effective signage and directions will provide guidance to visitors in locating main areas and keep them away from restricted areas.
- Signs can also assist in controlling activities and movements throughout the premises. Signage should *reinforce* (not be an alternative to) effective design.

Recommended Conditions of Consent:

- A street sign should be prominently displayed at the front of the development to comply with Local Government Act, 1993, Section 124, Order No.8.
- Signage also needs to be provided at entry/exit points and throughout the development to assist users.
- Signage also needs to be provided on any fire exit doors warning users that the doors are to be used for emergency purposes only.
- Signage is to be used to indicate entries and exits. Signs should be clear, legible and useful. The front of the building should have clear signage in regard to street numbers so that emergency services are able to clearly read the numbers.

Access Control

Access control treatments restrict, channel and encourage people and vehicles into, out of and around the development. Way-finding, desire-lines and formal/informal routes are important crime prevention considerations.

Access control is used to increase the time and effort required to commit crime and to increase the risk to criminals. *Natural access control* includes the tactical use of landforms and waterways features, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens.
Technical/Mechanical access control includes the employment of security hardware and *Formal (or Organised) access control* includes on-site guardians such as employed security officers.

Recommended Conditions of Consent:

- Access control should be set in place to exclude unauthorized access to the buildings as well as to restricted areas.
- All areas should be fitted with doors that comply with Australian Design Standards.
- The locks fitted to the doors should be of a high quality and meet the Australian design standards.
- Any glass within these doors should be laminated to enhance the physical security of the doors.

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- Fire exit doors to the development should be fitted with single cylinder locksets (Australia and New Zealand Standard – Lock Sets) to restrict unauthorized access to the development.
- As mail theft is a reoccurring crime in the metropolitan area, letter boxes should be secured and have a lock.

Conclusion

The New South Wales Police have a vital interest in ensuring the safety of members of the community and their property. By using the recommendations contained in this evaluation, any person who does so acknowledges that:

1. It is not possible to make areas evaluated by the NSWP absolutely safe for members of the community or their property
2. It is based upon the information provided to the NSWP at the time the evaluation was made,
3. The evaluation is a confidential document and is for use by the consent authority or organizations referred to on page 1 only,
4. The contents of this evaluation are not to be copied or circulated otherwise that for the purposes of the consent authority or organization referred to on page 1.

The NSW Police hopes that by using the recommendations contained in this document, criminal activity will be reduced and the safety of members of the community and their property will be increased. However, it does not guarantee that all risks have been identified, or that the area evaluated will be free from criminal activity if its recommendations are followed.

We would like to thank you for the opportunity of commenting on the development application and should you require further information on the subjects mentioned within this report feel free to contact Senior Constable Julie Lewis or Senior Constable Shane Carne, Crime Prevention Officers, Ryde Police Area Command, on 9879 9699.

David Waddell
Superintendent
Commander
Ryde Police Area Command

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PLANNING PROPOSALS

3 PLANNING PROPOSAL - HERITAGE REVIEW

Report prepared by: Senior Strategic Planner
Report approved by: Senior Coordinator - Strategic Planning; Manager - Urban Strategy; Director - City Planning and Environment
Report dated: 30/05/2019 **File Number:** LEP2019/38/4 - BP19/625

City of Ryde
Local Planning Panel Report

Site Address and Ward	**VARIOUS**
Current Planning Provisions	Ryde Local Environmental Plan 2014 (RLEP 2014) - *Schedule 5 Environmental heritage* currently contains: • 173 heritage • 5 heritage conservation areas • 2 archaeological sites
Planning Proposal Overview	The Planning Proposal (PP) seeks to make the following amendments to *Schedule 5 Environmental heritage* of RLEP 2014: 1. *Part 1 Heritage Items* - Add 44 new heritage items 2. *Part 2 Heritage conservation areas* – Add 6 new heritage conservation areas 3. *Part 3 Archaeological sites* – Add 2 new archaeological sites 4. Amend descriptions of 6 existing heritage items. The PP also seeks to amend RLEP 2014 *Heritage Maps* to incorporate the additional heritage items, conservation areas and archaeological sites
Property Owner	Numerous – City of Ryde, State Authorities and privately owned properties.
Applicant	City of Ryde
Report Author	Susan Wotton – Senior Strategic Planner
Lodgement Date	Not applicable. City of Ryde has prepared the PP consequential to a Council resolution of the 28 November 2017 to carry out a city-wide heritage study.
Reason for Referral	Required by Ministerial Direction made under Section 9.1 of the *Environmental Planning and Assessment Act 1979* dated 27 September 2018

ITEM 3 (continued)

Recommendation	That the Ryde Local Planning Panel recommends to Council that the planning proposal be submitted for Gateway Determination under 3.34 of the *Environmental Planning and Assessment Act 1979*
Attachments	Nil

1. Executive Summary

At its meeting of 28 November 2017 Council unanimously resolved:

> *That Council, in order to ensure certainty in the development process, undertakes a City wide heritage study to ensure items of heritage significance are identified and options for their adequate protection recommended…*

GML Heritage Consultants were engaged by Council in 2018 to conduct a comprehensive heritage review of the City of Ryde Local Government Area. The consultants identified in a report titled "City of Ryde Heritage Review" dated June 2019 built, landscape and archaeological items that are of heritage significance to the City of Ryde for inclusion in *Schedule 5 Environmental heritage* of the RLEP 2014.

Based on the recommendations of the GML report a PP has been prepared that seeks to make the following amendments to *Schedule 5 Environmental heritage* of RLEP 2014:

1. *Part 1 Heritage Items* - 44 new heritage items
2. *Part 2 Heritage conservation areas* – 6 new heritage conservation areas
3. *Part 3 Archaeological sites* – 2 new archaeological sites.
4. Amend descriptions of 8 existing heritage items.

The PP also seeks to amend RLEP 2014 *Heritage Maps* to incorporate the additional heritage items, conservation areas and archaeological sites.

The PP is in alignment with all relevant strategic plans, including the Greater Sydney Commission's *Greater Sydney Regional Plan - Metropolis of Three Cities* and *North District Plan (March 2018)*, and City of Ryde's *The City of Ryde 2028 Community Strategic Plan* and *The City of Ryde Local Planning Study 2010.*

Background

Ryde Heritage Study 2010

The *Ryde Heritage Study 2010* was commenced in 2003, when the members of Council's Heritage Advisory Committee sought heritage nominations from the community groups they represented.

The *Ryde Heritage Study 2010* identified and recommended 71 properties (47 dwellings, 15 public buildings/churches and 9 stone survey markers) be heritage

ITEM 3 (continued)
listed, together with updated information on existing items and boundary changes to a conservation area.

Council resolved on the 17 August 2010 to:

- list properties only where the owners consented to the heritage listing,
- update existing heritage listings and
- make boundary changes to reduce the size of the Maxim Street Heritage Conservation Area.

In summary 6 dwellings, 2 public buildings and 9 stone markers were listed.

Council further resolved not to pursue the heritage listing of any property unless the land owner specifically applied for a heritage listing and that the properties that had been rejected from this process not be considered in any future heritage studies.

Interim heritage orders (IHO)
Since 2010 a number of properties recommended to be listed in the *Ryde Heritage Study 2010* have been demolished or substantially altered.

In response to community concern regarding the loss of local heritage, two of the properties identified in the 2010 Study, 87 Bowden Street Meadowbank and 330 Rowe Street Eastwood, have had IHOs imposed and in both cases the IHOs on the sites culminated in subsequent amendments to RLEP 2014 and the listing of the two properties as items of local heritage significance *on Schedule 5 Environmental heritage.*

When reviewing the action to be undertaken to protect and heritage list 330 Rowe Street Eastwood Council on the 28 November 2017 resolved in part the following:

> *That Council, in order to ensure certainty in the development process, undertakes a City wide heritage study to ensure items of heritage significance are identified and options for their adequate protection recommended*.

Details of the heritage study undertaken are provided later in the report.

Since 2017 a further two IHOs have been imposed on the following properties in Ryde:

- 68 Denistone Road Denistone – on 25 September 2018 Council resolved to place an IHO over the property, prepare a PP to list the property as an item of local heritage significance within *Schedule 5 Environmental heritage* of RLEP 2014 and upon receipt of the Gateway Determination place the PP on community comment. An IHO was imposed on the property in September 2018. A detailed heritage assessment recommended that the property be listed. The PP for the site was exhibited from 29 May 2019 to 28 June 2019. As the PP has been exhibited, it has not been included in the city wide study and will be processed separately.

ITEM 3 (continued)

- 68 and 70 Chatham Road Denistone – on 26 February 2019 Council resolved to place an IHO on the property and prepare a PP to list multiple properties within Chatham Road, Denistone as a heritage conservation area of local heritage significance within *Schedule 5 Environmental heritage* of RLEP 2014.

  GML Heritage Consultants assessment confirmed that the area warranted listing as a heritage conservation area. It has been included in the city wide review and it is proposed to be processed as part of this PP.

GML Heritage Consultants

In response to the Council resolution of the 28 November 2017 a *Request for proposa*l (RFP) for a heritage study was developed, which included the following:

- Identify pre-1940 buildings and places of heritage significance for possible inclusion as heritage items or heritage conservation areas in Council's planning controls. This is consistent with feedback from the community relating to protection of heritage and local character generated by development applications.
- Review the Character Areas and Special Areas identified in the Ryde Development Control Plan (DCP) 2014 Part 3 Development Types and Part 5 Special Areas for consideration as potential Heritage Conservation Areas.
- Compliance with guidelines produced by the Heritage Council of NSW.
- Produce Heritage Inventory Database Sheets for all places agreed to by Council in accordance with the NSW Heritage Manual Guidelines, the State Heritage Inventory Database guidelines which are stylistically consistent with Ryde Council's existing Heritage Inventory Database listings.

The RFP was open to all appropriately interested persons and organisations.

Submissions were required to detail:

- the proposed approach and methodology;
- the experience and qualification of individuals proposed to undertake the project;
- examples of experience in similar projects in the last 5 years.

Evaluation of the RFP submissions was carried out by a panel, based on the selection criteria identified in the RFP. GML Heritage Consultants were appointed in late 2018.

GML demonstrated significant industry experience and capability in the fields of heritage planning, heritage conservation and archaeology and have advised NSW government agencies, Councils and private sector development professionals for over 20 years.

City of Ryde Heritage Review June 2019

ITEM 3 (continued)
The report provided by GML is informed by the principles contained in *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance*, 2013 (the Burra Charter). The heritage significance assessments undertaken as part of the review draw upon the principles contained in the Burra Charter and adhere to the methodology provided within the NSW Heritage Office publication *Assessing Heritage Significance*, 2001 and the detailed process set out in the *NSW Heritage Manual* published by the NSW Heritage Office.

The review was undertaken in three stages:

Stage 1 – Identification of potential places of significance

- Review background documents such as previous studies and potential listings identified by Council's planning staff.
- Broad review of the Ryde Local Government Area (LGA) for contextual environmental and historical understanding.
- Inspect potential properties from the public domain.
- Update the Ryde Heritage Advisory Committee on methodology and progress to date.
- Submit a shortlist of potential heritage items and conservation areas to Council planning staff for comment.

Stage 2 – Assessments of Significance, Draft Inventory Sheets and Draft Review Report

- Complete assessments against the NSW Heritage Office standard criteria including statements of significance and draft inventory sheets for the new heritage items and conservation areas.
- Draft the review report, including inventory sheets for each potential item for inclusion on the State Heritage Inventory Database.

Stage 3 – Final Review Report

- Finalise the report with comprehensive recommendations for additional items for inclusion on Schedule 5 of the RLEP 2014.

The final review report contains further details as to the shortlisted sites and the recommended listings. However, in order to protect significant items from threat while no protections are currently in place, the final report has been made available to the Ryde Local Planning Panel separately and confidentially. Proposed items will be published should a Gateway determination approve the exhibition of the PP.

3. The Planning Proposal (PP)
The purpose of the PP is to:

- Provide appropriate protection for built, landscape and archaeological heritage within the City of Ryde, through new heritage listings in *Schedule 5 Environmental heritage* of RLEP 2014 and
- To ensure greater certainty is provided for in the development process.

In summary the PP – Heritage Review seeks to make the following amendments to RLEP 2014:

ITEM 3 (continued)

1. *Schedule 5 Environmental heritage - Part 1 Heritage Items* - Add 44 new heritage items,
2. *Schedule 5 Environmental heritage - Part 2 Heritage conservation areas* – Add 6 new heritage conservation areas
3. *Schedule 5 Environmental heritage - Part 3 Archaeological site* – Add 2 new archaeological sites.
4. *Schedule 5 Environmental heritage – Part 1 Heritage Items* - Amend descriptions of 6 existing heritage items and
5. Ryde LEP 2014 *Heritage Maps* - incorporate the additional heritage items, conservation areas and archaeological sites.

The PP is in accordance with the requirements under Section 3.33 of the *Environmental Planning and Assessment Act 1979* and the NSW Department of Planning and Environment's 'A guide to preparing planning proposals' (dated August 2016) and adequately sets out the following:

- A statement of the objectives or intended outcomes of the proposed amending LEP;
- An explanation of the provisions that are to be included in the proposed amending LEP;
- Justification for those objectives, outcomes and provisions and the process for their implementation;
- Maps, where relevant, to identify the intent of the planning proposal and the area to which it applies;
- Details of the community consultation that is to be undertaken on the planning proposal; and
- A project timeline.

4. Referrals

Council's Local Studies Librarian was consulted to ensure relevant previously published material was available for the purposes of the review.

Dr Peter Mitchel, Honorary Associate Professor of Physical Geography at Macquarie University and Council's Heritage Advisory Committee were also consulted and provided input into the initial identification of potential items for review.

Council's Parks Department have been consulted regarding the proposed PP and raise no objections.

Additional consultation with the Parks Department will occur during the official exhibition period.

ITEM 3 (continued)

6. Planning Direction

On 27 September 2018 the Minister for Planning brought into effect a new Direction regarding the referral of Planning Proposals to Local Planning Panels. This Planning Proposal is subject to the Direction which stipulates that:

> *1. A council to whom this direction applies is required to refer all planning proposals prepared after 1 June 2018 to the local planning panel for advice…*
>
> *2. When a planning proposal is referred to the local planning panel for advice in accordance with this direction it is to be accompanied by an assessment report prepared by the council staff setting out recommendations in relation to the planning proposal, including whether or not the planning proposal should be forwarded to the Minister or Greater Sydney Commission under section 3.34 of the Environmental Planning and Assessment Act 1979.*
>
> *3. The local planning panel must have given its advice on the planning proposal before council considers whether or not to forward it to the Minister or Greater Sydney Commission under section 3.34 of the Environmental Planning and Assessment Act 1979.*

The purpose of this report is to obtain the Panel's advice, given the methodology of the study, on whether or not the PP should proceed to Gateway Determination and community consultation.

Community consultation would then be reported to Council, in accordance with the legislation, for consideration prior to their decision about whether or not to bring the proposed LEP amendments into effect.

6. Planning Assessment

The assessment of the subject planning proposal has been undertaken in accordance with the NSW Department of Planning and Environment's '*A guide to preparing planning proposals'* (dated August 2016).

- **Part 1 Objectives or intended outcomes**

The PP states that its intended outcome of is to:

- Provide appropriate protection for built, landscape and archaeological heritage within the City of Ryde, through new heritage listings in *Schedule 5 Environmental heritage* of RLEP 2014 and

- To ensure greater certainty is provided for in the development process.

- **Part 2 Explanation of provisions**

ITEM 3 (continued)
The PP – Heritage Review seeks to make the following amendments to *Schedule 5 Environmental heritage* of RLEP 2014:

1. *Heritage Items* - Add 44 new heritage items.

The heritage items comprise:
- 35 built items - The majority of built heritage items are Federation, Victorian and interwar style dwellings. There are a number of churches, shopfronts and a school building
- 6 culturally significant landscape items - Landscape sites include foreshore parks and public landscapes where the course and pattern of the items history warrants listing.
- 3 street tree listings – 9 road verges are identified as containing significant street trees

The individual proposed heritage items are identified in *Section 4.0 Explanation of Provisions* of the PP.

2. *Heritage conservation areas* – Add 6 new heritage conservation areas. The 6 proposed Heritage Conservation Areas (HCA) and their physical characteristics are identified in the PP.

3. *Proposed archaeological sites* – Add 2 new sites.

4. Amend the descriptions of 6 existing heritage items.

5. Amend RLEP 2014 *Heritage Maps* to incorporate the additional heritage items, conservation areas and archaeological sites

- **Part 3 Justification**

Need for the Planning Proposal

The NSW Department of Planning and Environment's 'A guide to preparing planning proposals' requires the following two questions be answered to demonstrate the need for the proposal:

1. Is the planning proposal a result of any strategic study or report?

Response: The PP (an amending LEP) is the result of a City wide heritage study undertaken by experienced GML Heritage Consultants in accordance with NSW Heritage Council guidelines.

2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Response: The PP is Council's only means of ensuring the protection of properties and places within the City of Ryde assessed as having heritage significance. The PP will ensure that the sites are recognised and protected from development that

ITEM 3 (continued)
may adversely affect their significance and contribution to the environmental heritage of the City of Ryde.

Relationship to Strategic Planning Framework – The Strategic Merit Test

A strategic merit test is provided in the following table.

Strategic Merit Issue	Comment
State Environmental Planning Policies and Local Directions	The planning proposal is consistent with the relevant State Environmental Planning Policies and Local Planning Directions under Section 9.1 of the Environmental Planning and Assessment Act 1979. An analysis of compliance with these policies is included in the planning proposal.
Greater Sydney Region Plan - A Metropolis of Three Cities	The planning proposal is consistent with the Greater Sydney Region Plan - A Metropolis of Three Cities.
North District Plan	The planning proposal is consistent with the North District Plan.
Ryde Local Planning Study / Statement	The planning proposal is consistent with Council's adopted Ryde Local Planning Study 2010. The planning proposal is also consistent with "Planning Ryde: Draft Local Strategic Planning Statement 2019". Note: When finalised by Council, this document will replace the 2010 Local Planning Study as a consideration in the strategic merit test.

7. Conclusion

The report recommends that:

a) Based on the extensive and comprehensive nature of the GML Heritage Consultants report titled "*City of Ryde Heritage Review*" dated June 2019 Ryde, which was carried out in line with the NSW Heritage Council Guidelines, the findings and recommendations of the report be acknowledged and supported.

b) Council proceed to request a Gateway Determination to Amend Schedule 5 Environmental heritage of RLEP 2014 for the following reasons:

1. The PP provides appropriate protection for built, landscape and archaeological heritage within the City of Ryde, through new heritage

ITEM 3 (continued)

listings in *Schedule 5 Environmental heritage* of RLEP 2014, and will result in current heritage listings being correctly described.

2. Legislative protection can only be provided to the numerous items and conservation areas identified in the report "*City of Ryde Heritage Review"* by including the items and areas in *RLEP 2014, Schedule 5 Environmental Heritage.*
3. The PP will provide greater certainty for the development process and reduce the need for Interim Heritage Orders on an ad hoc basis.

8. Recommendation

a) That the findings and recommendations of the comprehensive and detailed heritage study of the City of Ryde carried out by GML Heritage Consultants and known as the "*City of Ryde Heritage Review*" dated June 2019 be acknowledged and supported by the Ryde Local Planning Panel.

b) That the Ryde Local Planning Panel recommend to Council that the planning proposal be submitted for Gateway Determination under 3.34 of the *Environmental Planning and Assessment Act 1979*.

ATTACHMENTS

1	CONFIDENTIAL - Draft Planning Proposal - Heritage Review 2019	31 Pages
2	CONFIDENTIAL - Heritage Review Report 2019 - Final Report	20 Pages

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